Luton Rising
Our airport.
Our community.
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November 2023

London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 8 Additional Submissions (Examination)

8.89 Applicant's response to Issue Specific Hearing 2 Actions 5 and 6: Past Employment Estimates

Infrastructure Planning (Examination Procedure) Rules 2010

Application Document Ref: TR020001/APP/8.89

The Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

London Luton Airport Expansion Development Consent Order 202x

8.89 APPLICANT'S RESPONSE TO ISSUE SPECIFIC HEARING 2 ACTIONS 5 AND 6 – PAST EMPLOYMENT ESTIMATES

Deadline:	Deadline 4
Planning Inspectorate Scheme Reference:	TR020001
Document Reference:	TR020001/APP/8.89
Author:	Luton Rising

Version	Date	Status of Version
Issue 1	November 2023	Additional Submission – Deadline 4

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1 PURPOSE

1.1.1 The purpose of this paper is to address two actions from Issue Specific Hearing 2 (ISH2) **[EV7-006]**:

a. Action 5: Provide a breakdown of jobs in relation to the original 2012 planning permission, including those that are non-airport related.

b. Action 6: Track the differences between the development of employment created by the original planning permission and what is being proposed. This is in light of very similar strategies, Luton still having a high rate of deprivation and the levelling up agenda.

2 2012 EMPLOYMENT FORECAST

2.1.1 As explained in Appendix 1 to the Oxford Economics Report on the Economic Impact of London Luton Airport (**ES Appendix 11.1 [APP-079]**), the employment estimates, associated with the original planning application for the expansion of the airport to 18 mppa, were prepared by Halcrow (**Appendix A**). These employment estimates were based on identifying the number of workers employed in certain business sectors within the two 'lower level super output areas[1]' within which the airport lies. This included some employment that was not strictly airport related due to overlaps in business sectors.

2.1.2 The airport operator then refined this approach for the purpose of its Annual Monitoring Reports (AMRs) using date from the Inter Departmental Business Register (IDBR) for the area within the airport concession boundary (leased through the concession agreement to London Luton Airport Operations Ltd), with the addition of companies located in adjacent streets and business parks.

2.1.3 Neither of these methodologies robustly identifies employment that is strictly related to activity at the airport. This has been corroborated by Genecon for the Host Authorities in its comments on socio-economic matters raised at ISH2 (page 14 of the Host Authorities Post Hearing Submissions **[REP3-093])**:

"Genecon note that the Oxford Economics report [APP-079] does cover this in footnote 17 on page 15 (and also page 50), pointing to the fact that Oxford Economics have had access to IDBR data (which meant that they were able to focus on a smaller geographical area), whereas Halcrow's analysis was based on BRES data at LSOA area. Effectively, Oxford Economics' projections are more accurate, arguably more prudent, and the two analyses should therefore not be directly compared without recognition of the differences.

2.1.4 Because of the methodological differences, it is difficult to compare the two estimates.

[1] Lower level (or layer) super output areas are defined by the Office for National Statistics as being made up of groups of OAs (output areas which are the lowest geographic level for census statistics), usually four or five. They comprise between 400 and 1,200 households and have a usually resident population between 1,000 and 3,000 persons.

2.2 Halcrow Estimates

2.2.1 Because of uncertainty regarding which SIC codes[2] to be included in the estimates of on and off-site airport related employment, Halcrow produced Low, Medium and High estimates for employment at or around the airport in 2011 when the airport was handling 9.45 mppa. The Halcrow baseline employment estimates are shown in Figure 2.1.

Figure 2.1: Halcrow estimates of baseline direct employment

Table 6.5 Range of current direct employment estimates for London Luton Airport (2011)

	Low	Medium	High
Current Estimate of Employment	6,100	8,250	9,500

Source Halcrow 2012, BRES 2011

2.2.2 A breakdown of this employment by SIC category is shown in Figure 2.2 below.

[2] Standard Industrial Classification Codes

Figure 2.2: Direct employment by industrial grouping for the medium estimate 2011

Table 6.6 Current direct employment (2011) for the mid estimate by industrial grouping

SIC GROUPINGS	FULL TIME	PART TIME	FTEs
Agriculture, Fishing and Mining	0	0	0
Extraction, Mining, Quarrying	0	0	0
Manufacturing	1,300	100	1,350
Electricity, Gas, Water Supply and Recycling	0	0	0
Construction	0	0	0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	500	450	750
Hotels, Restaurants and Leisure	200	250	300
Air Transport and Supporting Activities (including Training)	3,350	450	3,550
Other transport, storage and communication	1,400	300	1,550
Business Services, Public Administration and Other Services	650	150	750
Total	**7,400**	**1,700**	**8,250**

Source Halcrow 2012, BRES 2011

2.2.3 These levels of employment were then grown in line with the forecast of 17.8 mppa being reached in 2028, in line with the passenger forecasts underpinning the planning application using an econometric relationship derived from a cross section of 7 airports. The relationship took an element of employment as fixed and grew the remainder in line with the forecast growth in passengers and

cargo combined in terms of workload units[3]. The results are shown in Figure 2.3.

Figure 2.3: Halcrow estimates of direct employment in 2028 at 17.8 mppa

Table 6.9 Range of low to high forecasts of direct employment for London Luton Airport for the development scenario (2028)

	Low	Medium	High
Future (development scenario) Forecast for Employment	10,100	13,350	17,450

Source Halcrow 2012

2.2.4 A breakdown by SIC category was also provided, as shown in Figure 2.4, and, although different growth rates appear to have been applied to different SIC groupings, it is not clear on what basis these were derived from the Halcrow Report. Nor is it clear how medium to long term productivity trends were built in, over and above that derived from considering on-site employment across a range of airports with different passenger and cargo throughputs.

[3] A workload unit is 1 passenger or 100kg of cargo.

Figure 2.4: Forecast direct employment by industrial grouping for the medium estimate at 17.8 mppa

Table 6.10 Development scenario mid estimate direct employment forecasts by industrial grouping (2028)

SIC GROUPINGS	FULL TIME	PART TIME	FTEs
Agriculture, Fishing and Mining	0	0	0
Extraction, Mining, Quarrying	0	0	0
Manufacturing	1,950	100	2,000
Electricity, Gas, Water supply and Recycling	0	0	0
Construction	0	0	0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	850	700	1,200
Hotels, Restaurants and Leisure	300	450	550
Air Transport and Supporting Activities (including Training)	5,700	750	6,100
Other transport, storage and communication	2,450	550	2,700
Business Services, Public Administration and Other Services	700	150	800
Total	**12,000**	**2,700**	**13,350**

Source Halcrow 2012

2.2.5 It is not possible, therefore, to state directly how much of the baseline or projected employment would be classed as non-airport related as the detailed data behind the Halcrow projections is not available other than presented in Figure 2.2.

2.3 Airport Annual Monitoring Reports

2.3.1 As noted above from 2010, the airport operator used a refined methodology for assessing the level of employment at or surrounding Luton Airport as reported in their Annual Monitoring Reports (appended as **Appendix B**, **C**, **D**, **E**, **F**, **G**, **H**, **I** and **J**). Again, the description of the estimate of employment is important as it states that this includes businesses in and around the boundary of the airport, as distinct from those whose operations are directly related to activity at the Airport.

2.3.2 Employment was again reported in relation to the SIC groupings, as shown in Table 2.1 but the reported data shows apparent inconsistencies from year to year reflecting the nature of the data used to assemble the annual estimates of employment in the vicinity of the airport.

Table 2.1: Estimated Employment in the vicinity of the airport by SIC grouping 2011-2019

SIC Grouping	2011	2012	2013	2014	2015	2016	2017	2018	2019
Accommodation and Food Service Activities	400	200	400	500	n.k	500	1,000	500	500
Administrative and Support Service Activities	1,800	1,700	1,500	1,800	n.k	1,300	2,100	2,800	2,600
Manufacturing	1,300	1,300	1,300	1,400	n.k	1,100	1,200	1,100	800
Public Administration & Defence; Compulsory Social Security									300
Transportation and Storage	3,900	3,800	4,400	4,400	n.k	5,700	5,300	5,000	5,500
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	400	600	200		n.k	400	400	600	700
Unclassified	300	600	600	400	n.k	300	200	400	800
Grand Total	8,100	8,200	8,400	8,500	9,500	9,300	10,200	10,400	11,200

2.3.3 It is evident that employment has grown as the airport grew from 9.45 mppa to handling 18 mppa in 2019.

2.3.4 The AMR estimate for 2011 was somewhat lower than the baseline estimate produced by Halcrow reflecting the refined methodology and additional data sources used, a discrepancy of 150 jobs or 2%.

2.3.5 Over the period to 2019, employment growth relative to passenger growth amounted to an increase of just over 350 for every additional million passengers handled at the airport.

2.4 DCO Assessment

2.4.1 Following the more detailed approach adopted by Oxford Economics in 2019, initial estimates for direct airport related employment were made relating to 2017 and presented in the first statutory consultation. These were updated in 2021 and rebased to 2019 to inform the PEIR and Draft Need Case for the second statutory consultation. The differences between the results are described in Appendix 2 to the Oxford Economics Report on the Economic Impact of London Luton Airport (**ES Appendix 11.1 [APP-079]**).

2.4.2 The updated and more detailed estimate of airport related employment for 2017 was 9,900 jobs and for 2019, 10,900 jobs. The breakdown by category is given in Figure 47 of the Oxford Economics Report. In both cases, this more detailed methodology results in 300 fewer jobs being classed as strictly airport related than included within the AMR figures.

2.4.3 Employment through the DCO is projected to grow by 300 jobs for each additional million passengers, although the phasing of employment growth is related to the facilities being delivered at each phase, with step changes consequent upon the delivery of Terminal 2, additional hotels and hangar development.

Comparison

2.4.4 In both the 2017 and 2019 cases, the more detailed estimate for employment directly related to the operation of the airport is 300 jobs less than reported in the vicinity of the airport in the AMRs. This is a further discrepancy of 2.5-3%.

2.4.5 Overall, this would suggest that the baseline data used by Halcrow in 2012 may have overstated employment, for the reason set out in paragraph 2.1.1 above, related to the operation of the airport by the order of 5%. Adjusting the Halcrow medium estimate by 5% would have resulted in an estimate of direct airport related employment at 17.8 mppa of the order of 12,700 or of the order of 9,600 jobs at the low end of the range. This would suggest that employment growth has, in practice, been towards the lower end of the range originally estimated by Halcrow but it has, nonetheless, been significant with of the order of 3,000 additional jobs created as the airport has grown from 9.45 to 18 mppa.

2.5 Future Employment projections

2.5.1 As noted above, growth of the airport to 18 mppa delivered growth of 3,000 additional jobs since 2011. Growth of the airport to 32 mppa is expected to deliver a further 4,200 direct jobs; of which 800 would be created at 21.5 mppa and 2,300 at 27 mppa.

3 IMPACT OF EMPLOYMENT GROWTH ON DEPRIVATION IN LUTON

3.1 Historic Performance

3.1.1 In relation to the impact of employment growth at the airport and the effect of deprivation in Luton, data is available on a consistent basis from 2016 (Ref 1). An estimate of total employment in 2011 is taken from the Local Plan evidence base (Ref 2). Table 3.1 shows airport related employment (adjusted by 300 jobs from the AMR figures to reflect non-airport related employment within those totals as per paragraph 2.4.2 above) and total recorded employment in Luton.

Table 3.1: Airport employment and total employment in Luton

	Airport Employment	Total Employment
2011	7,800	96,350
2016	9,000	94,000
2017	9,900	95,000
2018	10,100	92,000
2019	10,900	91,000

Source: London Luton Airport Operations Ltd, Luton Borough Council

3.1.2 The data in Table 3.1 suggest that while employment at the airport has increased by 3,100 jobs since 2011, overall employment in Luton has fallen by a greater amount, 5,350 jobs. In this context, the contribution of airport related employment is even more significant in terms of supporting the objective to eliminate poverty in Luton and to levelling up.

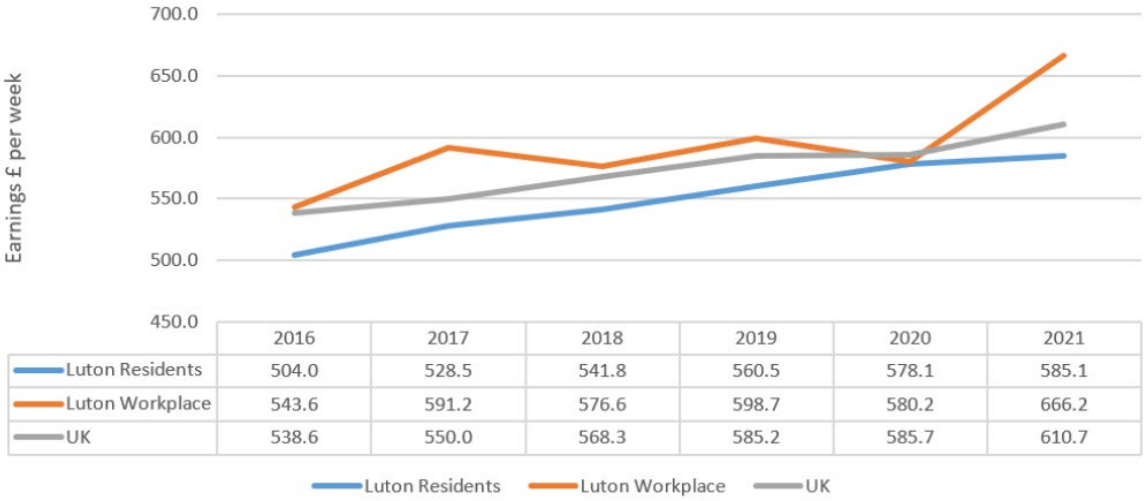
3.1.3 Over the period from 2016 to 2019, there is some evidence of growth in earnings in Luton as shown in Figure 3.1 below. This is evident at the workplace and residence level. This would suggest that, as shown in Figure 10 of the Oxford Economics Report (**ES Appendix 11.1 [APP-079]**), employment at the airport tends to be a higher wage level overall than the average in the economy.

3.1.4 Notwithstanding that not all employees at the airport, either now or in the future, live in Luton itself. The indicators would strongly suggest that growth in employment at the airport is already and will continue to play a major role in driving improvement in economic conditions in Luton.

3.1.5 Although Luton continues to be one of the local authority areas with the highest levels of deprivation, its ranking has improved from 59th most deprived in 2015 to 70th most deprived in 2019 (Ref 3). This suggests that the airport has played, and would be expected to continue to play, an important role in reducing levels of deprivation and in driving levelling up.

Figure 3.1: Earnings growth in Luton

Figure 7: Median full time earnings in Luton and UK, 2016-21



	2016	2017	2018	2019	2020	2021
Luton Residents	504.0	528.5	541.8	560.5	578.1	585.1
Luton Workplace	543.6	591.2	576.6	598.7	580.2	666.2
UK	538.6	550.0	568.3	585.2	585.7	610.7

Source: ONS

3.2 Employment and Training Initiatives

3.2.1 Although the S106 Agreement for the 18 mppa planning permission required the submission of an 'Employment Skills and Recruitment Plan', this was substantially less detailed than the **Employment and Training Strategy** submitted as part of the DCO **[APP-215]** and did not involve engagement by other parties such as the local authorities and training providers. The plan largely comprised of commitments to advertising vacancies locally, and encouraging other on-site companies to do the same, working with local job centres and local procurement initiatives for the construction and operational phases.

3.2.2 Nonetheless, the evidence above would suggest that it has made a material difference in improving the economic performance of Luton.

The Applicant expects that the stronger initiatives contained within the **Employment and Training Strategy [APP-215]** would only serve to strengthen the contribution.

REFERENCES

Ref 1 Luton Borough Council, Employment and Earnings in Luton, April 2022.
Ref 2 Luton Borough Council, Luton Local Plan (2011-2031), Economy & Employment Background Paper.
Ref 3 Office for National Statistics.

ANNEX A - 2012 PLANNING APPLICATION EMPLOYMENT AND ECONOMIC ASSESSMENT

Employment and Economic Assessment

Version 1

London Luton Airport Planning Application

London Luton Airport Operations Limited

December 2012

Halcrow

Employment and Economic Assessment

London Luton Airport Planning Application

London Luton Airport Operations Limited

December 2012

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Document history

Employment and Economic Assessment

London Luton Airport Planning Application

London Luton Airport Operations Limited

This document has been issued and amended as follows:

Version	Date	Description	Created by	Verified by	Approved by
1	21/11/12	Draft Employment Chapter	Roz Davies	Ken Lam	Andrew Price
2	07/12/12	Draft Employment and Economic Assessment Report	Roz Davies	Employment Assessment: Ken Lam Economic Assessment: Karan Monga	Andrew Price
	11/12/12	Final Employment and Economic Assessment Report	Roz Davies	Employment Assessment: Ken Lam Economic Assessment: Karan Monga	Andrew Price

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Appendix

1 Executive Summary

This report is an employment and economic assessment of London Luton Airport Operations Limited's (LLAOL) proposals to make improvements to London Luton Airport (the Airport) in order to facilitate its growth. The assessment supports a planning application and environmental impact assessment which LLOAL is submitting to Luton Borough Council (LBC). The proposed improvements to the Airport will cater for future air passenger growth from the current 9.45 million passengers per annum (mppa) to 17.8 mppa by 2028. This will be achieved without expanding the existing area of the Airport and will involve road access, terminal, and aircraft manoeuvring and parking improvements.

1.1 Report Structure

1.1.1 Background chapters

The report provides background to the employment and economic assessment of the planning application by presenting:

- a summary of the key developments that are proposed in the planning application;
- the national and local level policy context in relation to infrastructure and aviation within which the Airport needs to operate; and
- the current socio-economic conditions of Luton and the wider area that the Airport impacts upon.

1.1.2 Employment and economic assessments

The report presents the current (2011) level of employment at the Airport at 9.5 million passengers per annum (mppa), and the forecasts for employment for two future scenarios – the base case and the development case:

Base case: this assumes that passenger growth at the Airport will grow from 9.5 mppa to reach capacity of 12.4 mppa by 2018 and remain at that level until 2028 with no planned future developments.

Development case: this assumes that passenger growth at the Airport will grow to 17.8 mppa by 2028 enabled by the developments planned by LLAOL.

The employment estimates are presented as gross direct, indirect and induced employment.

These forecasts are used to inform a second stage of the assessment which identifies the economic impact of the Airport. This assessment is also presented for the present day, the base case scenario and the development case scenario.

1.1.2.1 The employment assessment

The employment assessment involved the preparation of an econometric analysis of factors that affect employment growth across Luton and similar airports in the UK.

The first phase of the employment modelling was to identify the key factors (i.e. the explanatory variables) that determine the growth of employment (i.e. the dependent variable), at airports that are of a similar type and size to London Luton. This

involved analysing time series across seven UK based airports, a process called panel data regression analysis. This analysis was used to develop an econometric function that represents the key factors that are statistically significant in influencing direct employment at these airports.

The second phase was to use the function in a forecasting model to project gross direct employment at London Luton Airport in 2028 in the base case (12.4 mppa) and development case (17.8 mppa) scenarios. Once the direct forecasts were prepared, estimates for indirect and induced employment were made, based on HM Treasury Green Book guidance, Department for Business Innovation and Skills (BIS) supporting research, and English Partnerships guidance on Additionality.

The current level of direct employment at the Airport is estimated to be 8,250 jobs, with an additional 2,700 jobs generated through supply chain and induced income effects on the local economy, defined in this report as the Core Impact Area.

The results of the modelling show that if the Airport grew to the maximum base case position of 12.4 mppa in 2028 there would be approximately 11,050 jobs directly generated by the Airport with an additional 3,650[1] jobs generated through the supply chain and induced income effects.

If the planned developments took place and the Airport grew to 17.8 mppa, the direct employment generated at the Airport will be approximately 13,350 with a further 4,400 jobs generated through the supply chain and induced income effects.

The total number of direct jobs that can be attributed to the planned development is estimated by subtracting the base case estimate from the development case estimate. A total of 2,300 direct jobs would be attributable to the planned developments and a further 750 through the supply chain.

1.1.2.2 The economic impact assessment

The economic value of the Airport in the current, base case and development case scenarios has been modelled based on two key effects that arise from the operation of the Airport. The first is the level of direct income injected into the local economy. The second is the level of government taxation revenues generated by the Airport.

The direct income injection into the local economy arising from the operation of the Airport has been based on three components:

- the wages of direct onsite and offsite workers;

[1] Employment estimates/forecasts rounded to nearest 50 jobs

- local income arising from direct business expenditure on goods and services; and
- business profits that are likely to be invested back into the local economy.

The level of government taxation revenue associated with the Airport includes proceeds for central government such as business and personal taxes on the income generated by firms and workers and Air Passenger Duty; it also includes income generated for local government through business rates received from firms operating within the Airport boundary.

Impact of direct income in the local economy

The total income injection from the current operation of the Airport into the local economy is approximately £790[2] million in 2012 prices, of which approximately £200 million is a result of supply chain and induced income multiplier effects.

If the planned developments did not go ahead and the Airport growth was constrained to the base case scenario of 12.4 mppa, the annual income injected into the local economy by the Airport would be approximately £1.08 billion of which £270 million would be a result of supply chain and induced income effects.

If the Airport grows to 17.8 mppa by 2028 as planned, it would inject an annual income of £1.30 billion in 2028 into the Core Impact Area (including supply chain and induced income effects). Of this approximately £220 million would be attributable to the planned developments. The drivers of this increase would be from the wages and salaries of the increased number of workers, and the increase in business expenditure and profits.

Impact on government revenues

*T*he current government revenues generated by the Airport are £220 million. These include business and personal taxes on income, business rates and Air Passenger Duty.

If the Airport grew in the base case scenario to 12.4 mppa, government revenues generated in 2028 would be £280 million.

If the Airport grew to 17.8 mppa by 2028 government revenues generated by the Airport would reach approximately £360 million, of which approximately £80 million would be attributable to the growth associated with the project. This is based on taxes paid by passengers and businesses to central government and business rates paid to local government.

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[2] Economic estimates/forecasts rounded to nearest £10 million

Total Economic Impact

Combining the figure for income injection into the local economy with the government revenues produces an estimate of the overall economic value of the Airport. The current economic value is approximately £1 billion. This is expected to grow to £1.4 billion in the base case scenario of 12.4 mppa in 2028. If the proposed developments went ahead and the Airport grew to 17.8 mppa, the economic value would be £1.7 billion. Therefore £300 million would be attributable to the growth planned in the proposals.

2 Introduction

Halcrow Group Ltd has been commissioned by London Luton Airport Operations Ltd (LLAOL) to prepare an employment and economic assessment of proposals to make improvements to London Luton Airport (the Airport) in order to facilitate its growth as part of a planning application and environmental impact assessment.

LLAOL is proposing to develop the Airport to cater for a projected increase in air passenger numbers from approximately 9.5 million passengers per annum (mppa) today to 17.8 mppa by 2028[3]. The aim of the proposal is to achieve this level of growth by maximising the use of existing infrastructure at the Airport. The key components of the proposal are improvements to the Airport's:

- Dualling of the road from the Holiday Inn roundabout to the Central Terminal Area
- Improvements to the public transport hub adjacent to the terminal
- Construction of a multi-storey car park and pedestrian link on the western side of the existing Short Term Car Park (STCP)
- Extension to the Mid Term Car Park (MTCP) and Long Term Car Park (LTCP)
- Improvements to the terminal building involving internal reorganisation and minor extensions and building works
- Construction of a new pier (Pier B)
- Construction of a new taxiway parallel to Taxiway Delta
- Taxiway extensions and rationalisation of aircraft parking areas with new stands replacing and improving existing stands.

This report presents the current employment and economic value generated by the Airport. It also presents the results of forecast modelling for future employment and the economic impact of the Airport for two scenarios:

- Base case: if the planned developments are not implemented, passenger numbers at London Luton Airport are expected to grow to 12.4 mppa by 2018 and remain at that level until 2028; and
- Development case: the developments planned by LLAOL enable passenger numbers to grow at the Airport to 17.8 mppa by 2028.

[3] Civil Aviation Authority (2012): UK Airport Statistics 2012 -02. Table 1: Size of UK airports March 2011 - February 2012. http://www.caa.co.uk/docs/80/airport_data/201202/Table_01_Size_of_UK_Airports.pdf

The report consists of ten chapters. After the Executive Summary and an introduction to the report in Chapter 2, Chapter 3 presents the background to the assessment and provides a description of the proposed improvements to the Airport.

Chapter 4 establishes the policy background for the proposed improvements. It reviews national and local level policies in relation to infrastructure and aviation in order to identify the extent to which these support the planned development at the Airport.

Chapter 5 presents a review of key socio-economic indicators for Luton and the wider area.

Chapter 6 presents the employment generated by the Airport in 2011, and forecasts of how this will change under the two scenarios.

Chapters 7 and 8 present the economic value of the Airport to the local economy in 2011 and an assessment of how that will change under the two scenarios.

Chapter 9 includes a qualitative assessment of the proposals.

The report's conclusions are set out in Chapter 10.

Annexes include a table showing the sources of data used in the assessment (Annex A), relevant references to other documents (Annex B), a technical annex on the employment modelling (Annex C) and a glossary of terms (Annex D).

3 Background to the Assessment

3.1 Introduction

This chapter provides background to, and a brief overview of, LLAOL's proposals for improvements at the Airport.

The demand for air travel at UK airports is expected to grow strongly over the next twenty years. In August 2011 the Department for Transport (DfT) published air travel demand forecasts projecting that air passenger numbers at London's airports will grow from 125mppa in 2010 to 180mppa by 2030[4]. Within this growth the Airport is projected to grow under a constrained growth scenario from 9.5 mppa today to 12.4 mppa by 2018 and continue operating at this capacity thereafter.

An employment study was conducted by Halcrow and PACEC in 2004 on the employment and housing implications of an extended or replacement runway at the Airport. A model was produced for this by PACEC to assess the impact of increased Airport passenger traffic on employment. This model is now over 8 years old and the assumptions and data need to be updated. Consequently Halcrow was asked by LLAOL to prepare a new model to forecast future employment at the Airport using the most up to date and reliable data.

In addition to forecasting employment, the economic impact of the projected growth at the Airport needs to be assessed. Such assessments have previously been carried out by Halcrow to inform economic impact assessments in 2006, 2010 and May 2012 using an Excel-based economic assessment model. This model has been updated with the most up to date data including the new employment forecasts and relevant assumptions to ensure that the economic assessment is robust.

3.2 The LLAOL Master Plan Proposal

LLAOL has published proposals to expand the capacity of the Airport over the next nineteen years until 2031, which is the last year of contract to operate the Airport. It has estimated that the Airport will have reached 17.8 mppa by this point. The proposals for improvements that would facilitate this growth are set out in full within

[4] Department for Transport (2011): UK Aviation Forecasts 2011. London's airports include Heathrow, Gatwick, Stansted, Luton and London City airports. http://www.dft.gov.uk/publications/uk-aviation-forecasts-2011/

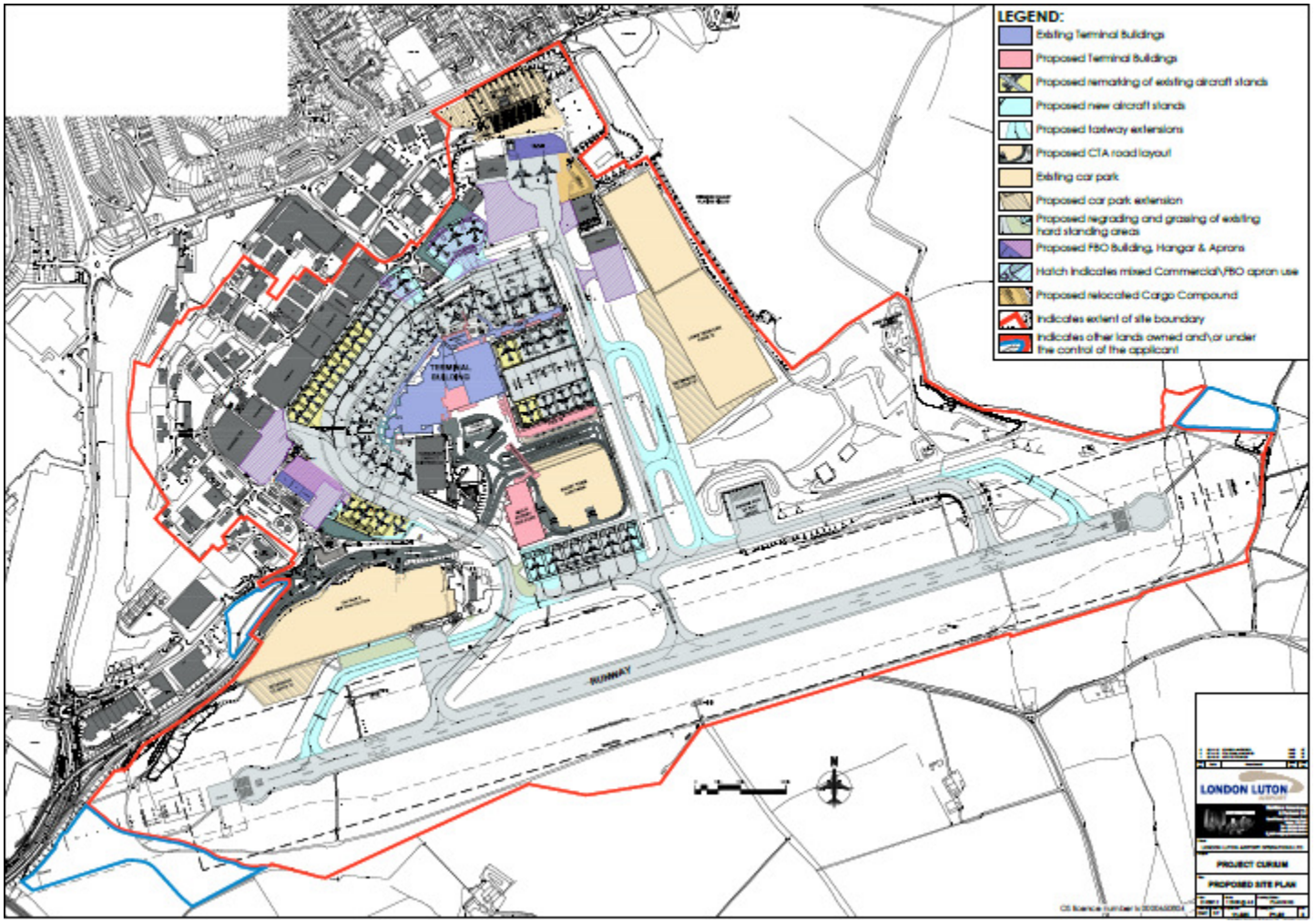
the Planning Supporting Statement. LLAOL's Masterplan document was published for public consultation in August 2012[5]. The Masterplan constitutes part of the pre-application planning engagement that was undertaken by LLAOL prior to the submission of its planning application in November 2012

The objective of the proposals is to enable an increase in passenger numbers by maximising the use of space within the existing boundary of the Airport. As set out in Chapter 2, LLAOL is proposing to do this through improvements to the Airport's access road, existing terminal building and the taxiway and aircraft stands. The percentage increase in passenger numbers due to these improvements is expected to be higher than the percentage increase in air traffic movements, reflecting the Airport's aim to make more efficient use of the runway taxiway and apron space by encouraging the use of bigger aircraft.

A map of the proposed improvements, with a red line showing the Airport boundary, is presented in Figure 3.1.

[5] London Luton Airport Operations Limited (September 2012): Revised Masterplan Document Consultation Prior to Submission of Planning Application London's Local Airport

Figure 3.1 Map of proposed developments at the London Luton Airport site



Source: LLAOL (Sept 2012) Revised Masterplan Consultation Document

3.2.1 Access road improvements and car parking

This involves dualling the section of Airport Way from the Holiday Inn Roundabout to the Central Terminal Area. The improvement will cater for the additional flows on the road network around the Airport which will occur as a result of the proposed development. Additional car parking is proposed within the Airport estate.

3.2.2 Terminal building improvements

The improvements to the Airport's terminal building will increase its capacity and enhance customer experience. The first significant improvement will be the construction of a two storey infill extension at the front of the building creating 5,300 square meters of additional space. The second significant development will be the construction of a new pier for aircraft boarding and disembarking providing 7,000 sq m of additional space.

3.2.3 Aircraft manoeuvring and parking improvements

The improvements to the aircraft manoeuvring and parking areas include creating new and extended parallel taxiways (which will require new operational processes), modifications to the existing aircraft parking apron areas and the provision of fifteen new stands. The South and West Aprons will be extended and additional strips of hardstanding will be provided.

4 Policy Review

4.1 Introduction

This chapter reviews relevant policy developments at national and local levels in order to provide the policy context for this employment and economic assessment of the proposed improvements to the Airport. The relevant policies and strategies that have been reviewed include:

- National policies - the Coalition Government's Programme for Government, the Plan for Growth; public expenditure plans; the National Infrastructure Plan; and policies for aviation and land use planning; and
- Local policies - the South East Midlands Local Enterprise Partnership Draft Business Plan, the Bedfordshire and Luton Joint Economic Development Strategy, the Luton Plan, the Luton Regeneration Strategy, and the Luton Local Transport Plan.

The proposals have been published in the midst of the deepest economic recession in recent times and at a time of significant change in policy formulation. Large areas of policy are being reviewed and revised by the government including: national aviation policy; the devolution of powers from the regions to the local level (as evidenced by the abolition of the Regional Development Agencies, the withdrawal of regional spatial and economic strategies and implementation of the Localism Act); and the introduction of a more streamlined National Planning Policy Framework (NPPF).

4.2 National Policy

Coalition's Programme for Government

When the Coalition Government came into power in 2010 it was faced with the worst financial and economic crisis in the UK's recent history. In response to this the government set out ambitions plans for recovery in 'Our Programme for Government'. In that document, the government identified the need to tackle the public sector deficit and ensure economic recovery as the most urgent issues facing Britain. It aimed to reduce the structural deficit over the course of this parliament through a mix of reduced public spending and tax increases. The Government immediately announced spending cuts of £6 billion to non-frontline services in 2010/11 in an emergency Budget and set up an Office of Budgetary Responsibility to produce independent economic forecasts. In addition it set out plans to reform the banking and regulatory system and support business growth through reduced regulation. Further spending cuts for later years (2011/12 to 2014/15) were announced in Spending Review 2010. Subsequent Budgets and Autumn Statements in 2011 and 2012 have confirmed the Government's commitment to its austerity programme. The Programme for Government also confirmed the cancellation of a third runway at Heathrow and ruled out new runways at Gatwick and Stansted.

The Coalition's Programme for Government is relevant for this employment and economic assessment in that it provides the highest level policy framework within which there is a need to encourage developments that support economic growth, such as the proposed improvements to the Airport.

The Plan for Growth

Early in 2011 HM Treasury and the Department for Business, Innovation and Skills set out a plan for bringing the economy back on a path of sustainable growth in the Plan for Growth. This document was published at the same time as the 2011 Budget and supports the aims set out in the Programme for Government document. The ambitions of the government are to create a better environment in the UK to encourage business and investment. In particular:

- to create the most competitive tax system in the G20;
- to make the UK one of the best places in Europe to start, finance and grow a business;
- to encourage investment and exports as a route to a more balanced economy; and
- to create a more educated workforce that is the most flexible in Europe.

The Plan for Growth recognises the need for improvements to the nation's infrastructure in order to facilitate growth in the economy. The government has identified £200 billion of public and private infrastructure funding over the next five years. The government also aims to radically change the planning system, with the goal of making it easier for developments to get through the planning process including the fast tracking of major infrastructure projects. The new NPPF, published in and implemented from March 2012, requires that planning applications should be considered with a presumption in favour of sustainable development.

The government also aims to encourage investment to help businesses and to do this the Plan proposes to establish Enterprise Zones and Local Enterprise Partnerships.

The 'Plan for Growth' is relevant to this impact assessment because it provides the economic growth context as to why infrastructure improvements, such as those at the Airport, are needed.

Draft Aviation Policy Framework

The Coalition Government's aviation policy has changed significantly since it came to power in 2010 from its initial position of making better use of existing airports and no expansion in the South East. Following an earlier consultation in 2011, the Government published a second consultation in July 2012 on a new sustainable aviation framework within which it would develop future aviation policies. This included its views on how to reduce the environmental impact of aviation and promote the role of regional airports. These consultations were issued in the context

of DfT's 2011 Aviation Forecasts which reflected the impact of the economic downturn on the demand for aviation and the impact of the Coalition's moratorium on runway expansion at Heathrow, Gatwick and Stansted. Compared to DfT's 2009 Aviation Forecasts, the new aviation forecasts projected lower levels of passenger growth, much of which would be spread around the UK at regional airports. In the central case, which reflected a constrained growth scenario, the number of UK air passengers is forecast to recover from 211 mppa in 2010 to 335 mppa in 2030 and 470 mppa by 2050. In this scenario the three largest London airports would be at capacity by 2030.[6]

However, in the 2011 Autumn Statement the Government recognised the importance to the economy of international connectivity and the need to address the constraint on hub airport capacity. As a result in September 2012 the Government asked Sir Howard Davies to chair an independent Airports Commission tasked with identifying and recommending to Government options for maintaining the UK's status as an international hub for aviation. That Commission will report in 2015.

National Infrastructure Plan

As set out in the 'Plan for Growth', infrastructure is viewed by the government as critical for supporting economic and social sustainability. The first National Infrastructure Plan (NIP) was launched in October 2010 alongside Spending Review 2010. Updates of the NIP were published alongside the Autumn Statements in November 2011 and December 2012.

The NIP includes proposals to develop a new strategy for coordinating public and private investment in infrastructure and to increase infrastructure spending through public and private sources.

In the 2011 NIP update the government expanded on its aims to increase infrastructure spending, estimating that over £250 billion is planned for infrastructure to 2015, two thirds of which will come from the private sector. This is £50 billion more than they stated in the Plan for Growth document. The estimate of infrastructure spending was further increased in £330 billion in the 2012 NIP update. The government aims to bring in new investors and explore new ways to finance projects. It also aims to give local authorities more flexibility to support projects. The NIP includes a consideration of the aviation sector.

[6] This level of growth for London's three main airports is much lower than that projected in DfT's 2009 Aviation Forecasts which projected a 70mppa capacity shortfall for London's airports by 2030.

In the 2011 NIP the government confirmed its support for private investment by confirming that it planned to sign a Memorandum of Understanding with two groups of UK pension funds, and was working with the Association of British Insurers to set up an insurer's infrastructure investment forum. These two initiatives will secure £20 billion from the private sector.

In what is widely seen as a reversal of policy, the 2011 NIP included a commitment that the UK should retain its aviation hub status and in his Budget 2012 speech the Chancellor announced that the government will set out its thinking on this issue in the summer. The Government has confirmed that it plans to announce its new aviation policy framework in March 2013.

The 2011 NIP also presented an overview of the performance of UK infrastructure. It shows that aviation is the one area where performance has decreased since 2005 in terms of capacity, access and availability, service quality and reliability. Heathrow is now operating at near full capacity and over 80% of London's airport runway capacity (including London Luton Airport) was utilised in 2010, although runway capacity utilisation in the rest of the country was 30%.

In terms of London Luton Airport, the 2011 NIP states that it was operating at 53% of its capacity in 2010. It also presumes that the Airport could handle 12 mppa by 2030 and 17 mppa in 2050 under a constrained growth scenario. LLAOL's proposed developments to the Airport would enable the Airport to reach DfT's projected level of constrained growth by 2028.

The 2011 NIP also looks at the role of the rail network and, of relevance to London Luton Airport, states that the government will continue to implement the Thameslink programme to tackle overcrowding. This will include improving connectivity to Gatwick and London Luton Airports.

The NIP is relevant for this impact assessment because it sets out the policy framework and programme for UK infrastructure improvements such as those proposed at the Airport.

National Planning Policy Framework (NPPF)

The NPPF, published in March 2012 by the Communities and Local Government Department, sets out new guidelines for planning in the UK. It envisions a planning system that supports growth and new development, rather than acting as a hindrance, and includes a presumption in favour of sustainable development. Sustainable development is viewed in the framework as having three core elements which are:

- Economic - contributing to building a strong, responsive and competitive economy;
- Social - supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and
- Environmental - contributing to protecting and enhancing our natural, built and historic environment.

Local Plans will be the main documents that will guide decision making on whether to grant permission for developments. Where a Plan is absent there will be a

presumption that applications should be granted unless any adverse impacts outweigh the benefits.

The environment is heavily referred to in the framework. The Greenbelt will continue to be protected and proposed developments should contribute to conserving and enhancing the natural environment and reducing pollution.

4.3 Local Policy

At the local level policy is currently being realigned with the national level changes. The 2010 Local Growth White Paper set out a new approach to stimulating local economic growth, shifting power away from central government to local communities, citizens and independent providers. The focus is on recognising that where drivers of growth are local, decisions should be made locally. The Government plans to:

- shift power to local communities and business, enabling places to tailor their approach to local circumstances;
- promote efficient and dynamic markets, in particular in the supply of land, and provide real and significant incentives for places that go for growth; and
- support investment in places and people to tackle the barriers to growth.

The approach to local growth includes the abolition of Regional Development Agencies, the establishment of the first phase of 24 local enterprise partnerships and an increase in the size of the Regional Growth Fund.

Luton Borough Council (LBC) is now part of the South East Midlands Local Enterprise Partnership which is designed to encourage business growth. LBC is also currently preparing a new Luton Plan which will replace previous strategies as the key planning document for the area.

South East Midlands Local Enterprise Partnership (LEP) Draft Business Plan (2012-2013)

Following the abolition of the South East England Development Agency, the South East Midlands LEP was set up in 2011 as a partnership between the public and private sectors in order to promote the South East Midlands as a location for business and investment. The LEP covers ten borough and district authorities across the South East including LBC. The LEP's vision for the South East Midlands is as a diverse and competitive knowledge economy with first class infrastructure and high growth built on local private sector strengths, exports and job creation.

The LEP has prepared a draft Business Plan (2012-2013) setting out its partnership approach to encourage private sector led development and create the right environment for businesses to develop. The plan aims to deliver growth effectively and speedily by attracting businesses to the area, removing any barriers and developing partnerships between the public and private sectors. It aims to increase the number of new jobs in the area by one percent more than the national average rate of employment growth. The LEP regards the Airport as one of its key transport links and a key source of direct and indirect jobs.

In the coming months the LEP will be drawing up a Local Infrastructure Plan which will identify and prioritise key infrastructure projects in the area that aim to lead to a growth in jobs, businesses and homes. It will also implement a programme and

project management approach to the investment of the £13.1 million from the Growing Places Fund that has been allocated by the government to the South East Midlands.

Bedfordshire and Luton Joint Economic Development Strategy (Bedfordshire and Luton Economic Development Partnership, 2008)

Prior to the establishment of the LEP, LBC teamed with the former Bedfordshire County Council to develop a joint economic strategy. The strategy identified the main objectives and priorities for the area which were innovation, investment, competitiveness, entrepreneurship, community regeneration, employment restructuring, learning and skills, green economy, and infrastructure.

The strategy recognised the Airport as an important part of the local economic context. Transport infrastructure is highlighted as an important business location factor and the Airport viewed not only as an important local air transport facility but also as a notable generator of direct and indirect employment and economic growth for Luton. The strategy included development at the airport as one of its actions, with the outcome of significantly improved transport gateways and hubs, and the aim of leading to more jobs.

Given the abolition of BCC, this report assumes that this strategy has now lapsed.

Luton Plan 2001-2011 (Luton Borough Council)

LBC is currently formulating a new Luton Plan for the period 2011-2031. A six week public consultation took place during June and August 2012. .

The previous Luton Local Plan (2001-2011) has now expired although policy relating to the Airport has been 'saved'. It is a key document for the Airport because the Airport is recognised as one of seven action areas in the Plan. The Plan regards the Airport as an area of change and opportunity in Luton and it set out the key priorities in guiding its future development. The Plan recognises the important contribution that a successful airport can make to the regeneration and economic viability of Luton and the creation of new employment opportunities in the area. The Local Plan states that the Council will grant planning permission for development at the Airport provided that it:

- is airport related;
- is aligned to the national and regional government aviation policies;
- does not have major environmental impacts (particularly in relation to aircraft noise levels); and
- incorporates sustainable transportation measures, with an emphasis on promoting modal shift towards public transport while providing sufficient car parking facilities, principally at the Airport.

Luton Regeneration Strategy (Luton Borough Council, 2011)

Luton Borough Council's Regeneration Strategy is a brief document which sets six strategic objectives for the Borough:

- businesses able to compete with the best;
- a modern and diversified economy;
- more jobs, in all areas, for all groups;
- a more capable and skilled workforce;

- an environment to regenerate; and
- infrastructure for the 21st Century.

The strategy does not refer directly to the Airport. However it sets out plans to encourage new start ups and business through a high quality inward investment service, targeted growth through key growth sectors and Luton's first high technology business village.

Luton Local Transport Plan (Luton Borough Council, 2011-2026)

The Local Transport Plan for Luton presents the long term strategy for Luton until 2026 and an implementation plan to 2015. The transport vision for 2026 is for an integrated, safe, accessible and more sustainable transport system which aids economic regeneration of Luton and the growth area of Luton-Dunstable-Houghton Regis.

Environmental issues are high on the agenda. The plan puts emphasis on reducing CO2 emissions and unnecessary car use. The plan also states LBC's plans to work with LLAOL and other organisations to reduce noise pollution.

The plan includes an aim to support Luton's growth as an international gateway in the context of growth at the Airport and ease of access to the new Channel Tunnel Rail Link Terminus at St Pancras. This assumption of growth at the Airport creates a positive context for LLAOL's development proposals. However the need to address environmental and pollution concern would need to be a key consideration.

4.4 Conclusion

At the national level the Coalition Government recognises that London's airports (of which Luton is regarded as one) are reaching capacity. The government issued a consultation on a new sustainable aviation framework in July 2012 focused on environmental impact and promoting the growth of regional airports. The government has also requested the establishment of an independent Airports Commission to identify and recommend options to the government for maintaining the UK's aviation hub status. The government is committed to increasing infrastructure spending as a driver of growth, is facilitating private sector investment in infrastructure and is making the planning system more supportive of new development in an attempt to boost the economy. Sustainability and the environment are key priorities which will need to be carefully considered in the development proposals. Aviation is pinpointed as a sector which could make contributions to significantly reducing carbon emissions.

At the local level the recent changes to local government, with the abolition of Regional Development Agencies, a focus on localism, and introduction of a new planning framework, have led to an overhaul of many policies and strategies which is still currently in progress. The Luton Plan has yet to be published, but existing plans recognise the importance of the Airport. For example the new Local Transport Plan aims to support Luton as an international gateway and assumes that there will be growth at the Airport. The environment is a high priority at the local level and would need to be a key consideration in development proposals at the Airport.

5 Socio-economic indicators

5.1 Introduction

This chapter presents the current economic and social indicators for Luton and the Airport's Core Impact Area.

The indicators are presented in five categories:

- Economic activity and unemployment;
- Industry and employment profile;
- Skills and qualifications; and
- Socio-economic classification and deprivation.

Core Impact Area

The core impact area is where the employment and economic value of the airport is likely to have the greatest impact upon. This has been defined as local authority districts that are within a 30 minute drive time radius and have at least 1% of direct airport employees residing in the area.

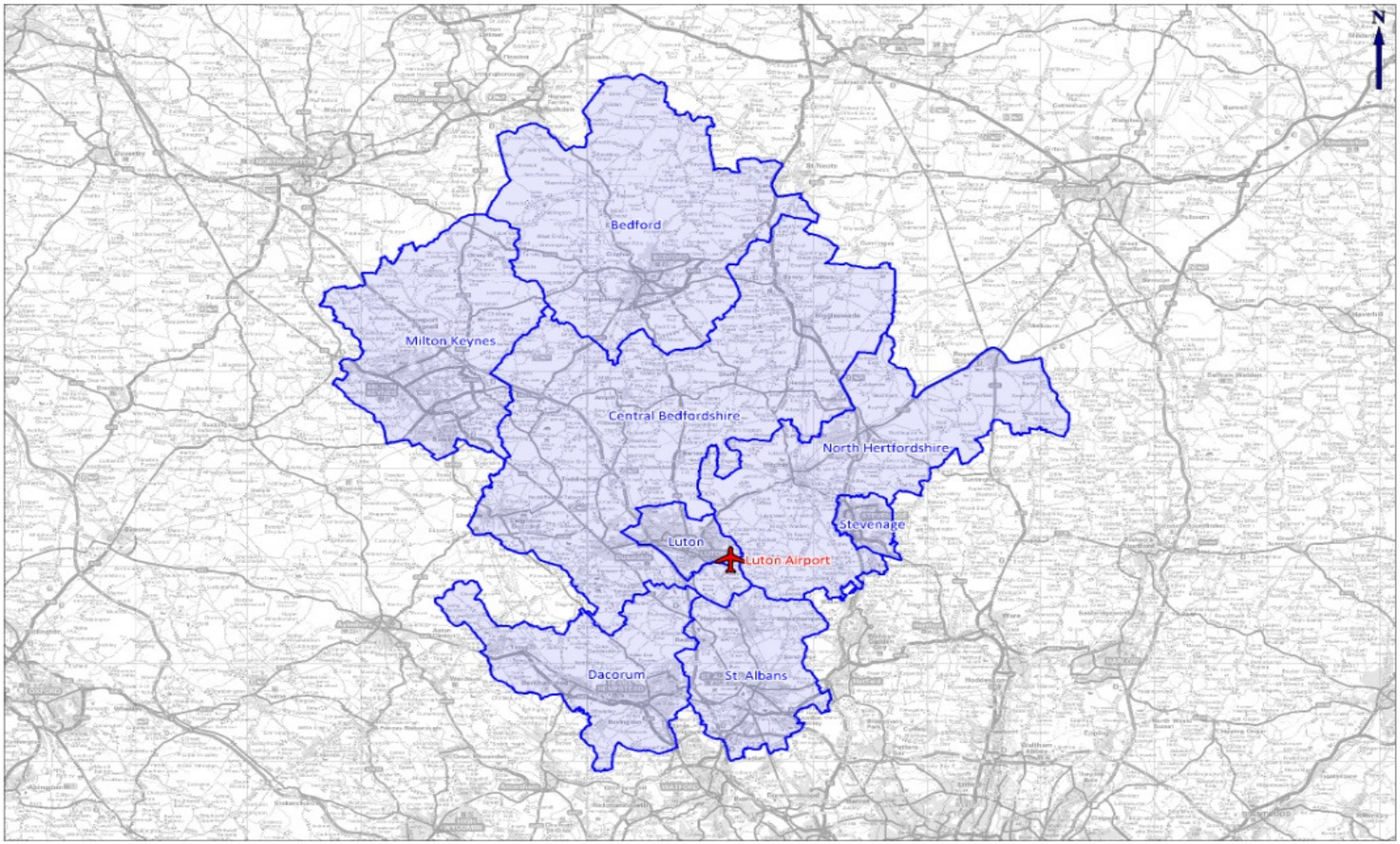
In order to identify which districts the employees reside in, up to date security pass data from LLAOL was analysed. The security pass data was incomplete but it was possible to identify approximately 2,400 full or partial postcodes from this data. These postcodes have been mapped in GIS to match them to district authorities.

The GIS analysis shows us that the district authorities with more than 1% of employees are very similar to the previous core impact area used for the 2004 Halcrow/PACEC model.

Approximately 78% of direct employees live within the core impact area and consequently the greatest impact of the Airport growth will be located within this area. The key districts (with over 1% of employees) are:

- Luton (42% of gross direct employees live in Luton)
- Central Bedfordshire (20%)
- North Hertfordshire (5%)
- St Albans (3%)
- Stevenage (2%)
- Milton Keynes (2%)
- Bedford (2%)
- Dacorum (2%)

Figure 5.1 – Map showing the Airport's Core Impact Area



Source: Ordnance Survey Open Data – Boundary-Line (2011)

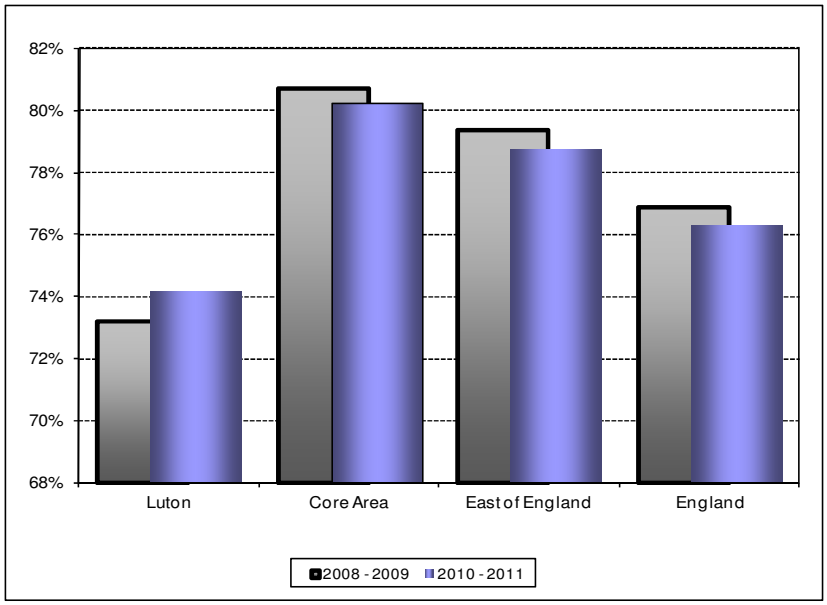
5.2 Economic Activity and Unemployment

5.2.1 Economic Activity

Economic activity is an officially defined term that refers to the proportion of the working age population that are either in employment or are registered as unemployed[7]. Data on economic activity rates has been taken from the 2011 Annual Population Survey (APS) obtained from the Government's NOMIS labour market statistics service[8].

Luton, which makes up one of the eight local authorities in the Core Impact Area, is an island of relative deprivation within the Area. Luton has lower levels of economic activity than other areas in the Core Impact Area. In the year between April 2010 and March 2011 the economic activity rate of Luton was 74% in comparison to 80% in the Core Impact Area. Luton also has lower economic activity levels than in the East of England (78.5%) and slightly lower levels than England (76%) as a whole.

Figure 5.2 – Economic activity rates, 2008-2011



[7] National Statistics (2007) Definitions used for the 2007 Census Test in England and Wales

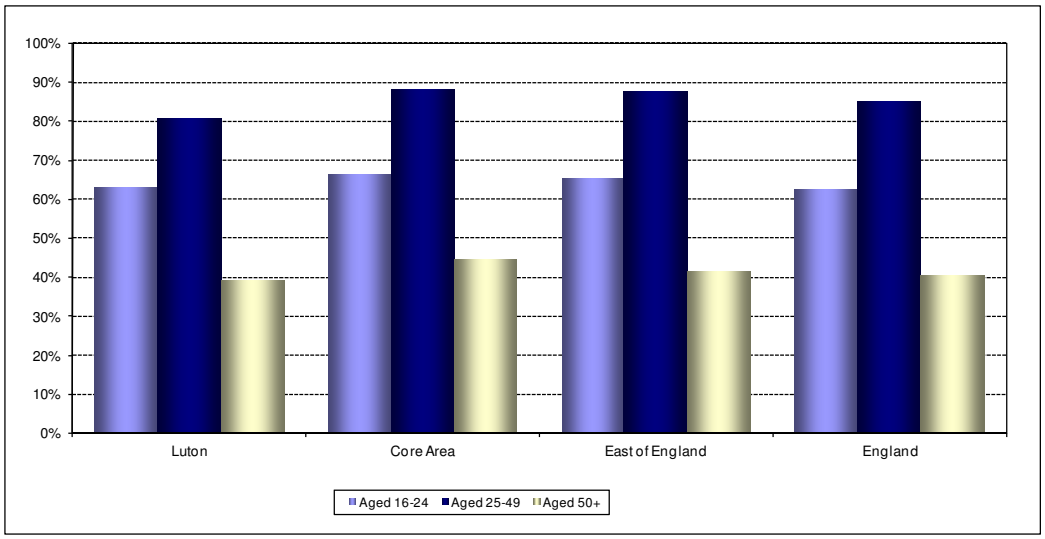
[8] Office for National Statistics NOMIS web sitehttp://www.nomisweb.co.uk/articles/644.aspx

Source: Annual Population Survey, 2011 NOMIS

The APS data shows that over the period 2008/09 to 2010/11 the economic activity rate has declined in the Core Impact Area by about 1%, although this is the same level of decline as that in England. However, as Figure 5.2 shows, Luton has bucked this trend and increased its economic activity by almost 1% over that period.

Further disaggregation of the overall economic activity rates in Figure 5.3 shows that although the economic activity rate of people aged 25-49 in Luton is lower than in England, the rate for people aged 17-24 is the same as for England. Given that overall economic activity rates in Luton are lower than average, and the financial crisis in general has hit young people hardest, young people in Luton are doing comparatively well.

Figure 5.3 – Economic activity rates by age group, 2011



Source: Annual Population Survey, 2011 NOMIS

5.2.2 Unemployment

The unemployment rate for all working aged people in Luton was 8% in 2010/11; this was the same as the English average in 2010/11. In comparison unemployment in the Airport's Core Impact Area was lower at 6%. Consistent with our earlier finding about economic activity levels in Luton; the youth unemployment rate in Luton fell by 3% from 17% in 2008/09 to 14% in 2010/11. In comparison, youth unemployment in the Core Impact Area rose from 15% in 2008/09 to 20% in 2010/11. However Luton has higher levels of unemployment in older age groups. Overall the rate of unemployment in Luton for all working age people has decreased since 2008/09 from 11% to 8% which goes against the trend regionally and nationally where unemployment has increased from 6% to 8% (table 5.1).

Table 5.1 – Unemployment rates by age group, 2009 and 2011

	Luton	LLA Core Impact Area	East of England	England
	2009	2011	2009	2011
All people of working age	11%	8%	5%	6%
Aged 16-24	17%	14%	15%	20%*
Aged 25-49	10%	7%	5%	5%*
Aged 50-retirement	7%	6%	5%	4%*

(*Figure is estimate as data for every local authority is not available)

Source: Annual Population Survey, 2011 NOMIS

The rate of unemployment of UK born ethnic minorities is lower in Luton than it is in England as whole (see Table 5.2). The unemployment rate of UK born ethnic minorities has decreased slightly by 1% from 2008/09 to 2009/10 in comparison to England where unemployment amongst ethnic minorities has increased by 1% during this time period. This implies that UK born ethic minorities in Luton have been able to withstand the recession better than the national average.

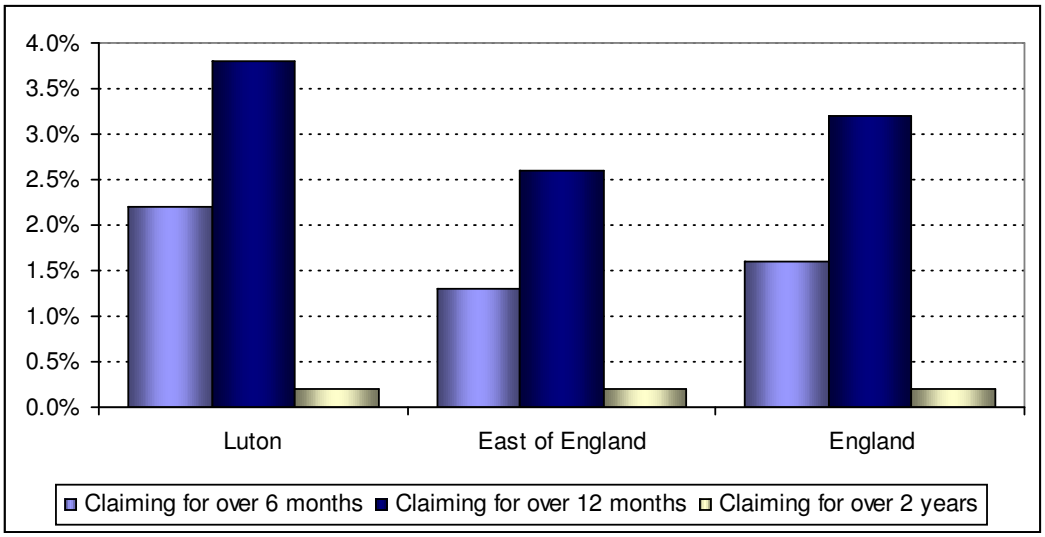
Table 5.2 – Unemployment Rates by Ethnic Group, April 2009 – March 2010

	Luton		East of England		England	
	2009	2010	2009	2010	2009	2010
16+ White, UK born	11%	8%	5%	6%	6%	7%
16+ White, non-UK born	9%		4%	6%	5%	7%
16+ Ethnic minority, UK born	11%	10%	13%	13%	14%	15%
16+ Ethnic minority, non-UK born	11%	12%	6%	11%	10%	12%

Source: Annual Population Survey 2010 NOMIS

The issue of unemployment can also be assessed by looking at benefit claimant rates. The rate of claimants in Luton in January 2012 was 6.7%. This was higher than that for the other local authorities in the Core Impact Area which had claimant rates of between 2.5% and 5.2%. It was also higher than the English average of 5.1%. Figure 5.4 shows that the proportion of people claiming for over 6 months and more than one year in Luton is higher than the average for England.

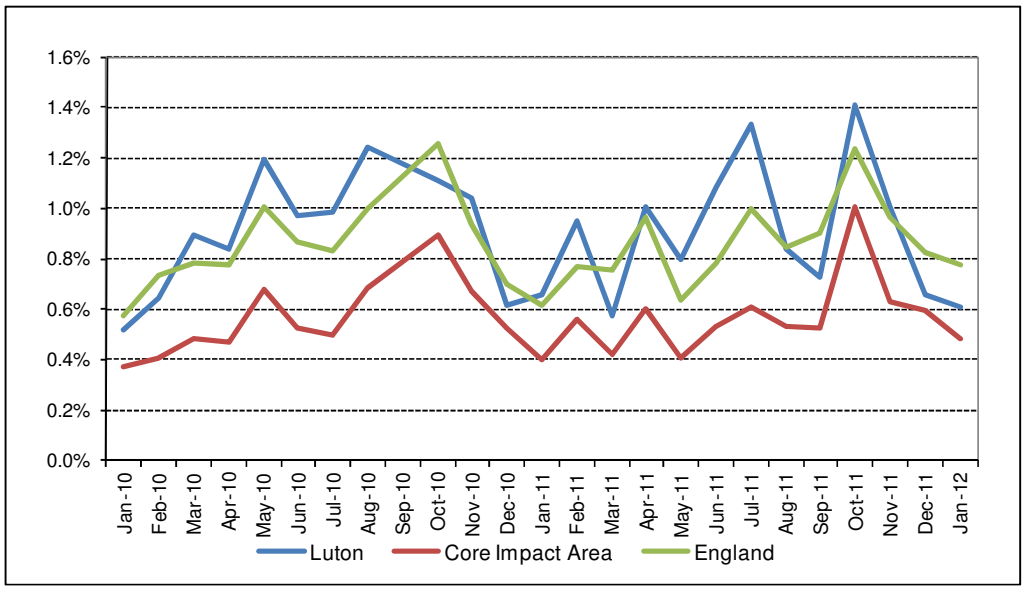
Figure 5.4 – Rates and Durations of Claimant Count, January 2012



Source: NOMIS

The number of job vacancies advertised by Job Centre Plus in Luton and the Core Impact Area have increased slowly since 2009. There has been a 20% increase in actual vacancies advertised in Luton from January 2010 to January 2012, although Figure 5.5 shows that there has been a large variation in advertised vacancy rates over this period.

Figure 5.5 –Luton and Core Impact Area Monthly Job Centre Plus Vacancies,(presented as a proportion of the working age population) Jan 2010 – Jan 2012



Source: Job Centre Plus Vacancies 2012, NOMIS

In summary this set of indicators has shown that Luton has a lower economic activity rate that the Core Impact Area and England as a whole. However, interestingly, the unemployment rate in Luton has been declining over time, where as in the Core

Impact Area and England as a whole it has increased due to the effects of the recession.

5.3 Industry and Employment Profile

This section looks at the types of industries, employment composition, occupations and the qualifications of employees in Luton and the Core Impact Area.

5.3.1 Industrial composition

The industries that make up the economy in Luton and the Core Impact Area[9] have been changing over recent years. Data on the number of business units from the Annual Business Survey 2008 and Neighbourhood Statistics 2011 shows that there has continued to be a decline in manufacturing industry in Luton. Table 5.3 shows that from 2007 to 2011 there was a 14% decrease in the number of manufacturing units. There has also been a dramatic decline in public administration and defence with a 56% reduction in Luton and a 24% reduction in the Core Impact Area. Luton has suffered from heavy public sector cut backs. However, more encouragingly, Luton has seen a 19% increase in the number of units in the professional, scientific and technical sector and a 35% increase in the health sector. Transport and storage units in Luton have increased by 6%. The Core Impact Area as a whole has not seen such large increases, with the exception of a 19% increase in health units, a 14% increase in finance and insurance and a 13% increase in units the professional, scientific and technical sector.

[9] The industrial analysis is based on the following authorities for the core impact area due to availability of time series data: Luton, Central Bedfordshire, North Hertfordshire, St Albans, Stevenage, and Dacorum.

Table 5.3 – Business Units in Luton and the Core Impact Area

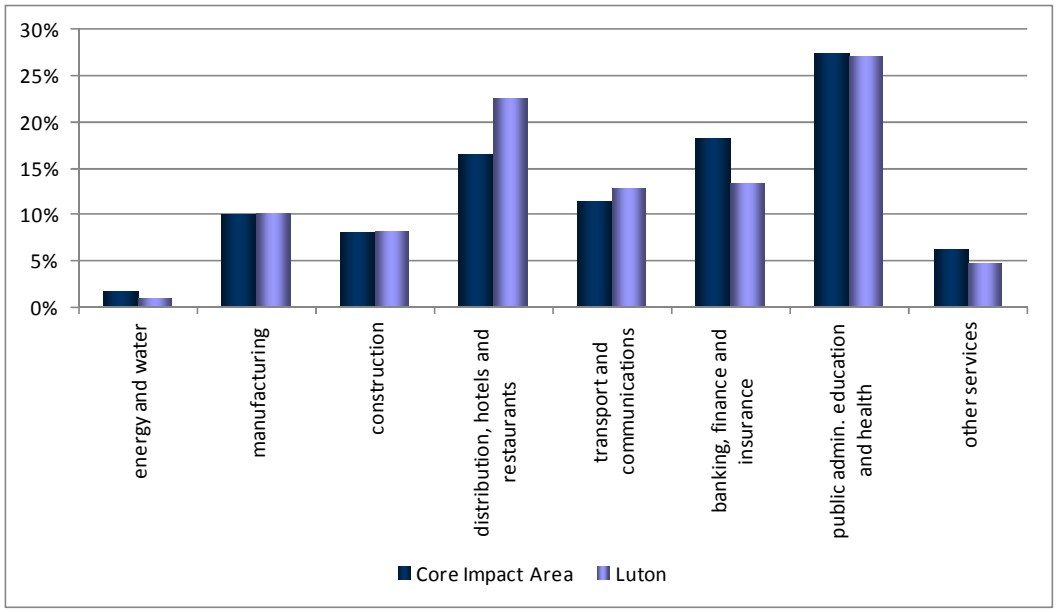
Industry	Luton			Core Impact Area		
	2007	2011	% change	2007	2011	% change
Manufacturing	402	345	-14%	2,499	2,340	-6%
Construction	750	720	-4%	5,250	5,190	-1%
Motor trades	191	205	7%	1,256	1,230	-2%
Wholesale	345	315	-9%	2,185	2,095	-4%
Retail	732	720	-2%	3,966	3,840	-3%
Transport & storage	232	245	6%	1,405	1,340	-5%
Accommodation & food services	363	355	-2%	2,164	2,245	4%
Information & communication	339	365	8%	3,658	3,765	3%
Finance & insurance	125	110	-12%	841	955	14%
Property	163	170	4%	1,235	1,265	2%
Professional, scientific & technical	491	585	19%	6,019	6,830	13%
Business administration & support services	633	490	-23%	3,916	3,255	-17%
Public administration and defence	114	50	-56%	304	230	-24%
Education	153	150	-2%	1,119	1,075	-4%
Health	292	395	35%	1,641	1,950	19%
Arts, entertainment, recreation & other services	399	325	-19%	2,949	2,765	-6%
Total	**5,750**	**5,545**	**-4%**	**40,433**	**40,370**	**0%**

Source: Annual Business Survey 2008 and Neighbourhood Statistics 2011

5.3.2 Employment by industry

An analysis of employment in Luton shows that the largest sectors are public administration, education and health, followed by distribution, hotels and restaurants. Figure 5.6 below shows that, in comparison to the Core Impact Area, there is a greater proportion of people working in transport and communications, and distribution and hotels, and fewer people working in banking, finance and insurance.

Figure 5.6: Employment break down by sector in Luton and Core Impact Area, April 2010- March 2011



Source: Annual Population Survey 2011 NOMIS

There is a noticeable difference in Luton in the composition of sectors by ethnicity. Table 5.4 shows that white people are more likely to work in construction or manufacturing, whereas people that are from non-white groups are more likely to work in hotels, transport and communications and banking sectors.

Table 5.4: Employment by ethnic group in Luton, April 2009- March 2010

	% 16+ whites in employment	% 16+ non-whites in employment
Agriculture and fishing	-*	-*
Energy and water	1%	-*
Manufacturing	14%	8%
Construction	11%	5%
Distribution hotels and restaurants	16%	21%
Transport and communication	13%	18%
Banking, finance and insurance	15%	20%
Public administration, education and health	25%	27%
Other services	5%	1%
Total	100%	100%

*Estimates not available

Source: Annual Population Survey 2011 NOMIS

5.3.3 Occupational structure

Occupation data from the Annual Population Survey (Table 5.5) shows that the largest group in Luton in 2011 was people working in elementary occupations which accounts for 16% of all people in employment. This was higher than the English average of 11% for this group. The largest occupational group in England as a whole is professional occupations at 19% compared to 14% in Luton. The Core Impact Area in contrast had a higher proportion working in professional occupations than the average in England at 21%.

Table 5.5: Occupations of People in Employment: April 2010 – March 2011

	Luton	LLA Core Impact Area	East of England	England
Managers, directors and senior officials	7%	12%	11%	10%
Professional occupations	14%	21%	20%	19%
Associate prof & tech occupations	11%	14%	14%	14%
Administrative and secretarial occupations	12%	13%	12%	11%
Skilled trades occupations	13%	10%	11%	11%
Caring, leisure and other service occupations	11%	8%	9%	9%
Sales and customer service occupations	8%	7%	7%	8%
Process, plant and machine operatives	9%	5%	6%	6%
Elementary occupations	16%	10%	10%	11%

Source: Annual Population Survey, NOMIS

In summary this section shows us that the largest industries in Luton are public administration, education and health and distribution and hotels. Jobs in Luton tend to require lower skills than the Core Impact Area and England as a whole. However, there is a growing number of business units in higher skilled industries in, for example, the professional, scientific and technical sectors. This is particularly important in relation to the economic impact assessment. The projected growth of the Airport would benefit Luton by supporting the growth of higher skilled industries,

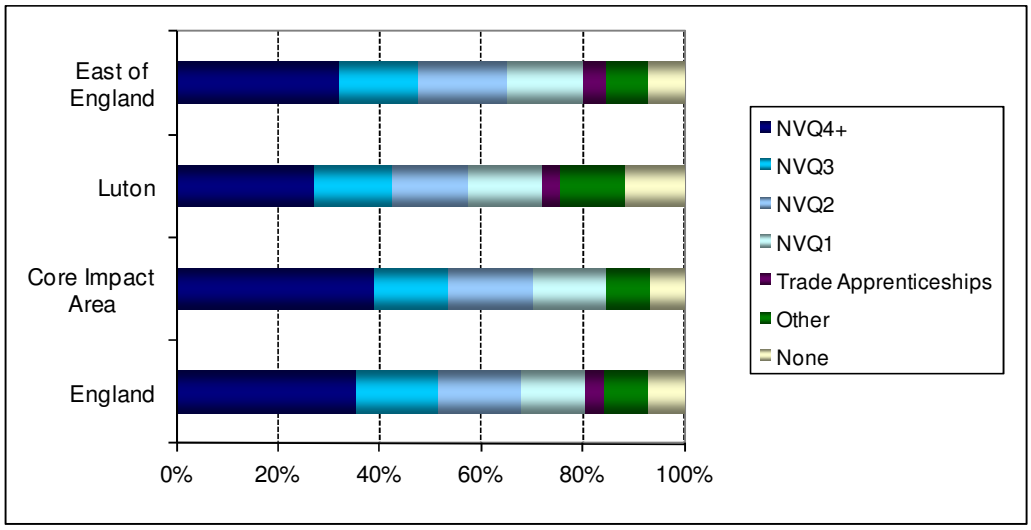
both through direct job creation and by creating a more enabling environment for investment.

5.4 Skills and Qualifications

The qualifications of the economically active population in Luton are, on average, lower than the Core Impact Area and in England. Almost double the proportion of working age people in Luton do not have any qualifications compared to England. APS data shows that 12% of people did not have any qualifications in Luton, compared to just 7% across England in 2010. Likewise just 27% of people in Luton were educated to NVQ Level 4 or above, compared to 36% across England in 2010.

Figure 5.7 shows the level of qualifications of the economically active population in the Core Impact Area are higher than those in Luton. In 2010 38% of the working age population in the Core Impact Area was educated to Level 4 NVQ or above. This is 11% higher than in Luton and 2% higher than the rate for England. Just 6% of the working age population in the Core Impact Area had no qualifications. This was half the rate in Luton and 1% lower than the rate for England. The qualifications for the Core Impact Area had improved since 2008/09 when 10% of the working age population had no qualifications and 29% had Level 4 NVQ or higher.

Figure 5.7 – Qualification Levels of Working Age Population, January 2010 – December 2010



Source: Annual Population Survey, NOMIS

The education and qualifications of young people in Luton appear to becoming more on a par with those in England as a whole. 2010 APS data shows us that 47.3% of people aged 16-19 in Luton had 5 or more GCSEs at grades A to C compared to 46.5% in England as a whole. In the Core Impact Area 49% of people aged 16-19 have 5 or more GCSEs at grades A to C.

In summary this section has shown the skills and qualifications of the working age population in Luton are lower than average and they match the low skills level required for the industry types in the city. In comparison, qualification levels in the Core Impact Area are higher than average. However the education and qualifications of young people in Luton are improving.

5.5 Socio Economic Classifications and Deprivation

This section presents income and deprivation levels in Luton and the Core Impact Area.

5.5.1 Weekly earnings

The average gross weekly earnings, both for residence based and workplace based workers, are lower in Luton than in the Core Impact Area and England as a whole. The average residence based earnings are also lower in Luton than workplace earnings showing that many of the better paid jobs in Luton are taken by people living outside the area. This finding, complemented by the lower than average skills and qualifications levels in Luton, shows that there is a skills and qualifications gap in the area that prevents residents from taking advantage of the best job opportunities. In comparison, in the Core Impact Area, residents are taking home higher wages than those that commute into the area to work.

Over time, wages in Luton have not been increasing in line with England. The average resident based gross weekly wage in Luton increased by £14 from 2009 to 2011, whereas the average wage in England increased by £19 in this time. Workplaces wages in Luton have actually gone down since 2009 from £597 to £574 in 2011.

Table 5.6: 2011 Average gross weekly earnings

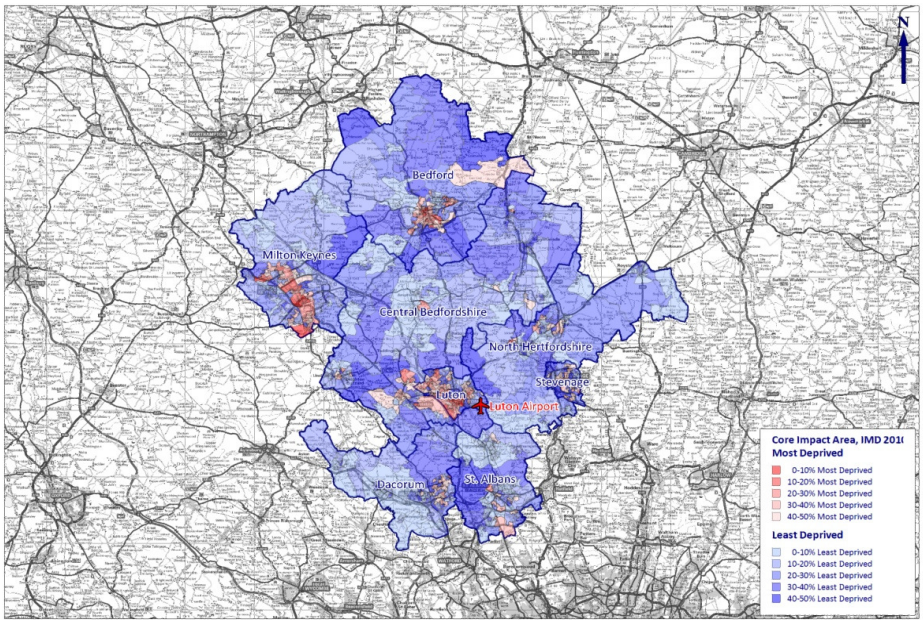
	Residence based gross weekly earnings		Workplace based gross weekly earnings	
	2009	2011	2009	2011
Luton	£522	£536	£597	£574
LLA Core Impact Area	£651	£665	£595	£608
East of England	£617	£637	£568	£580
England	£598	£617	£597	£616

Source: Resident based earnings and Workplace based earnings, NOMIS2011

5.5.2 Deprivation levels

The Indices of Multiple Deprivation (IMD) from 2010 show that Luton is amongst the most deprived local authorities in the country. In comparison, the local authorities in the Core Impact Area on average are amongst the least deprived. The IMD are indicators of social disadvantage and include data on income, employment, health and disability, education, skills and training, barriers to housing and services, crime, and living environment. On a ranking of 1 to 326, where 1 is the most deprived and 326 is the least deprived, Luton is ranked at 60th and nearby St Albans is ranked at 316th position. Deprivation is unevenly spread across the Core Impact Area with Luton containing most of the deprivation (see Figure 5.8). Stevenage is ranked 158th, Bedford is ranked at 169, Milton Keynes is ranked at 211, Dacorum is ranked at position 266, and North Hertfordshire is at rank 282.

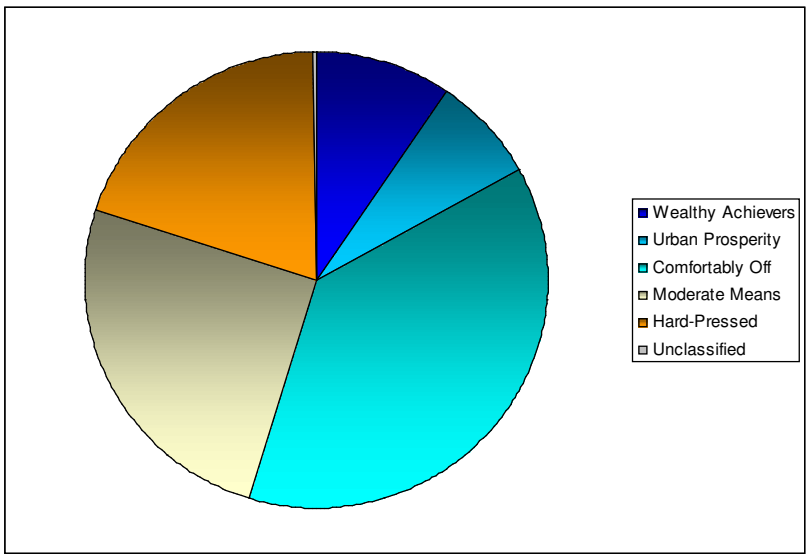
Figure 5.8: 2010 Indices of Multiple Deprivation in Core Impact Area



Source: Ordnance Survey Open Data –Boundary-Line (2011); Communities and Local Government (2010) English Indices of Deprivation

The Acorn demographic classifications for Luton confirm the relative deprivation in the area in comparison to the UK average. However an analysis of the results shows that the differences between Luton and the national average lie within the wealthier quartiles. The proportion of Luton's population that is categorised as 'wealthy achievers' is lower at 9% than the national average of 24%. Although there are a smaller proportion of people in Luton that are in the uppermost wealthy quartile, the proportion that is in the poorest quartile (20%) is actually similar to the national average at 21%.

Figure 5.9: Acorn Classifications – Luton Population Profile 2012



Source: CACI Acorn Population Profile Report 2012

Table 5.7: Acorn Classifications break down in Luton and the UK in 2012

Acorn Category	Group Profile	Population	Pop. in Luton	UK Pop.
Wealthy Achievers	Wealthy Executives, Affluent Greys, Flourishing Families	19,170	9.40%	24.40%
Urban Prosperity	Prosperous Professionals, Educated Urbanites, Aspiring Singles	14,989	7.40%	12.40%
Comfortably Off	Starting Out, Secure Families, Settled Suburbia, Prudent Pensioners	76,906	37.90%	27.20%
Moderate Means	Asian Communities, Post-Industrial Families, Blue-Collar Roots	51,541	25.40%	13.80%
Hard Pressed	Struggling Families, Burdened Singles, High-Rise Hardship, Inner City Adversity	39,723	19.60%	20.70%
Unclassified		589	0.30%	1.50%
Total Population		**202,329**	**100%**	**100%**

Source: CACI Acorn Population Profile Report 2012

In summary this section has shown that Luton is relatively deprived in comparison to the national average. Wages are lower and Luton ranks low in the IMD. However an analysis of the Acorn demographic classifications shows that, although Luton does not have as many wealthy people as the UK on average, the majority of people in Luton are on moderate means or comfortably off. The proportion of people that are in the poorest quartile is the same as the national average.

5.6 Summary

This chapter shows that Luton's economic activity rate is lower than the wider Core Impact Area. The manufacturing sector is continuing to decline but the IT, finance and property sectors are growing. The local population have, on average, fewer qualifications than England as a whole and people outside of Luton are taking more professional, higher paying jobs in the area.

6 Employment Assessment

6.1 Introduction

This chapter presents the current employment generated by London Luton Airport, and the forecast employment for growth scenarios. The first is the base case scenario where it has been assumed by LLAOL that the Airport will grow to 12.4 mppa by 2018 and remain at 12. 4 mppa until 2028 with no planned future developments. The second is the scenario where the planned developments go ahead and the Airport reaches a projected 17.8 mppa by 2028. The employment estimates are presented for both gross direct employment and indirect and induced employment as a result of the operations of the Airport.

The chapter also describes the methodology used to generate the forecasts in a non technical way. A more technical description of the methodology is presented in Annex C.

The chapter is structured into the following sections:

- background to the forecasts;
- methodology for forecasting gross direct employment;
- data collection and model variables;
- the approach to the employment modelling;
- scenarios and results for gross direct employment;
- indirect and induced employment; and
- labour supply analysis

6.2 Background

There have previously been attempts to project future employment at London Luton Airport for a range of development scenarios. PACEC and Halcrow produced an employment model in 2004 for the East of England Regional Assembly and the East of England Development Agency. This model forecasted employment at the Airport and the related housing and labour supply that would be required for a range of growth scenarios including an extended or replacement runway at the Airport. The results of the model were used to inform economic impact assessments produced in 2006, 2010 and 2012 by Halcrow. The Halcrow/PACEC model is now over 8 years old and the assumptions and data need to be updated. Consequently Halcrow was asked by LLAOL to prepare a new model to forecast future employment at the Airport using the most up to date and reliable data, and revised assumptions.

6.3 Methodology for forecasting gross direct employment

Sections 6.4, 6.5 and 6.6 present the methodology that has been used to produce the new employment forecasts. In summary, an econometric modelling approach was used which involved several key stages. Before undertaking the development of the employment model, a thorough data collection and review exercise was carried out. The first stage of the employment modelling was to identify the key factors (i.e. the explanatory variables) that determine the growth of employment (i.e. the dependent variable), at Airports that are a similar type and size to London Luton. This involved analysing time series across seven UK based airports[10], a process called panel data regression analysis. This analysis was used to develop an econometric function that represents the key factors that are statistically significant in influencing direct employment at these airports.

The second stage was to use the function in a forecasting model to project gross direct employment at London Luton Airport in 2028 for the base case (12.4 mppa) and development (17.8 mppa) scenarios. Once the direct forecasts were prepared, estimates for indirect and induced employment we made, based on HM Treasury Green Book guidance, Department for Business Innovation and Skills (BIS) supporting research, and English Partnerships guidance on Additionality.

6.4 Data collection and model variables

A data gathering and review process to obtain the most robust model inputs was undertaken for both the employment data (dependent variable), and the explanatory factors.

6.4.1 Dependent variable: Employment

This sub section reviews the data sources for employment and their robustness. These are:

- LLAOL's Annual Monitoring Reports[11];
- the Interdepartmental Business Register;
- LLAOL Airport Security Pass Data; and

[10] The seven airports in the panel data regression analysis were London Luton, Stansted, Liverpool, Manchester, Bristol, Birmingham and Newcastle.

[11] The employment estimates in the Annual Monitoring Reports are prepared for LLAOL by Luton Borough Council (LBC)

- NOMIS Business Register and Employment Survey /Annual Business Enquiry.

The Annual Monitoring Reports present estimates for current direct onsite and offsite (combined) employment generated by the Airport. This data has been used to prepare previous employment forecasts and economic impact assessments. However the robustness of this data as a historical dataset is limited as the methodology for collecting the data has varied across the years. Prior to 2010 a primary employment survey was undertaken, and this was supplemented by data from the Interdepartmental Business Register (IDBR). Since 2010 the employment data has been taken solely from the IDBR. This change in methodology means that the data can not be used as robust historical time series because it is not possible to accurately compare one year's data to another. Further, such data is not available consistently across the other airports that have been included in the regression analysis.

The IDBR is a nationwide data set covering 99% of economic activity in the UK. The data is based on three sources, traders registered for VAT, incorporated businesses registered at Companies House and other employers operating a Pay As You Earn (PAYE) scheme. This is the most reliable and detailed data set for estimating employment. It has been used for the last two years of the AMRs but this is not sufficient for use as a time series dataset in a regression analysis. The dataset is not publically available and consequently Halcrow does not have access to use the data from previous years.

An alternative dataset of direct employment is the data collected by LLAOL from Airport security passes for employees that enter restricted areas of the Airport. However not all employees who work at the Airport have a pass and the data that is collected is incomplete and skewed towards certain employment types. Therefore it does not represent a robust data set.

A further alternative data source is the Nomis Business Register & Employment Survey (BRES). This is a national, publically available data set which is based on a sample survey of businesses. The BRES was previously called the Annual Business Inquiry (ABI). The advantages of the data set are that it is a consistent source of employment data across the country and can be used to source employment estimates for all the airports included in the regression analysis. Using both the BRES and ABI, it is also possible to extract robust historical time series data. A consistent data set can be achieved for the years 2003 to 2011 which is a longer time period than any other data source that we were able to access. Historical data back to 2003 provides sufficient data points for robust econometric analysis across the airports. The data is based on Standard Industrial Classifications (SICs) which enables detailed breakdown of the types of employment at the Airport. It is used by the Office for National Statistics to inform the IDBR. Consequently the BRES/ABI has been used as the main data source for the employment modelling in this report.

6.4.2 Direct onsite and offsite employment

Direct employment is the employment that is generated by the activities at the Airport. This can be categorised as direct onsite and direct offsite. The direct employment was estimated for both Luton and the other airports that were included in the regression analysis. The estimate of direct employment was based on the most detailed geographical level for which the BRES/ABI is available, which is, the Lower

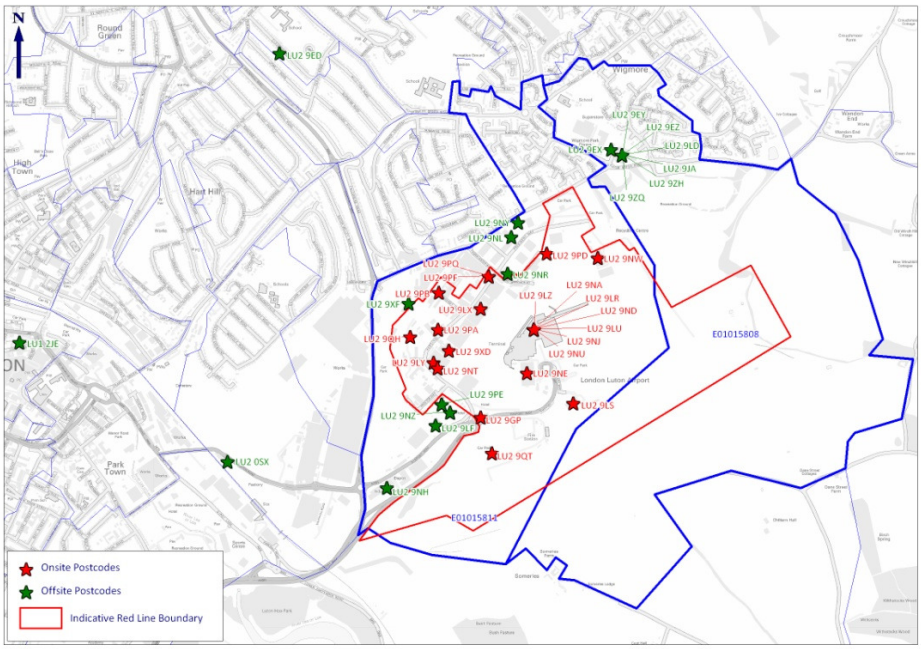
Super Output Area (LSOA) and on key employment types that are linked to airport activity. LSOAs are statistically and spatially defined areas with approximately 1,500 residents. Measures of proximity and social homogeneity are factored into the size of the LSOAs. In order to carry out a consistent approach for the regression analysis across the airports the assessment was based on the LSOAs that cover the airport sites capturing direct onsite and some offsite employment. Using ESRI Geographical Information Systems (GIS) software the LSOAs which covered the physical site of the airports were identified. In the majority of cases one LSOA covers the whole airport site. The airport site at London Luton fits almost completely within one LSOA, and all of its specific air transport employment was assigned to this LSOA. In the case of Liverpool and Newcastle the airport sites stretch across two LSOAs, and Stansted, the largest airport that was assessed, covered 3 LSOAs.

The spatial area for direct onsite and offsite employment at London Luton Airport was further refined to inform the forecasting model as follows:

Direct onsite: The direct onsite area for London Luton Airport has been defined by LLAOL as the Airport site and is identified by a red line boundary (see figure 6.1). All employment within this area is regarded as direct onsite. The red line boundary fits within one LSOA with the exception of a small part of the runway.

Direct offsite: The direct offsite area has been defined using the postcode locations of known offsite businesses and using the LSOAs within which these postcodes fall. This postcode information was obtained from two sources: a list of direct businesses from LLAOL/TOR, and additional offsite roads which are identified in the LLAOL Annual Monitoring Reports. The postcodes of these businesses and roads were mapped using ESRI GIS. This analysis showed that the direct offsite employment at London Luton Airport fits within two LSOAs. These are presented in figure 1. There are three outlier postcodes outside the two LSOAs. These have been excluded from the analysis in order to not over estimate employment.

Figure 6.1 Map to show the location of direct onsite and offsite employment at London Luton Airport



Source: Halcrow (2012); ESRI GIS (2012)

6.4.3 Employment types

The employment that is located within the LSOAs covering the onsite and offsite area can be refined to focus on employment types that are specifically airport related. The SIC codes which are used in the BRES to define employment types are categorised at several levels from 18 broad groupings down to detailed levels of employment with 615 groupings in the four digit class. The two digit division, which consist of 88 different industry groupings, has been used to inform the employment modelling. Where necessary, more detailed, four digit class, have also been identified.

There are two key SIC codes that relate specifically to airport employment. These are "air transport" and "service activities incidental to air transportation". In addition to these key employment types, a variety of other employment exists at the Airport. In order to identify the employment demand associated with the Airport development we used SIC groupings identified in Experian business data and refined these using Nomis BRES data. The Experian data on businesses and employment is available by postcode and business. Consequently it was possible to refine the analysis down to the postcodes that had been identified as having onsite and offsite employment.

The Experian data uses the 2003 SIC codes to categorise each business. The amount of employment in each SIC in the Experian data was compared to the BRES data. Both datasets were required for this process because the employment data in Experian is not as reliable as the BRES data. The Experian employment figures are an approximation based upon the company's total employment. The names of the businesses, the SIC that have been attributed to them, the site employment of the business according to Experian and the employment for that specific SIC code in Luton's two LSOAs from the BRES were all factored in to identify the relevant types of employment at the Airport. Where there were very few employees identified for a

particular SIC in the Experian business data compared to the BRES employment data, common sense judgement was used to assess whether or not to include this data.

We identified a range of employment estimates at the Airport based on the SIC codes, ranging from a low to a high estimate. The three estimates are:

- **Low estimate:** low estimate of employment based on conservative list of SICs and small geographical area for direct employment (one LSOA).
- **Mid estimate:** low estimate as above plus additional employment from the second LSOA. This is the most realistic estimate of employment as it reflects a larger geographical area that direct employment is located within. An uplift of 1.32, based on Nomis BRES data, was applied to the first LSOA to represent the proportion of employment that is located in the second LSOA.
- **High estimate:** optimistic assumption of employment based on a larger SIC code list, and using uplift of 1.46 to represent the larger amount of direct employment in the second LSOA.

Table 6.1 presents the 2007 SIC codes included in the low, mid and high estimates of employment.

Table 6.1 Range of Low and High list of employment SIC groupings used to inform modelling

SIC groupings	Low and mid estimate	High estimate
Agriculture, Fishing and Mining	-	-
Extraction, Mining, Quarrying	-	-
Manufacturing	25, 26, 28, 30, 33 + 4 level codes	10, 23, 25, 26, 28, 30, 33 + 4 level codes
Electricity, Gas, Water supply and Recycling	-	-
Construction	41 + 4 Level codes	41 + 4 Level codes
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	46, 47, + 4 Level codes	46, 47, 95 + 4 Level codes
Hotels, Restaurants and Leisure	55, 56	55, 56
Air Transport and Supporting Activities (including Training)	51, 52, 23 + 4 level code	51, 52, 23 + 4 level code
Other transport, storage and communication	49--53 + 4 Level codes	49--53 + 4 Level codes
Business Services, Public Administration and Other Services (including Health Services)	64, 66, 70, 77, 84 + 4 level codes	62, 63, 64, 65, 66, 68, 70, 77, 81, 84, 96 + 4 level codes

Source Halcrow employment estimate using NOMIS 2007 SICs

6.4.4 Explanatory variables: the key variables that affect employment

The employment at the Airport is dependent upon a range of factors or variables. The initial list of variables was compiled by undertaking a literature review of existing studies on airport employment drivers and with input from an expert airport planner.

This initial list was narrowed down to a list of variables for which reliable data was readily available and consistently sourced over a sufficient time period. It was possible to source all of the variables identified in Table 6.2, except the land use variables.

These variables can be understood within five broad categories:

- Traffic;
- Cargo;
- Passenger and traffic characteristics;
- Socio-economic variables;
- and airport specific variables.

Table 6.2 List of explanatory variables that were identified as possible factors affecting employment

Category	Variable	Notes	Source
TRAFFIC	ANNUAL PASSENGERS	See detailed breakdown below*	CAA Airport statistics (historic); LLAOL forecasts (future)
	ANNUAL AIR TRAFFIC MOVEMENTS (ATMS)	Further split into passenger, business and cargo atms	
CARGO	CARGO TONNAGE	Further split into freight and mail cargo	CAA Airport statistics (historic); LLAOL forecasts (future)
	SHARE OF TONNAGE THAT FLIES BY DEDICATED AIRCRAFT	Dedicated aircraft freight is separate to belly hold freight	
*PASSENGER /TRAFFIC CHARACTERISTICS	% PASSENGERS WHO ARE BUSINESS/LEISURE	By pax	CAA Airport statistics
	% PASSENGERS WHO ARE UK / FOREIGN RESIDENTS	By pax	
	% TRAFFIC WHICH IS DOMESTIC/INTERNATIONAL	By ATMs and pax	
	% TRAFFIC WHICH IS NO FRILLS	By ATMs and pax	CAA Bespoke Report
	% TRAFFIC WHICH IS SCHEDULED	By ATMs and pax	CAA Airport statistics
SOCIO-ECONOMIC FACTORS	UK GDP GROWTH	Total and per capita	ONS
	REGIONAL GVA	Actual and growth, total and per capita	

Category	Variable	Notes	Source
	REGIONAL GROSS DOMESTIC HOUSEHOLD INCOME	Actual and growth	
	AIR WAGES : LOCAL WAGES	The ratio of median wages locally and for the air industry (SICs 52 and 52.23) differ	Annual Survey of Hours and Earnings (ASHE) (ONS)
	RECESSION	This was set up as a dummy variable for the years 2008-11, and as a lagged dummy variable from 2009.	
LAND USE	AIRPORT RELATED e.g. terminal and taxiways	Data unavailable in a usable format	-
	COMMERCIAL SPACE	Data unavailable	-
	EMPLOYMENT CENTRE	Data unavailable	-
EMPLOYMENT	LOCAL EMPLOYMENT	Lagged the dependent variable	Business Register and Employment Survey/ Annual Business Inquiry (BRES/ABI)
	REGIONAL POPULATION	Actual and growth	BRES/ABI

Source: CAA, ONS, NOMIS, BRES/ABI; ASHE

The majority of the airport related data was gathered from the Civil Aviation Authority (CAA) website and a bespoke report produced by CAA for this study. The Socio-economic factors were sourced from the Office for National Statistics (ONS).

Land use data was not available in a usable form for the analysis. However, the use of panel data regression analysis automatically includes a 'fixed effect' for each airport, by making an airport specific adjustment to the value of the constant in the generic function produced by the regression analysis. The generic function is translated into separate functions for each airport and these differ by their fixed values. This reflects inherent differences between the airports are captured within the modelling, even without the presence of airport characteristic variables.

6.5 Employment Modelling Stage 1: Identifying the approach to econometric regression analysis

To identify which variables have a significant impact on airport employment and to produce a function that contains these explanatory variables, a panel data regression across a range of airports was the chosen approach to econometric modelling.

There were two key reasons for this, one based upon the advantages of panel data regression, and the other a result of the data constraints that were faced:

1. Panel data regression can analyse multiple cross-sections across a historic time series, and can therefore robustly assess employment drivers for airports of different sizes to Luton. This provides us with an analysis which covers both Luton's current traffic levels and also its potential future traffic (the development scenario, to 17.8 mppa)

2. Employment data could only be reliably sourced for nine data points from 2003-11 for London Luton Airport alone which is not sufficient to prepare and validate the econometric function. A minimum of 30 data points are required to create such a function. Consequently the use of comparable airports in the study increases the number of data points and helps improve the robustness of the analysis.

A range of UK airports that are similar to Luton in terms of flight and passenger characteristics, both in the current and development scenarios, were included in the analysis. These airports were narrowed down to a final seven including London Luton.

Table 6.3 Airports included in regression analysis

Airport	2011 Pax
London Luton	9.45 mppa
Stansted	18.1 mppa
Manchester	18.9 mppa
Birmingham	8.62 mppa
Bristol	5.78 mppa
Newcastle	4.35 mppa
Liverpool	5.25 mppa

Source CAA 2011; LLAOL 2011

Continuous data for the variables was set up in econometric software to undertake regression analysis to form a function that explains the historic direct employment levels at the Airport. To identify the final form of the function, standard econometric tests were carried out to ensure that any variables which were not significant in explaining employment at the Airport were omitted. Statistical test were also

performed to ensure there were not any symptoms of estimation bias or errors displayed in the final econometric equation.

The following tests were undertaken to ensure statistical robustness:

- T-statistics and P-values for each variable – these assess the probability that the variable is significant in explaining airport employment;
- The R2 statistic was used to assess the overall explanatory power of the function, this describes how much of the employment is explained by the included variables; and
- Various other econometric tests were used to ensure the function did not contain serious biases, such as relationships within its prediction errors.

These tests are explained in detail in the Technical Annex.

6.5.1 Employment model functional form:

It was quickly identified that annual passengers was the best single traffic driver of airport employment, as it alone explained a large portion of employment and much more than ATMs. Cargo tonnage was also important in explaining employment. However, given the high level of covariance between passengers and cargo tonnage, a combined variable called million work load units (mwlu) was used in the model.

Once the key air traffic driver for airport employment had been identified, the process continued for testing the impact of additional explanatory variables. In particular, regional GVA growth, regional GVA per head growth, UK GDP growth and the percentage of air passengers traffic that was 'no frills' were shown to have some degree of explanatory power. However, the impact of these variables on the overall explanatory power, or fit, of the model was marginal.

One variable did satisfy both criteria of increasing the model's explanatory power whilst keeping to high probability levels; was lagged employment. The level of the employment in any one year is partially explained by the level of employment in the previous year.

The function therefore that robustly explains direct airport employment includes the employment level for the previous year, the annual mwlu and an airport fixed effect constant.

The final function that was used to forecast employment at Luton was:

$$\mathbf{Y_t = c + \mathit{a}Y_{t-1} + \mathit{b}MWLU_t + FEi + e_t}$$

Where:

- Y = gross direct employment at London Luton Airport
- t = the period t (year t)
- c = the function's constant – this reflects the fixed gross employment that is observed across all identified airports
- Y t-1 = lagged direct employment, by one year
- *a* = the coefficient associated with Yt-1
- mwlu = million work load units – this is a measure of both annual passengers and cargo tonnage combined[12]
- *b* is the coefficient associated with mwlu
- FEi = fixed effect associated with airport "i" – this reflects the fixed gross employment that is observed specific to London Luton Airport
- et = error term in year t

The following table shows the coefficients and probability values for the included variables for the mid estimate forecast. Variables were only included if their explanatory power was significant. The variables in the function have t-statistics and p-values that indicate they have a probability of more than 95% of explaining direct employment.

[12] One mwlu is equal to one million passengers per year or one hundred thousand tonnes of freight

Table 6.4 Table to show the coefficients of the final function (function for mid estimate)

Variable	Coefficient	Probability (1 – p-value)	T-stat value
Constant	1903.7		
MWLU	215.8	99.9	3.4
Employment last period, Yt-1	0.3	98.0	2.4
Fixed Effect	London Luton = 850.5		

Source Halcrow modelling 2012 (please note in interpreting the coefficients and their relative size, it is important to note that they reflect the units in which the data was entered in to the model)

The coefficients show that gross direct employment has a direct positive relationship with historic employment at the Airport and the Airport's annual passengers and cargo tonnage.

The final function has an R^2 value of 98.16% which indicates that a very high proportion of the employment is explained by the included variables.

The high employment estimate has likewise been fitted to the functional form above, where its own coefficients are slightly different and subsequently produce higher forecasts of direct employment. Using the high employment estimate also results in a function with strong explanatory power, with an R^2 value of 98.4%.

The full results for both employment estimate functions are found in the Technical Annex.

6.6 Employment Modelling Stage 2: Forecasting employment growth

The next stage of the modelling was to use the final function to project gross direct employment at the Airport for the base case and development scenarios. In order to prepare the forecasting model, projections were required for all the explanatory variables in the function for all periods from 2012 to 2028. The Airport projections for annual passengers, ATMs and cargo tonnage were provided by LLAOL for 2012 to 2028 for both scenarios.

As the forecasts have been based upon historical employment data, any productivity gains which were experienced during the period of 2003-11 are reflected in the resultant econometric function. In using this function to forecast future employment, the implicit assumption is that a historical trend in productivity will continue to 2028.

The proposed econometric function was tested for validity by undertaking backcasting analysis to see how the function fits the historical data. This was done by taking Luton's historical position in terms of explanatory variables and seeing how close the predicted employment of the function fitted actual employment for that period. The Technical Annex describes this process in more detail. The average forecasting error for Luton 2003-11 was 1% for the mid estimate and 5% for high

estimate. This demonstrates a good historical fit on average and provides further confidence for using the resulting econometric function to forecast direct employment at London Luton Airport.

6.7 Scenarios and Results

This section presents the current employment estimate at London Luton Airport, and the results of the forecast model for both the base case scenario where the Airport is projected to reach 12.4 mppa in 2018 and remain at capacity thereafter to 2028, and the development scenario where the Airport are projected to increase to 17.8 mppa in 2028.

As mentioned in section 6.4 a range of low, medium and high forecasts have been modelled for gross direct employment for both the base case and development scenarios. These estimates are presented for:

- Current employment
- Base case scenario employment forecast – no new developments (2028)
- Development scenario employment forecast (2028)

The mid estimate has been taken as the most realistic estimate of future employment at the Airport. There are two key reasons for this. Firstly the estimate of employment is based on SIC codes that are more closely related to Airport activity. The SIC codes have been based on a review of businesses located at the Airport, and on a review of the BRES data. The estimates for current employment within each industrial grouping match well with alternative estimates of employment at the Airport. Secondly, two chosen LSOAs in the mid estimate match most closely with the geographic location of the direct onsite and offsite businesses, based on a detailed analysis of the postcode locations of direct onsite and offsite businesses.

The forecasts have been broken down into the following groupings:

- Gross direct onsite and offsite (combined)
- Full time and part time
- Industrial groupings

All employment estimates have been presented as full time equivalents (FTEs) unless stated otherwise. One part time job is estimated to be 0.5 of a full time equivalent based on an analysis of the average hours worked by a part time worker using the Nomis annual survey of hours and earnings.

6.7.1 Current Employment

The 2011 gross direct employment at London Luton Airport, based on the BRES data, is 8,250. This is relatively similar to the estimate of 8,100 in the latest (2011) Annual Monitoring Report published by LLAOL. Table 6.5 shows the range of low to high estimates of current employment based on the BRES data. All figures have been rounded to the nearest 50.

Table 6.5 Range of current direct employment estimates for London Luton Airport (2011)

	Low	Medium	High
Current Estimate of Employment	6,100	8,250	9,500

Source Halcrow 2012, BRES 2011

Table 6.6 shows the current gross direct employment at and around the Airport broken down into the ten broad industrial groupings that we have constructed from the NOMIS SIC codes.

Table 6.6 Current direct employment (2011) for the mid estimate by industrial grouping

SIC GROUPINGS	FULL TIME	PART TIME	FTEs
Agriculture, Fishing and Mining	0	0	0
Extraction, Mining, Quarrying	0	0	0
Manufacturing	1,300	100	1,350
Electricity, Gas, Water Supply and Recycling	0	0	0
Construction	0	0	0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	500	450	750
Hotels, Restaurants and Leisure	200	250	300
Air Transport and Supporting Activities (including Training)	3,350	450	3,550
Other transport, storage and communication	1,400	300	1,550
Business Services, Public Administration and Other Services	650	150	750
Total	**7,400**	**1,700**	**8,250**

Source Halcrow 2012, BRES 2011

6.7.2 Base case Scenario

LLAOL provided Halcrow with a detailed breakdown of the passenger and cargo numbers and movements for each year from 2011 to 2028 for the base case scenario. They project that the existing maximum capacity of London Luton Airport is 12.4 mppa which would be reached by 2018 and remain at maximum capacity then onwards until 2028 without the proposed developments going ahead.

These projections have been applied to the econometric function and result in a forecast for gross direct employment of 11,050 (mid estimate). This is a growth of 2,700 new direct jobs at and around the Airport site since 2011.

Table 6.7 Range of base case direct employment estimates for London Luton Airport (2028)

	Low	Medium	High
Base case Employment Forecast	8,300	11,050	13,550

Source Halcrow 2012

These forecasts can be broken down by the ten high level industrial groupings and by part time and full time employment.

Table 6.8 Base case mid estimate direct employment forecasts by industrial grouping (2028)

SIC GROUPINGS	FULL TIME	PART TIME	FTEs
Agriculture, Fishing and Mining	0	0	0
Extraction, Mining, Quarrying	0	0	0
Manufacturing	1,600	100	1,650
Electricity, Gas, Water supply and Recycling	0	0	0
Construction	0	0	0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	700	600	1000
Hotels, Restaurants and Leisure	250	350	450
Air Transport and Supporting Activities (including Training)	4,700	650	5,050
Other transport, storage and communication	2,000	450	2,250
Business Services, Public Administration and Other Services	600	150	650
Total	**9,900**	**2,250**	**11,050**

Source Halcrow 2012

6.7.3 Development Scenario

LLAOL forecast that the proposed developments at London Luton Airport will lead to a growth in the capacity and usage of the Airport to 17.8 mppa by 2028. They provided Halcrow with a detailed breakdown of the forecasts for passenger and cargo numbers and movements which have been applied to the econometric function. This results in forecast direct employment at the Airport in 2028 of 13,350 based on the mid estimate of employment.

Table 6.9 Range of low to high forecasts of direct employment for London Luton Airport for the development scenario (2028)

	Low	Medium	High
Future (development scenario) Forecast for Employment	10,100	13,350	17,450

Source Halcrow 2012

Table 6.10 presents the (mid estimate) employment projections by full and part time jobs and broad SIC groupings.

Table 6.10 Development scenario mid estimate direct employment forecasts by industrial grouping (2028)

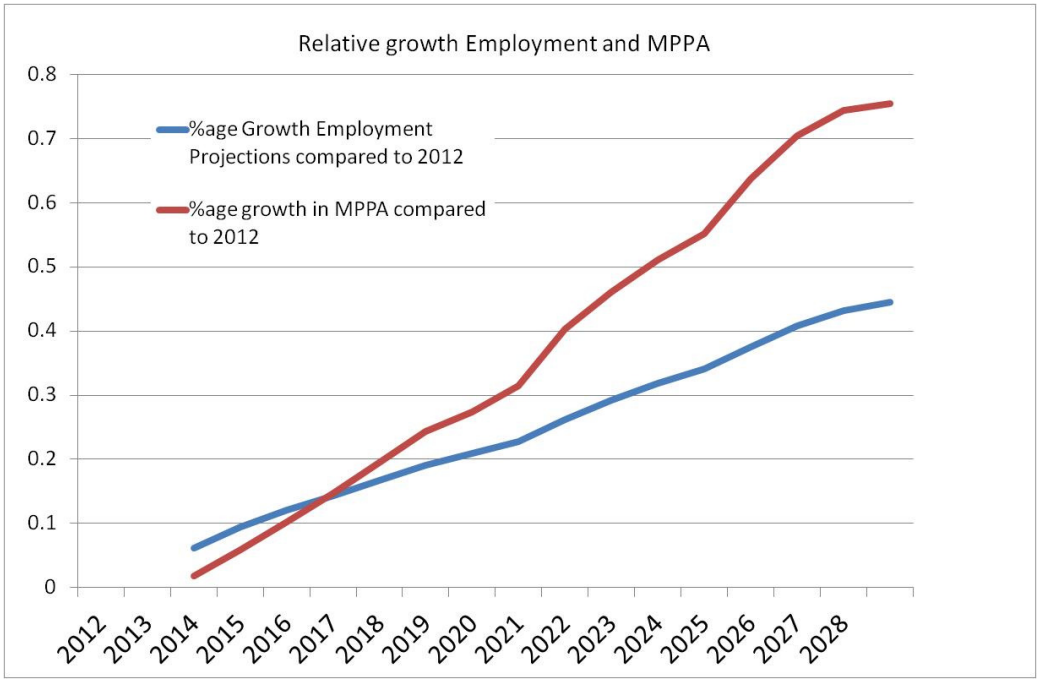
SIC GROUPINGS	FULL TIME	PART TIME	FTEs
Agriculture, Fishing and Mining	0	0	0
Extraction, Mining, Quarrying	0	0	0
Manufacturing	1,950	100	2,000
Electricity, Gas, Water supply and Recycling	0	0	0
Construction	0	0	0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	850	700	1,200
Hotels, Restaurants and Leisure	300	450	550
Air Transport and Supporting Activities (including Training)	5,700	750	6,100
Other transport, storage and communication	2,450	550	2,700
Business Services, Public Administration and Other Services	700	150	800
Total	**12,000**	**2,700**	**13,350**

Source Halcrow 2012

Figure 6.2 presents the annual percentage growth in employment during the forecast period for the development scenario. There is a continuous growth in employment across the study period, but the number of new employees generated per mppa decreases over time. This reflects annual productivity gains in the airline industry, and that a proportion of the employment at the Airport is fixed and does not grow with an increase in traffic.

In the base case scenario, annual productivity has been assumed to remain stationary once airport capacity is reached in 2018. This is a conservative estimation as in practice some degree of productivity gains in airport employment is likely to continue despite traffic level reaches capacity. The Technical Annex further assesses the trends in both historical and forecast employment figures for the base case and development scenarios.

Figure 6.2 Employment and mppa forecasts for the development scenario



Source Halcrow 2012, LLAOL 2012

The forecasts of total direct employment have factored in both fixed and variable types of employment at the Airport, as broadly identified by the functional form. The breakdown of employment by broad SIC grouping has assumed a fixed proportional split based on current employment mix. Therefore, whilst the total employment figures have factored in fixed and variable employment, the breakdown by employment types, as presented in the scenario forecast sections above, simply assume the same grouping breakdowns as the current day split of employment and must therefore be considered with caution.

A series of sensitivity analysis to assess the impact on employment growth of different traffic levels from their projected levels has been conducted. Assumptions and results of the sensitivity analysis are described in the Technical Annex.

6.8 Calculating Indirect and Induced Employment (for mid forecast estimates)

The impact of the development on the supply chain and the impact of the employees spending their wages in the local economy can be estimated using indirect and induced multipliers. The composite multiplier of 1.33 for infrastructure projects at the sub regional level, identified in the BIS 2009 additionality research[13], has been applied to estimate the indirect and induced employment for the current, base case and development scenarios. This multiplier is similar to values used in other airport developments studies and generates a conservative estimate of indirect and induced employment. For example a recent study into employment at Stansted airport by BAA also used a similar multiplier to calculate indirect and induced employment. The effects of applying the multiplier are presented in Table 11 for the current day employment, and both the base case and development scenarios.

Current employment

The current direct employment generated by the Airport is approximately 8,250 FTE jobs. Using the composite multiplier to calculate the additional jobs generated through the supply chain and wider spending, we estimate a further 2,700 jobs are generated. The total current direct, indirect and induced employment equates to 10,950 jobs.

Base case scenario

Applying the composite multiplier to the gross direct employment forecasted in the base case scenario, results in a total of 3,650 indirect and induced jobs. The combined forecasted direct, indirect and induced employment generated at the Airport in the base case scenario totals 14,700 jobs.

Development scenario

Applying the multiplier to the gross direct employment forecasted in the development scenario indicates that 4,400 indirect and induced jobs would be generated when the Airport reaches 17.8 mppa. The combined forecasted direct, indirect and induced employment generated at the Airport in the development scenario totals 17,750 jobs.

[13] Department for Business Innovation and Skills (Oct 2009) BIS Occasional Paper No 1 – Research to improve the assessment of additionality

Table 6.11 base case estimate of gross direct, indirect and induced employment (2028)

Gross employment forecasts	Current Employment	Base case Scenario	Development Scenario
Direct onsite	8,250	11,050	13,350
Indirect and induced	2,700	3,650	4,400
Total gross employment	**10,950**	**14,700**	**17,750**

Source Halcrow 2012

6.9 Employment growth attributable to the planned developments

The direct employment generated at the Airport as a result of the planned development can been calculated by subtracting the forecast base case direct employment from the employment projected for the development scenario.

Table 6.12 Direct employment generated as a result of the planned developments

Development scenario employment forecast		Base case employment forecast		Direct employment attributable to the planned developments
13,350	–	**11,050**	=	**2,300**

Source Halcrow 2012

The total direct employment that would be generated as a result of the planned developments at the Airport is 2,300 jobs.

Displacement and leakage have not been calculated as part of this assessment.

- Displacement is the proportion of jobs that would lead to other employment being displace elsewhere
- Leakage is the proportion of jobs that would leak outside the core impact area.

It is a common approach across airport employment studies to present figures as gross and to not calculate displacement and leakage due to the unique and specific characteristic of each airport developments.

In order to estimate the number of indirect and induced jobs generated by the planned developments, the indirect and induced jobs generated in the base case scenario are subtracted from the development scenario. Table 6.13 indicates that a total of 750 indirect and induced jobs can be attributed to the planned developments.

Table 6.13 Indirect and induced employment

Development scenario employment forecast		Base case employment forecast		Indirect and induced employment attributable to the planned developments
4,400	–	**3,650**	=	**750**

Source Halcrow 2012

Overall, we observe that a total of 3,050 jobs, an increase of 21% from the base case employment, can be generated as a result of the planned developments at Luton Airport.

Table 6.14 Total employment attributable to planned developments

Employment attributable to planned developments	Employment forecasts
Direct onsite	2,300
Indirect and induced	750
Total employment	**3,050**

Source Halcrow 2012

6.10 Labour supply analysis

This section presents a high level analysis of the availability of labour in Luton and the Core Impact Area to fill the new jobs that will be generated by the growth of London Luton Airport. Two key aspects have been assessed; firstly, whether the number of workers available in Luton is sufficient to take up the additional jobs from the Airport development, and secondly whether the required skills are available in Luton and the wider core impact area.

Assessment 1) Number of workers available

The number of workers that will be available in the Core Impact Area in 2028 to fill the new jobs generated by the growth of the Airport has been broadly estimated from the number of economically active people registered as job seekers. The following presents a breakdown of the variables used in this estimation, and the data sources:

Table 6.15: Variables used for labour and skills supply analysis

Variable	Current (2011)	Source	Projection 2028	Sources
Working age population	132,800	NOMIS annual population survey	154,00	NOMIS start grown by East of England population profiles
Total population	203,600	NOMIS annual population survey	237,150	NOMIS start grown by East of England population profiles
Workplace employment	97,600	Cambridge Economics	127,250	Cambridge Economics
Resident employment	82,850	Cambridge Economics; East of England Forecast Model	107,250	Cambridge Economics; East of England Forecast Model
Unemployment	8,000	NOMIS annual population survey	7,550	NOMIS start grown by East of England unemployment profile
Total economically active (resident empl + unempl)	90,850	NOMIS; Cambridge Economics	114,800	NOMIS; Cambridge Economics

In 2011 Luton's population of economically active people, (resident employment and the unemployed), was 90,850. This is projected to grow to approximately 114,800 by 2028. The available economically active population, those that are unemployed and looking for work, in 2011 was 8,000. This is projected to decrease to 7,550 in 2028.

The number of people who are looking for work has been compared to the additional jobs generated as a result of the Airport's growth in both the base case and development scenarios. For both scenarios there is sufficient availability of potential workers people who are projected to be economically active and without employment - within Luton to take up these jobs.

Table 6.16 availability of workforce to take up new jobs

Scenario	Employment forecast (2028)	Employment growth since 2011	Available workforce to take up new jobs
Current (2011)	8,250	n/a	8,000
Base case	11,050	2,800	7,550
Development	13,350	5,100	7,550

Assessment 2) Quality of Labour Supply

There are enough people to fill the additional jobs to 2028 if these airport employees all came from within the Luton district. But there are two important aspects to consider, firstly, only 42% of current employees at the Airport come from the Luton area and surrounding Core Impact Area districts such as Central Bedfordshire and North Hertfordshire supply a large proportion of the remaining workers. And secondly, there is a requirement for specific skills and different occupational types at the Airport.

It is important therefore to understand the breakdown of skill requirements at the Airport to 2028 and of the potential workforce (the available economically active population). To make this assessment, occupational levels have been used as a proxy as they can be broken down for both the local area and the SIC industrial groupings, relevant to the airport employment, from NOMIS' population survey.

In recognising that the skill level (and occupational level, as a proxy) of the economically active population who are not in employment is likely to be lower than those employed, an adjustment has been applied to the occupational proportions that apply to the available economically active population. This adjustment was based upon 2011 ONS employment data by applying UK-wide ratios of employment: unemployment for each occupational level (by current and previous employment) to Luton's employment. This produced estimates of the required number of jobs in the occupational categories in 2028.

By then comparing the occupational requirements of the Airport to the available occupational levels within the Luton area we were able to identify skill/occupational shortfalls across the period as below:

Table 6.17: Forecast employment growth at London Luton Airport and availability of labour supply by skills type.

Occupational level	2028 forecasts of airport employment	2028 forecast of available workforce in Luton	Projected deficit (maximum in any one year)
Managers, directors and senior officials	650	200	450
Professional occupations	350	600	
Associate prof & tech occupations	350	450	
Administrative and secretarial occupations	550	850	
Skilled trades occupations	750	10500	
Caring, leisure and other service occupations	300	700	
Sales and customer service occupations	250	1000	
Process, plant and machine operatives	1100	650	400
Elementary occupations	950	2050	
Total	**5,100**	**7,550**	**850**

There is a forecast shortfall of labour skills in Luton in two key occupational areas: managers, directs and senior officials, and process, plant and machinery operatives. This labour would need to be supplied from elsewhere within the core impact area. A high level analysis of the labour supply in the core impact area revealed that the shortfall of skills can be supplied from this area. In particular, Milton Keynes and Central Bedfordshire are likely to have a large supply of managers, directors and senior officials and Bedford and Dacorum have a relevant process, plant and machine operative supply of labour. The accessibility to these labour markets is reasonable as all areas are within a short drive time from the Airport.

In summary it is likely that the new jobs generated at the Airport can be met by the labour supply within Luton and the core impact area. Due to the particular skills requirements needed for the new jobs, some of the new employees will need to come from across the core impact area rather than relying on Luton alone.

This labour analysis relies upon the assumptions that:

- Additional employment at the Airport follows the same occupational breakdown as current airport employment
- The UK-wide breakdowns of unemployment within occupational levels (as per their previous employment) can be applied as a proxy for the make up of skills within the economically active population without a job for Luton; and
- The occupational levels within Luton's workplaces reflect the resident population's occupational levels

These assumptions are based on existing observed trends in the labour market. Potential changes in available skills sets in Luton (and wider area) arising from labour market dynamics have not been modelled as part of this analysis.

6.11 Summary

In summary this chapter has presented the methodology for projecting future employment generated by London Luton Airport. The chapter has also presented the current employment generated by the Airport and the results of forecasting the employment for two key scenarios:

1. Base case: passenger growth at London Luton Airport to 12.4 mppa by 2018 and remain at 12. 4 mppa until 2028 with no planned future developments
2. Development case: passenger growth at London Luton Airport to 17.8 mppa by 2028 enabled by the developments planned by LLAOL.

The current direct onsite and offsite employment generated by the Airport is estimated to be 8,250 jobs. A further 2,700 jobs are generated through indirect and induced effects.

Without any planned developments at the Airport, the gross direct employment would be 11,050 in 2028. In comparison, the total gross direct employment generated by the Airport in 2028 in the development scenario is 13,350 jobs. This is 5,100 more jobs the current day. The actual direct employment that can be attributed to the planned developments and associated growth to 17.8 mppa is **2,300 jobs.**

In addition to direct employment, additional jobs would be generated through indirect and induced effects. It is estimated that once the Airport reaches 17.8 mppa a total of 4,400 jobs will exist through indirect and induced effects. Of which, **750 induced and indirect jobs** can be associated to the planned developments at the Airport.

Table 6.18 Employment forecasts for current, base case and development scenarios in 2028

Employment	Current Day	Base Case	Development Case	Base Growth	Development Growth	Total Growth
Gross Direct	8,250	11,050	13,350	2,800	2,300	5,100
Gross Indirect and Induced	2,700	3,650	4400	950	750	1,700
Total Gross Employment	**10,950**	**14,700**	**17,750**	**3,750**	**3,050**	**6,800**

Source Halcrow 2012

7 Current Economic Value of the Airport

7.1 Introduction

The approach used to estimate the current annual economic value of the Airport is based on an economic model developed using Excel. It relies on data inputs from a number of sources, including Business Register and Employment Survey (BRES) and Experian. These are combined to establish two components of economic impact.

The first component, referred to as direct income injection, consists of:

1. the wages and salaries of direct onsite and offsite airport workers that are spent in the local economy;

2. local income arising from direct business expenditure on goods and services; and

3. business profits likely to be invested back into the local economy.

Further multiplier impacts arise from these direct income injections into the local economy. These include the supply chain effect of local spending by businesses and the induced income effect from household spending in the local economy. These two effects are captured by a composite multiplier of 1.33.

The second component is government revenues generated as a result of the Airport's operations. This includes revenues for central government from business and personal taxes on the income generated by firms and workers. It also includes income generated for local government through business rates received from firms operating within the direct on-site and direct off-site Airport boundary. Revenue raised from Air Passenger Duty (APD) also contributes to the income generated by the government.

The current annual economic value has been assessed using the most up to date data available for each of the inputs of the model. A summary of the data sources and dates of publication is provided in Annex A. The employment data is based on BRES 2011. The data matches the current estimate of employment presented in the employment modelling. Data relating to wages and salaries, taxes, APD, and business rates are all based on the most recently available sources. The latest Experian data for 2012 has also been used within the assessment.

7.2 Direct Income Injection

7.2.1 Wages and Salaries

Our estimate for the wages and salaries of Airport workers is based on:

1. total gross direct employment of 8,250 people at the Airport based on 2011 Business Register Employment Survey (BRES) data.

2. annual average per capita employee remuneration data (gross wage levels) . The source of this data was the wage rates in Experian's 2012 National Business Database for workers at on-site and off-site businesses at the Airport.

For each Standard Industrial Classification (SIC), the 2011 employment levels at the Airport have been multiplied by the average wage rates for Airport workers to estimate employee gross remuneration, inclusive of income tax and employees national insurance contributions. Table 7.1 shows that total employee remuneration, inclusive of income tax and employees' National Insurance contributions, for workers at the Airport in 2012 is estimated to be £334 million.

To estimate the income injection into the local economy, tax and NI contributions have been deducted from the total employee remuneration figure to produce a net figure. The tax and NI have been estimated at £88 million per annum. The wages and salaries less tax and NI is approximately £245 million. It has been assumed that there is a strong correlation between total net employment remuneration and its injection into the local economy. However the strength of the correlation has not been assessed for this report.

Table 7.1: Employment, average wages and employee remuneration at London Luton Airport

Industry (Grouping of Standard Industrial Classification)	Employment by Sector	Average Wages	Total Employee Remuneration
Agriculture, Forestry and Mining	-	£0	£0
Extraction, Mining and Quarrying	-	£0	£0
Manufacturing	1,350	£43,382	£58.57
Electricity, Gas, Water supply and Recycling	-	£0	£0
Construction	-	£40,663	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	750	£18,123	£13.59
Hotels, Restaurants and Leisure	300	£15,329	£4.60
Air Transport and Supporting Activities (including Training)	3,550	£49,260	£174.87
Other transport, storage and communication	1,550	£39,856	£61.78
Business Services, Public Administration and Other Services (including Health Services)	750	£27,272	£20.45
Total (including Tax and NI)	**8,250**		**£333.86**
Tax and employee NI contributions			£88.41
Direct Injection (excl. Tax and NI)			**£245.46**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

7.2.2 Direct business expenditure

Our estimate of direct expenditure by businesses at the Airport is based on:

a) The estimated sectoral split of employees at the Airport, as shown in Table 7.1 and described above;

b) Estimates of average turnover per employee, for businesses at the Airport based on data from Experian's 2012 National Business Database.

For each type of employment, the current number of jobs at the Airport has been multiplied by the average turnover per employee to estimate the total turnover of Airport businesses. Table 7.2 shows that businesses at the Airport generate an annual turnover of approximately £1.9 billion.

Table 7.2: Employment, average turnover per employee and total turnover of businesses at London Luton Airport

Industry (Grouping of Standard Industrial Classifications)	Employment by sector	Average Turnover Per Employee	Total Turnover (£ million)
Agriculture, Fishing and Mining	-	£0	£0
Extraction, Mining, Quarrying	-	£0	£0
Manufacturing	1,350	£127,384	£171.97
Electricity, Gas, Water supply and Recycling	-	£0	£0
Construction	-	£149,295	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	750	£171,987	£128.99
Hotels, Restaurants and Leisure	300	£54,790	£16.44
Air Transport and Supporting Activities (including Training)	3,550	£391,575	£1,390.09
Other transport, storage and communication	1,550	£73,053	£113.12
Business Services, Public Administration and Other Services (including Health Services)	750	£157,918	£118.44
Total	**8,250**		**£1,939.16**

Source: BRES (2011), Experian (2012), Halcrow (2012)

To calculate the direct business expenditure injection in to the local economy, business turnover needs to be adjusted to exclude profits, taxes and remuneration.

Data from Experian's National Business Database (2012) suggests that the pre-tax profit margin for a sample of businesses at the Airport is 2.9% of business turnover. Based on this margin, pre-tax profits have been estimated at £57 million. Contributions paid by businesses towards Employers National Insurance and VAT have been estimated at £25 million, or 1.3% of business turnover for a sample of businesses at the Airport (based on Experian's National Business Database (2012)).

Deducting pre-tax profits and employee contributions to National Insurance and VAT provides an estimate of business expenditure on goods and services. To avoid double counting, wages and salaries paid to workers have also been deducted. This then leaves an estimate of the value of business expenditure by businesses at the Airport. However, the Annual Business

Survey (2011) suggests that the ratio between Business Turnover and GVA (a proxy for economic output) for the air transport sector is 22.2%, as shown in Table 7.3 below[14]. It is assumed that the 'Air Transport' sector is reflective of core and supporting activities at Luton Airport. Therefore, it is assumed that 22% of annual turnover (after employee wages, profits and taxes) is considered as GVA contribution to the local economy.

Table 7.3: Derivation of Direct Business Expenditure in the Local Economy

Stage	Description	Value (£million)
A	Total Turnover	£21,474
B	Total GVA	£4,776
C = B/A	GVA as a Proportion of Turnover	22.2%

Source: ABS (2011), Halcrow (2012)

Based on this percentage, 22% of business expenditure will provide a direct income injection into the local economy. Table 7.4 shows this injection to be worth £339 million.

[14] Due to a lack of information on the ratio between turnover and GVA at local level, the ratio is based on UK figures.

Table 7.4: Direct business expenditure into local economy, £ million

Turnover of businesses at London Luton Airport	**£1939.16**
Average Pre Tax profit margin of sample businesses at LLA as a % business turnover (for which information is available)	2.9%
Pre tax profit for businesses at Luton Airport	£56.95
Total employee remunerations of workers at Luton airport	£333.86
Average Social Security and VAT as a % of business turnover for sample businesses at Luton Airport	1.3%
Employers contribution to Social Security and VAT	£25.28
Business Expenditure	£1,523.06
% of business activities of firms at Luton Airport that are within the core catchment area	22%
Direct Business Expenditure in the local economy	**£338.74**

Source: BRES (2011), Experian (2012), Halcrow (2012)

7.2.3 Direct profits

Table 7.5 shows that the combined annual pre tax profit of businesses at the Airport is estimated at £57 million. Data from Experian's National Business Database showed that average level of corporation tax paid by a sample of businesses at the Airport represented 0.9% of their annual turnover (based on Experian's National Business Database (2012)). Applying this percentage to all businesses at the Airport produces an estimate of total corporation tax of £18 million. Deducting these taxes from pre-tax profits provides an estimate for retained profits of £39 million. However, the factor generated in Table 7.4 above suggests that only 22% of these retained profits can be considered as direct business profits accountable to the local economy. Therefore, as shown in Table 7.5, the direct income injection from direct profits is estimated to be £9 million.

Table 7.5: Direct profits, £ million

Approximate Pre Tax Profit generated at Luton Airport	**£56.95**
Average tax on profit as a % of turnover by businesses (for which information is available)	0.9%
Approximate Tax payable on profit generated at Luton Airport	**£17.56**
Retained profits for businesses at Luton Airport	£39.39
Direct profits accountable to the local economy	**£8.76**

Source: BRES (2011), Experian (2012), Halcrow (2012)

7.2.4 Multiplier Effects

The composite multiplier effect of 1.33, which is based on BIS Additionality research, has been applied to the estimate of wages and salaries, direct business expenditure and direct profits injected into the local economy.

Table 7.6 presents the total income injection in to the local economy generated by LLAOL employees and businesses of £789 million per annum.

Table 7.6: Total income injection in to local economy (millions)

Wages and salaries of workers (excluding tax and NI)	£245.46
Direct business expenditure	£338.74
Direct profits accountable to the local economy	£8.76
Composite Multiplier Effect	£195.68
Total income injection	**£788.64**

Source: BRES (2011), Experian (2012), Halcrow (2012)

7.3 Government Revenues

This component includes income for central and local government from the Airport's operations e.g. business and personal taxes on the income generated by firms and workers. It also includes business rates payable by firms and Air Passenger Duty.

7.3.1 Taxes paid by businesses

Table 7.7 provides estimates of corporation tax, employers' National Insurance contributions and VAT. The combined value of these taxes is estimated at £43 million.

Table 7.7: Taxes paid by businesses, £ millions

Corporation tax	**£17.56**
Employers' national insurance contribution and VAT	**£25.28**
Taxes paid by businesses at Luton Airport annually	**£42.85**

Source: BRES (2011), Experian (2012), Halcrow (2012)

7.3.2 Taxes paid by workers

Table 7.8 shows income tax and employees National Insurance contributions that would be paid in relation to average wages for each SIC grouping (as shown in Table 7.1). The table indicates that the tax payable by workers at the Airport is approximately £88 million.

Table 7.8: Tax paid by Workers

Industry (Grouping of Standard Industrial Classifications)	LLA Employment	Per capita annual National Insurance	Per capita annual income tax	Total tax on wages and salaries (millions)
Agriculture, Fishing and Mining	-	£0	£0	£0
Extraction, Mining, Quarrying	-	£0	£0	£0
Manufacturing	1,350	£4,185	£7,233	£15.41
Electricity, Gas, Water supply and Recycling	-	£0	£0	£0
Construction	-	£3,969	£6,511	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	750	£1,261	£2,003	£2.45
Hotels, Restaurants and Leisure	300	£852	£1,444	£0.69
Air Transport and Supporting Activities (including Training)	3,550	£4,320	£9,587	£49.37
Other transport, storage and communication	1,550	£3,870	£6,349	£15.84
Business Services, Public Administration and Other Services (including Health Services)	750	£2,362	£3,833	£4.65
Total	**8,250**			**£88.41**

Source: BRES (2011), Experian (2012), Halcrow (2012)

7.3.3 Business Rates

The Valuation Office Agency provides estimates of rateable values for individual properties. The current rateable value for properties at the Airport area is estimated to be approximately £21 million. However, the rateable value of a property is not the final business rates bill that is paid. The final business rates bill is calculated and collected by local authorities after a business rate multiplier is applied to rateable values. For the financial year 2012/13, the business rate multiplier is set by the Department for Communities and Local Government at 0.458[15]. Application of the business rate multiplier results in a final business rates bill of some £9m for businesses in the vicinity of London Luton Airport. A detailed breakdown of this estimate by specific post codes is provided in Table 7.9.

Table 7-9: Rateable value of commercial premises within London Luton Airport

Postcode	Draft Rateable Values as of 2012
LU2 9NH	£321,400
LU2 9QH	£121,000
LU2 9NL	£557,250
LU2 9LU	£17,888,125
LU2 9PD	£50,500
LU2 9EX	£237,300
LU2 9LX	£14,250
LU2 9LY	£105,000
LU2 9NQ	£3,400
LU2 9NW	£797,500

[15]http://www.voa.gov.uk/rli/static/HelpPages/English/help/help022-about_the_business_rate_multiplier.html

LU2 9NY	£58,500
LU2 9NZ	£281,000
LU2 9PE	£161,750
Total	£20,596,975
Business Rate Multiplier	0.458
Business Rates Bill	£9,433,415

Source: Valuation Office Agency (2012)

7.3.4 Air Passenger Duty

Air Passenger Duty (APD) is levied by the UK Government, and collected by the carrier or agent issuing the ticket and charged to the customer at the time of ticket purchase. The data on APD has been estimated by the Airport. It is based on the number of departing passengers broken down by categories for distance travelled, and on the charges for each category. Table 7.10 presents a detailed breakdown of APD incurred by passengers at the Airport in 2011-12. Approximately £74 million was generated for central government through this tax. The value of APD generated at LLA has decreased since the 2009 impact assessment was conducted. The reason for this is that APD was restructured in 2009.

Table 7-10: Annual Air Passenger Duty estimated by London Luton Airport (2012)

Airline Category	Air Passenger Duty per Passenger (£)	Number of departure passengers	Air Passenger Duty (£millions)
Band A (0 - 2,000 miles)	**£13**	**4,908,613**	**63.81**
Band B (2,001 – 4000 miles)	**£65**	**155,624**	**10.12**
Total	**-**	**5,064,237**	**73.93**

Source: London Luton Airport Operations Ltd (LLAOL)

In summary, combining the taxes from businesses and wages, the business rates and the APD shows the operations of the Airport supports an annual income of £215 million for central and local government functions.

Table 7-11: Annual Government Income generated from London Luton Airport (millions)

Direct government income	
Taxes from Businesses	£42.85
Taxes on wages (including Social Security)	£88.41
Business Rates	£9.43
Air Passenger Duty	£73.93
Total	**£214.61**

Source: Valuation Office Agency (2012), BRES (2011), Experian (2012), Halcrow (2012) London Luton Airport Operations Ltd (LLAOL)

7.4 Summary

Combining the total income injection (Table 7.6) with the total government revenue (Table 7.11) produces the annual economic value of the Airport. **It is estimated that the Airport generates an annual economic value of approximately £1.0 billion (see Table 7.12).**

Table 7-12: Estimated economic value of London Luton Airport to the regional economy (millions)

Direct income Injection	
Wages and salaries of workers (excluding tax and NI)	£245.46
Direct business expenditure	£338.74
Direct profits accountable to the local economy	£8.76
Composite Multiplier Effect	£195.68
Direct Government Income	
Taxes from Businesses	£42.85
Taxes on wages (including Social Security)	£88.41
Business Rates	£9.43
Air Passenger Duty	**£73.93**
Annual Economic Value of Luton Airport	**£1,003.25**

Source: Valuation Office Agency (2012), BRES (2011), Experian (2012), Halcrow (2012) London Luton Airport Operations Ltd (LLAOL)

8 Economic Assessment of Proposals

8.1 Introduction

This chapter presents the estimated economic impacts of the proposals, both during the construction and operational phases.

The chapter is structured in two key sections. These are:

- The employment and economic impact from the construction phase (2014-2023); and
- The employment and economic impact of the operations phase in 2028.

8.2 Methodological considerations

At the operational stage the assessment has been largely calculated on the same basis as the current economic value that was presented in Chapter 7 with some additional considerations. The modelling has been based upon 17.8mppa in 2028. Whilst construction work is planned to be completed by 2023, it will take time for passenger numbers to build up and reach a peak of 17.8 mppa. Therefore the future impact year that has been used for the assessment is 2028 by which time the growth in air passenger numbers is forecast to reach 17.8mppa.

In order to compare the value of the planned proposals, a comparison has been made with the situation that would occur if the proposals did not go ahead: referred to as the base case scenario. The advice from the Airport is that the use of additional physical capacity is limited by the schedules of the airlines and the need to retain current customer experiences. Nevertheless, the base case scenario is predicted to result in an increase in air passenger movements (to 12.4mppa) and an increase in employment at the Airport (to 11,050) by 2028. This scenario has also been assumed in the Environmental Statement.

The impacts of the proposals and associated growth have been calculated by subtracting the base case economic impact of the Airport operations from the total economic value with development in 2028

The following assumptions have been made in the calculations for the operational impact:

- A sectoral breakdown of employment at the Airport for each scenario is taken directly from Halcrow's employment modelling exercise;

- No account has been taken of the effect of inflation, (i.e. average employee remuneration and per capita output for all industrial classifications in 2028 are expressed in current price levels (2012);
- Levels of pre-tax profits, tax payable on profits, VAT and employer's National Insurance Contributions as a percentage of business turnover in 2028 will be same as those currently achieved by businesses at the Airport;
- Personal income tax rates and the level of employees' National Insurance Contributions are the same as current levels;
- The composite multiplier effect for operations of the Airport in 2028 is assumed to be same as for the current estimates;
- The rateable values of commercial properties within the direct on-site and direct off-site boundaries of the Airport in 2028 are identical to current rates; and
- The per capita rates of Air Passenger Duty for domestic, EEA and other international destinations for 2028 (at 2012 prices).

8.3 Construction Impact

The main impact during the construction phase is likely to be employment related to the development. Given their scope, the proposals will lead to the creation of significant new full time and part time construction jobs during the construction phase.

The estimate of construction related employment has been derived from the total construction costs. The construction cost estimate is £105 million[16]. It has not been possible to source a development cost breakdown for the application site detailing the proportion of costs attributable to labour costs and without this information the estimation of the number of construction jobs can not be verified.

Therefore due to data limitations, the number of gross new construction jobs has been calculated according to the total construction cost of the

[16] This figure has been assumed for the purposes of the assessment. However, it may fluctuate.

development proposals and the average output per employee in the construction industry (based on Annual Business Survey, 2011). Further, application of a composite multiplier of 1.33 will capture induced and indirect construction employment resulting from the development proposals. Using these inputs, Table 8.1 calculates the number of gross new construction jobs at 100 Full Time Equivalents (FTEs).

Table 8.1: Construction Impacts

Stage	Construction related impact	Quantity
A	Cost of Construction	£105,000,000
B	Average annual output per employee in construction industry	£104,000
C (B x10)	Average output per FTE[17] in construction industry	£1,400,000
D (A / C)	Direct construction jobs created	75
E	Composite multiplier effect	33%
F (D x E)	Indirect and induced jobs created	25
G (D + F)	Total jobs created	100

Source: English Partnerships; LLAOL

[17] FTE is assumed to represent an employment opportunity lasting for ten years

8.4 Operational Impacts

This section presents the economic impact during the operational stage when the construction is complete and the Airport has reached 17.8 mppa.

8.4.1 Impact on Employment

The impact on employment has been based on LLAOL's assumption that the proposals will increase passenger numbers from 9.5 mppa in 2011 to 12.4 mppa in 2028 in the "do nothing" base case scenario and 17.8 mppa with development. Halcrow's employment modelling exercise assessed the impact of air passenger movements on employment and found that when the Airport reaches 12.4 mppa, gross direct employment supported in the Core Impact Area will be 11,050. When the Airport reaches 17.8 mppa, gross direct employment supported increases to 13,350. These employment figures are presented in Table 8.2.

Table 8.2: Project Gross Employment, by sector and scenario

Industry (Grouping of Standard Industrial Classifications)	Current Scenario (2012)	Base case Scenario (2028)	Development Scenario (2028)
Agriculture, Fishing and Mining	0	0	0
Extraction, Mining, Quarrying	0	0	0
Manufacturing	1,350	1,650	2,000
Electricity, Gas, Water supply and Recycling	0	0	0
Construction	0	0	0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	750	1,000	1,200
Hotels, Restaurants and Leisure	300	450	550
Air Transport and Supporting Activities (including Training)	3,550	5,050	6,100
Other transport, storage and communication	1,550	2,250	2,700
Business Services, Public Administration and Other Services (including Health Services)	750	650	800
Total Employment	8,250	11,050	13,350

Source: Halcrow (2012), LLAOL

The employment figures indicate an increase in gross direct Airport related employment in the region of 2,800 by 2028, even without development. Once

the development proposals are included, the impact is projected to be in the order of a further 2,300 new FTE jobs.

8.5 Income injection into the local economy – Base case Scenario

8.5.1 Wages and Salaries

The projected gross employment figure above of 11,050, which was generated from Halcrow's employment modelling on the impact of passenger increases on Airport employment, has been used to inform the wages and salaries of workers. Annual per capita employee remuneration for the industrial classifications presented in the table below were originally derived from Experian's 2012 National Business Database results for on-site and off-site businesses at the Airport.

Total annual employee remuneration, including income tax and employees' contribution to National Insurance, for future workers at the Airport under the "do nothing" base case scenario is estimated to be £453 million. The injection into the local economy will be exclusive of tax and NI contributions, which are estimated at £120 million per annum. The direct injection in to the local economy by wages and salaries is £332 million.

Table 8.3: Wages and salaries

Industry (Grouping of Standard Industrial Classifications)	LLA Employment by Sector	Average Wage Rate for LLA businesses (Experian and Annual Survey of Hours and Earnings)	Total Employee Remuneration £million
Agriculture, Fishing and Mining	-	£0	£0
Extraction, Mining, Quarrying	-	£0	£0
Manufacturing	1,650	£43,382	£71.58
Electricity, Gas, Water supply and Recycling	-	£0	£0
Construction	-	£40,663	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	1,000	£18,123	£18.12
Hotels, Restaurants and Leisure	450	£15,329	£6.90
Air Transport and Supporting Activities (including Training)	5,050	£49,260	£248.77
Other transport, storage and communication	2,250	£39,856	£89.67
Business Services, Public Administration and Other Services (including Health Services)	650	£27,272	£17.73
Total (including tax and NI)			**£452.77**
Total (excluding tax and NI)			**£332.38**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.5.2 Direct business expenditure

Direct expenditure is a key component of the overall income injection of the Airport operations. It has been calculated based on:

- The sectoral split of future employment estimate as shown in Table 8.4.
- The annual per capita turnover split by the Standard Industrial Classifications, this is presented in Table 8.4. The data is based on Experian's 2012 National Business Database.

The future employment levels have been multiplied by the average turnover per employee. This has been expressed in 2012 prices. Future inflation has not been accounted for. The analysis suggests that businesses at the Airport will generate an annual turnover of approximately £2.65 billion in 2028, under the "do nothing" base case scenario.

Table 8.4: Business Turnover

Industry (Grouping of Standard Industrial Classifications)	LLA Employment by Sector	Average Turnover Per Employee for LLA businesses	Total Turnover (millions)
Agriculture, Fishing and Mining	-	£0	£0
Extraction, Mining, Quarrying	-	£0	£0
Manufacturing	1,650	£127,384	£210.18
Electricity, Gas, Water supply and Recycling	-	£0	£0
Construction	-	£149,295	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	1,000	£171,987	£171.99
Hotels, Restaurants and Leisure	450	£54,790	£24.66
Air Transport and Supporting Activities (including Training)	5,050	£391,575	£1,977.45
Other transport, storage and communication	2,250	£73,053	£164.37
Business Services, Public Administration and Other Services (including Health Services)	650	£157,918	£102.65
Total	**11,050**		**£2,651.30**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

To calculate the projected direct business expenditure injection in to the local economy business turnover needs to be adjusted to exclude profits, taxes and remunerations.

Experian's National Business Database (2012) calculates pre-tax profits at £78 million, based on the average pre tax profit margin for a sample of businesses at the Airport. The margin has been estimated to be 2.9% of business turnover.

Contributions paid by businesses towards Employers National Insurance and VAT have been estimated at £35 million, or 1.3% of business turnover for a sample of businesses at the Airport (based on Experian's National Business Database (2012)).

To avoid double counting, wages and salaries for workers have been deducted to approximate the value of business expenditure incurred by organisations at the Airport. Pre tax profits and taxes have also been deducted.

As discussed in Chapter 7, data sourced from the Annual Business Survey suggests that the ratio of business turnover to GVA within the air transport sector is 22%. In this context, 22% of business expenditure by businesses at the Airport can be accounted as direct income injection into the local economy. Therefore, the future annual direct business expenditure in to the local economy in 2028 under the "do nothing" base case scenario is estimated at £464 million (Table 8.5).

Table 8-5: Direct business expenditure, £ million

Turnover of businesses at Luton Airport	**£2,651.30**
Average Pre Tax profit margin of sample businesses at LLA as a % business turnover (for which information is available)	2.9%
Pre tax profit for businesses at Luton Airport	£77.87
Total employee remunerations of workers at Luton Airport	£452.77
Average Social Security and VAT as a % of business turnover for sample businesses at Luton Airport	1.3%
Employers contribution to Social Security and VAT	£34.57

Business Expenditure (excluding employee remuneration profit and taxes)	£2,086.09
% of business activities of firms at Luton Airport that are within the core catchment area	22%
Direct Business Expenditure in the local economy	**£463.96**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.5.3 Direct profits

The future combined annual pre tax profit of businesses at the Airport in 2028 under the "do nothing" base case scenario is estimated at £78 million (see table 8.6). Data from Experian's National Business Database showed that the average level of corporation tax paid by a sample of businesses at the Airport represented 0.9% of their annual turnover. Table 8.6 shows that applying this percentage to all businesses at the Airport produces an estimate of total corporation tax of £24 million. Deducting these taxes from pre-tax profits provides an estimate for retained profits of £54 million. However, earlier analysis about the proportion of business expenditure occurring within the core impact area suggests that only 22% of these retained profits can be considered as GVA contribution to the local economy. Therefore, as shown in Tables 8.6, the direct income injection from direct profits is estimated to be £12 million.

Table 8.6: Direct profits, £ million

Approximate Pre Tax Profit generated at Luton Airport	**£77.87**
Average tax on profit as a % of turnover by businesses (for which information is available)	0.9%
Approximate Tax payable on profit generated at Luton Airport	£24.01
Retained profits for businesses at Luton Airport	£53.86
Direct profits accountable to the local economy	**£11.98**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.5.4 Multiplier Effects

Applying the composite multiplier of 1.33 to annual estimates for direct business expenditure and direct profits accountable to the local economy, suggests an annual economic value of £267 million for the supply chain effect and induced effects of business operations at the Airport.

The table below presents the summary of total income injection in to the local economy that is projected to be generated by the Airport's employees and businesses in 2028 under the "do nothing" base case scenario. In total it is estimated that the future economic value of the Airport to the local economy will be £1.08 billion per annum.

Table 8.7: Total income injection in to local economy (£ millions)

Wages and salaries of workers (excluding tax and NI)	£332.38
Direct business expenditure	£463.96
Direct profits accountable to the local economy	£11.98
Supply chain multiplier effect (indirect effect)	£266.75
Total income injection	**£1,075.07**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.6 Government Revenues – Base case Scenario

The government revenues component includes income for central and local government from the Airport's operations, e.g. business and personal taxes on the income generated by firms and workers. It also includes business rates payable by firms and Airport tax incurred from passengers.

8.6.1 Taxes paid by businesses

Table 8.8 below provides estimates of corporation tax, employer's National Insurance contributions, and VAT respectively. The combined value of these taxes is estimated at £59 million.

Table 8.8: Taxes paid by businesses, £ millions

Tax on profits / Corporation tax	£24.01
Employers contribution to Social Security and VAT	£34.57
Taxes paid by businesses at Luton Airport annually	**£58.58**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.6.2 Taxes paid by workers

Table 8.9 shows that applying the rate bands for income tax and employees National Insurance contributions suggest the tax payable by workers at the Airport in 2028 under the "do nothing" base case scenario will be approximately £120 million.

Table 8.9: Tax paid by Workers

Industry (Grouping of Standard Industrial Classifications)	LLA Employment	Per capita annual National Insurance	Per capita annual income tax	Total tax on wages and salaries (millions)
Agriculture, Fishing and Mining				
Extraction, Mining, Quarrying				
Manufacturing	1,650	£4,185	£7,233	£18.84
Electricity, Gas, Water supply and Recycling				
Construction	-	£3,969	£6,511	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	1,000	£1,261	£2,003	£3.26
Hotels, Restaurants and Leisure	450	£852	£1,444	£1.03
Air Transport and Supporting Activities (including Training)	5,050	£4,320	£9,587	£70.23
Other transport, storage and communication	2,250	£3,870	£6,349	£22.99
Business Services, Public Administration and Other Services (including Health Services)	650	£2,362	£3,833	£4.03
Total	**11,050**			£120.39

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.6.3 Business Rates

The current rateable value for properties at the Airport area is estimated to be approximately £21 million. This is assumed to remain constant through to 2028 under the "do nothing" base case scenario. Application of the business rate multiplier results in a final business rates bill of some £9m for businesses in the vicinity of London Luton Airport. A detailed breakdown of this estimate by specific post codes is provided in Table 8.10.

Table 8.10: Rateable value of commercial premises within London Luton Airport

Postcode	Draft Rateable Values as of 2012
LU2 9NH	£321,400
LU2 9QH	£121,000
LU2 9NL	£557,250
LU2 9LU	£17,888,125
LU2 9PD	£50,500
LU2 9EX	£237,300
LU2 9LX	£14,250
LU2 9LY	£105,000
LU2 9NQ	£3,400
LU2 9NW	£797,500
LU2 9NY	£58,500
LU2 9NZ	£281,000
LU2 9PE	£161,750
Total	£20,596,975
Business Rate Multiplier	0.458
Business Rates Bill	£9,433,415

Source: Valuation Office Agency (2012)

8.6.4 Air Passenger Duty

The estimated APD for the base case scenario was obtained directly from the Airport in today's prices. The table below presents a detailed breakdown of air passenger tax that would be incurred by passengers at the Airport in 2028 under the "do nothing" base case scenario. Approximately £96 million would be generated for central government through this tax.

Table 8.11: Estimated Annual Air Passenger Duty generated at London Luton Airport in 2028 (in 2012 prices)

Airline Category	Air Passenger Duty per Passenger (£)	Number of departure passengers	Air Passenger Duty (£ million)
Band A (0 - 2,000 miles)	£13	5,972,471	£77,642,124
Band B (2,001 – 4000 miles)	£65	282,018	£18,331,157
Total		6,254,489	£95,973,281

Source: LLAOL (2012)

8.6.5 Summary: Government Income

The operations of the Airport in 2028 under the "do nothing" base case scenario, will support an annual income of £284 million for central and local government functions, as shown in Table 8.12.

Table 8-12: Annual Government Income generated from Luton Airport (£ millions)

Direct government income	
Taxes from Businesses	£58.58
Taxes on wages (including Social Security)	£120.39
Business Rates	£9.43
Air Passenger Duty	£95.97
Total	**£284.37**

Source: LLAOL (2012), Valuation Office Agency (2012), BRES (2011), Experian (2012) and Halcrow (2012)

8.7 Summary of Base case Scenario

This section has presented an assessment of the economic value of the Airport in 2028 under the "do nothing" base case scenario. **The total projected annual economic value of the Airport in 2028 is £1.36 billion. This represents an increase in economic value of £356m compared to the current value of London Luton Airport.** Table 8.13 presents a breakdown of the key components of this figure. The first component of the economic value is the direct annual income injection into the local economy, this is projected to be £808 million in 2028. This income injection will indirectly create a further annual economic value of £267 million as a result of supply chain and induced income multiplier effects. The second component, government revenue of the operation of the Airport in 2028 is projected to be £284 million.

Table 8.13: Annual Economic Value £ millions (2028)

Direct income injection to the local economy	
Wages and salaries of workers (excluding tax and NI)	£332.38
Direct business expenditure	£463.96
Direct profits accountable to the local economy	£11.98
Sub Total	**£808.33**
Composite multiplier effect	£266.75
Direct government income	
Taxes from Businesses	£58.58
Taxes on wages (including Social Security)	£120.39
Air Passenger Duty	£95.97
Business Rates	£9.43
Sub Total	**£284.37**
Total Value of the Airport	**£1,359.45**

Source: LLAOL (2012), Valuation Office Agency (2012), BRES (2011), Experian (2012) and Halcrow (2012)

8.8 Income injection into the local economy – Development Scenario

8.8.1 Wages and Salaries

The projected gross employment figure for the development scenario is 13,350. This estimate represents the impact of passenger increases on airport employment and has been used to inform the wages and salaries of workers. Annual per capita employee remuneration for the industrial classifications presented in the table below were originally derived from Experian's 2012 National Business Database results for on-site and off-site businesses at the Airport.

Total annual employee remuneration, including income tax and employees' contribution to National Insurance, for future workers at the Airport under the development scenario is estimated to be £547 million. The injection into the local economy will be exclusive of tax and NI contributions, which are estimated at £145 million per annum. The direct injection in to the local economy by wages and salaries is £401 million.

Table 8.14: Wages and salaries

Industry (Grouping of Standard Industrial Classifications)	LLA Employment by Sector	Average Wage Rate for LLA businesses (Experian and Annual Survey of Hours and Earnings)	Total Employee Remuneration £million
Agriculture, Fishing and Mining	-	£0	£0
Extraction, Mining, Quarrying	-	£0	£0
Manufacturing	2,000	£43,382	£86.76
Electricity, Gas, Water supply and Recycling	-	£0	£0
Construction	-	£40,663	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	1,200	£18,123	£21.75
Hotels, Restaurants and Leisure	550	£15,329	£8.43
Air Transport and Supporting Activities (including Training)	6,100	£49,260	£300.49
Other transport, storage and communication	2,700	£39,856	£107.61
Business Services, Public Administration and Other Services (including Health Services)	800	£27,272	£21.82
Total (including tax and NI)			**£546.86**
Total (excluding tax and NI)			**£401.47**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.8.2 Direct business expenditure

Direct expenditure is a key component of the overall income injection of the Airport operations. It has been calculated based on:

- The sectoral split of future employment estimate as shown in Table 8.15.
- The annual per capita turnover split by the Standard Industrial Classifications, this is presented in Table 8.15. The data is based on Experian's 2012 National Business Database.

The future employment levels have been multiplied by the average turnover per employee. This has been expressed in 2012 prices. Future inflation has not been accounted for. The analysis suggests that businesses at the Airport will generate an annual turnover of approximately £3.20 billion in 2028, under the development scenario.

Table 8.15: Business Turnover

Industry (Grouping of Standard Industrial Classifications)	LLA Employment by Sector	Average Turnover Per Employee for LLA businesses	Total Turnover (millions)
Agriculture, Fishing and Mining	-	£0	£0
Extraction, Mining, Quarrying	-	£0	£0
Manufacturing	2,000	£127,384	£254.77
Electricity, Gas, Water supply and Recycling	-	£0	£0
Construction	-	£149,295	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	1,200	£171,987	£206.38
Hotels, Restaurants and Leisure	550	£54,790	£30.13
Air Transport and Supporting Activities (including Training)	6,100	£391,575	£2,388.61
Other transport, storage and communication	2,700	£73,053	£197.24
Business Services, Public Administration and Other Services (including Health Services)	800	£157,918	£126.33
Total	**13,350**		**£3,203.47**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

To calculate the projected direct business expenditure injection in to the local economy business turnover needs to be adjusted to exclude profits, taxes and remunerations.

Experian's National Business Database (2012) calculates pre-tax profits at £94 million, based on the average pre tax profit margin for a sample of businesses at the Airport. The margin has been estimated to be 2.9% of business turnover.

Contributions paid by businesses towards Employers National Insurance and VAT have been estimated at £42 million, or 1.3% of business turnover for a sample of businesses at the Airport (based on Experian's National Business Database (2012)).

To avoid double counting, wages and salaries for workers have been deducted to approximate the value of business expenditure incurred by organisations at the Airport. Pre tax profits and taxes have also been deducted.

As discussed in section Chapter 7, data sourced from the Annual Business Survey suggests that the ratio of business turnover to GVA within the air transport sector is 22%. In this context, 22% of business expenditure by businesses at the Airport can be accounted as direct income injection into the local economy. Therefore, the future annual direct business expenditure in to the local economy in 2028 under the development scenario is estimated at £561 million (Table 8.16).

Table 8-16: Direct business expenditure, £ million

Turnover of businesses at Luton Airport	£3,203.47
Average Pre Tax profit margin of sample businesses at LLA as a % business turnover (for which information is available)	2.9%
Pre tax profit for businesses at Luton Airport	£94.09
Total employee remunerations of workers at Luton Airport	£546.86
Average Social Security and VAT as a % of business turnover for sample businesses at Luton Airport	1.3%
Employers contribution to Social Security and VAT	£41.77
Business Expenditure (excluding employee remuneration profit and taxes)	£2,520.76
% of business activities of firms at Luton Airport that are within the core catchment area	22%
Direct Business Expenditure in the local economy	**£560.64**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.8.3 Direct profits

The future combined annual pre tax profit of businesses at the Airport in 2028 under the development scenario is estimated at £94 million (see table 8.17). Data from Experian's National Business Database showed that the average level of corporation tax paid by a sample of businesses at the Airport represented 0.9% of their annual turnover. Table 8.17 shows that applying this percentage to all businesses at the Airport produces an estimate of total corporation tax of £29 million. Deducting these taxes from pre-tax profits provides an estimate for retained profits of £65 million. However, earlier analysis about the proportion of business expenditure occurring within the core impact area suggests that only 22% of these retained profits can be considered as GVA contribution to the local

economy. Therefore, as shown in Tables 8.17, the direct income injection from direct profits is estimated to be £14 million.

Table 8.17: Direct profits, £ million

Approximate Pre Tax Profit generated at Luton Airport	£94.09
Average tax on profit as a % of turnover by businesses (for which information is available)	0.9%
Approximate Tax payable on profit generated at Luton Airport	£29.01
Retained profits for businesses at Luton Airport	£65.07
Direct profits accountable to the local economy	**£14.47**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.8.4 Multiplier Effects

Applying the composite multiplier of 1.33 to annual estimates for direct business expenditure and direct profits accountable to the local economy, suggests an annual economic value of £322 million for the supply chain effect and induced effects of business operations at the Airport.

8.8.5 Summary of income injection for development scenario

The table below presents the summary of total income injection in to the local economy that is projected to be generated by the Airport's employees and businesses in 2028 under the development scenario. In total it is estimated that the future economic value of the Airport to the local economy will be £1.30 billion per annum.

Table 8.18: Total income injection in to local economy (millions)

Wages and salaries of workers (excluding tax and NI)	£401.47
Direct business expenditure	£560.64
Direct profits accountable to the local economy	£14.47
Supply chain multiplier effect (indirect effect)	£322.27
Total income injection	**£1,298.85**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

Subtracting the income generated in the base case scenario from the development case reveals that a total of £224m income can be attributed to the planned developments at the Airport

Table 8.19 Impact of planned developments on income injected into the local economy

Development forecast		Base case forecast		Income injection attributable to the planned developments
£1,299 million	–	£1,075 million	=	£224 million

Source Halcrow 2012

8.9 Government Revenues – Development Scenario

The government revenues component includes income for central and local government from the Airport's operations, e.g. business and personal taxes on the income generated by firms and workers. It also includes business rates payable by firms and airport tax incurred from passengers.

8.9.1 Taxes paid by businesses

Table 8.20 below provides estimates of corporation tax, employer's National Insurance contributions, and VAT respectively. The combined value of these taxes is estimated at £71 million.

Table 8.20: Taxes paid by businesses, £ millions

Tax on profits / Corporation tax	£29.01
Employers contribution to Social Security and VAT	£41.77
Taxes paid by businesses at Luton Airport annually	**£70.78**

Source: BRES (2011), Experian (2012) and Halcrow (2012)

8.9.2 Taxes paid by workers

Table 8.21 shows that applying the rate bands for income tax and employees National Insurance contributions suggest the tax payable by workers at the Airport in 2028 under the development scenario will be approximately £145 million.

Table 8.21: Tax paid by Workers

Industry (Grouping of Standard Industrial Classifications)	LLA Employment	Per capita annual National Insurance	Per capita annual income tax	Total tax on wages and salaries (millions)
Agriculture, Fishing and Mining				
Extraction, Mining, Quarrying				
Manufacturing	2,000	£4,185	£7,233	£22.84
Electricity, Gas, Water supply and Recycling				
Construction	-	£3,969	£6,511	£0
Wholesale, Retail and Repair of motor vehicles, motorcycles and personal and household goods	1,200	£1,261	£2,003	£3.92
Hotels, Restaurants and Leisure	550	£852	£1,444	£1.26
Air Transport and Supporting Activities (including Training)	6,100	£4,320	£9,587	£84.83
Other transport, storage and communication	2,700	£3,870	£6,349	£27.59
Business Services, Public Administration and Other Services (including Health Services)	800	£2,362	£3,833	£4.96
Total	**13,350**			**£145.39**

erian (2012) and Halcrow (2012)

8.9.3 Business Rates

The current rateable value for properties at the Airport area is estimated to be approximately £21 million. This is assumed to remain constant through to 2028 under the development scenario. Application of the business rate multiplier results in a final business rates bill of some £9m for businesses in the vicinity of London Luton Airport. A detailed breakdown of this estimate by specific post codes is provided in Table 8.22.

Table 8-22: Rateable value of commercial premises within London Luton Airport

Postcode	Draft Rateable Values as of 2012
LU2 9NH	£321,400
LU2 9QH	£121,000
LU2 9NL	£557,250
LU2 9LU	£17,888,125
LU2 9PD	£50,500
LU2 9EX	£237,300
LU2 9LX	£14,250
LU2 9LY	£105,000
LU2 9NQ	£3,400
LU2 9NW	£797,500
LU2 9NY	£58,500
LU2 9NZ	£281,000
LU2 9PE	£161,750
Total	£20,596,975
Business Rate Multiplier	0.458
Business Rates Bill	£9,433,415

Source: Valuation Office Agency (2012)

8.9.4 Air Passenger Duty

APD is levied by the UK Government, and collected by the carrier or agent issuing the ticket and charged to the customer at the time of ticket purchase. The estimated APD was obtained directly from the Airport in today's prices. The table below presents a detailed breakdown of air passenger tax that would be incurred by passengers at the Airport in 2028 under the development scenario. Approximately £135 million would be generated for central government through this tax.

Table 8.23: Estimated Annual Air Passenger Duty generated at London Luton Airport in 2028 (in 2012 prices)

Airline Category	Air Passenger Duty per Passenger (£)	Number of departure passengers	Air Passenger Duty (£ million)
Band A (0 - 2,000 miles)	£13	8,546,544	£111,105,077
Band B (2,001 – 4000 miles)	£65	373,931	£24,305,535
Total		**8,920,476**	**£135,410,612**

Source: LLAOL (2012)

8.9.5 Summary of Government Income for Development Scenario

The operations of the Airport in 2028 under the development scenario will support an annual income of £361 million for central and local government functions, as shown in Table 8.24.

Table 8-24: Annual Government Income generated from Luton Airport (£ millions)

Direct government income	
Taxes from Businesses	£70.78
Taxes on wages (including Social Security)	£145.39
Business Rates	£9.43
Air Passenger Duty	£135.41
Total	**£361.02**

Source: LLAOL (2012), Valuation Office Agency (2012), BRES (2011), Experian (2012) and Halcrow (2012)

In order to identify the government income that would be attributable to the planned developments the government income generated by the base case scenario has been subtracted from the development scenario. This shows that a total of £77 million would be attributable to the planned developments at the Airport.

Table 8.25 Impact of planned developments on government revenues

Development forecast		Base case forecast		Government revenue attributable to the planned developments
£361 million	–	**£284 million**	=	**£77 million**

8.10 Chapter Summary

This chapter has presented an assessment of the economic impact of the development proposals and the projected associated growth of the Airport as a result of both the base case scenario and the development scenario. Table 8.26 presents the forecasts for the economic value in the base case and the development scenarios and the growth attributable to the planned developments. The first component of the economic value is the direct annual income injection into the local economy; this is projected to be £1.3 billion in 2028 under the development scenario. Of which 322 million would be generated through supply chain and induced income effects. **A total of £224 million is attributable to the growth planned with the development proposals.**

The second component, government revenue of the operation of the Airport in 2028 is projected to be £361 million under the development scenario. **Of which £77 million is attributable to the growth planned with these proposals.**

The total projected annual economic value of the Airport in 2028 as a result of the "do nothing" base case scenario is £1.36 billion. The total projected annual economic value of the Airport in 2028 as a result of the development scenario is £1.66 billion. The difference in projected economic value between the base case and development scenarios is £300m. This value is attributable to the application proposals and the associated planned passenger growth.

Table 8.26: Annual Economic Value £ millions (2028)

Direct income injection to the local economy			
Scenario	Development Case	Base case Case	Difference
Wages and salaries of workers (excluding tax and NI)	£401.47	£332.38	£69.08
Direct business expenditure	£560.64	£463.96	£96.67
Direct profits accountable to the local economy	£14.47	£11.98	£2.49
Sub Total	**£976.58**	**£808.33**	**£168.25**
Composite multiplier effect	**£322.27**	**£266.75**	**£55.52**
Direct government income			
Taxes from Businesses	£70.78	£58.58	£12.20
Taxes on wages (including Social Security)	£145.39	£120.39	£25.01
Air Passenger Duty	£135.41	£95.97	£39.44
Business Rates	£9.43	£9.43	£0
Sub Total	**£361.02**	**£284.37**	**£76.65**
Total Value of the Airport	**£1,659.87**	**£1,359.45**	**£300.42**

Source: LLAOL (2012), Valuation Office Agency (2012), BRES (2011), Experian (2012) and Halcrow (2012)

9 Qualitative Assessment of the Proposals

This chapter presents a qualitative assessment of the economic impacts of the proposals. It is structured in two sections. Firstly it presents the significance of impact of the proposals using the standard criteria set out for conducting Environmental Impact Assessments (EIAs). Secondly it presents the contributions of the proposals to national and local policy.

9.1 Significance of the Impacts:

This section presents an assessment of the significance of the impact of the proposals using the impact significance criteria that are widely used for conducting EIAs. The assessment has been carried out as a qualitative assessment based on available knowledge and professional judgment. In these circumstances the following generic approach to predicting significant effects has been developed with reference to relevant guidance.

There are three components to the impact criteria. The first assesses the level of importance/sensitivity of the project. The second component assesses the magnitude of its impact in terms of whether they are negative or beneficial impacts. The third identifies the significance of the impact of the project by combining the importance/sensitivity of the project with the magnitude of the impact.

9.1.1 Stage 1: Determining the importance/sensitivity of the resources/receptor

Receptors likely to be affected by the development proposals have been identified within the defined study area. The importance and/or sensitivity of the identified receptor/resource has then been determined using the following terminology:

- High sensitivity/importance;
- Medium sensitivity/importance;
- Low sensitivity/importance; and
- Negligible sensitivity/importance.

9.1.2 Stage 2: Magnitude/nature of impact

The nature and characteristics of the impact were then established and described to enable the magnitude of impacts to be determined. The impacts have been quantified where possible and the known characteristics clearly stated.

The magnitude of the impact has been assessed against the following scale:

Table 9.1: Magnitude Scale

Major	considerable impact (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards
Moderate	limited impact (by extent, duration or magnitude) which may nonetheless be considered significant in the context of the site and/or surrounding areas
Minor	slight, very short term or highly localised impact of no significant consequence
Negligible	an impact on a resource/receptor of insufficient magnitude to affect the use/integrity.

The nature of the impacts has been expressed as:

- Adverse – detrimental or negative impacts to a receptor; or
- Beneficial – advantageous or positive impact to a receptor.

Where adverse or beneficial impacts have been identified, these have been described as:

- short, medium or long-term;
- direct or indirect; and
- permanent or temporary.

In the context of the proposals, short to medium term impacts are generally considered to be those associated with the demolition and construction phase of the proposals. Long-term impacts relate to those issues that will have a lasting effect on the site and surrounding area once the proposed development is complete.

9.1.3 Stage 3: Significance of the effect

The assessment of significance is based on a combination of characteristics of the impact and the sensitivity of the receptor. The matrix set out in Table 9.2 has been used to determine the significance level of the environmental effect.

Table 9.2: Significance of the effect

		Importance of the Resource			
		High	Medium	Low	Negligible
Magnitude of Impact	Major adverse	Major significant effect	Moderate significant effect	Minor significant effect	Minor significant effect
	Moderate adverse	Moderate significant effect	Moderate significant effect	Minor significant effect	No significant effect
	Minor adverse	Minor significant effect	Minor significant effect	No significant effect	No significant effect
	Negligible	No significant effect	No significant effect	No significant effect	No significant effect
	Minor beneficial	Minor significant effect	Minor significant effect	No significant effect	No significant effect
	Moderate beneficial	Moderate significant effect	Moderate significant effect	Minor significant effect	No significant effect
	Major beneficial	Major significant effect	Moderate significant effect	Minor significant effect	Minor significant effect

The levels of significance effect (either beneficial or adverse) can be defined as follows:

Table 9.3: Significance of the effect

Major significant effect	Significant change leading to impacts of national or international importance. Likely to affect a large number of people on a permanent basis.
Moderate significant effect	Change leading to impacts of regional or local importance. Likely to affect a small number of people on a permanent basis.
Minor significant effect	Change leading to impacts of some local interest or importance. Likely to have a temporary impact on a small number of people.
No significant effect	Change that is unlikely to lead to impacts that effect either the local economy. Feature affected is of little interest or importance.

The significance has been assessed for several key aspects of the proposals at both the construction and operational stages.

1. At the construction stage the significance of the impact on employment and other impacts has been assessed;

2. At the operational stage, the significance of the employment impacts, the economic value impacts, and the wider economic impacts has been assessed.

The results of the assessment are presented in Table 9.4 and have been elaborated on in the following paragraphs.

Table 9.4: Significance of Predicted Impacts

	Stage 1	Stage 2		Stage 3
Receptor	**Importance/ sensitivity**	**Impact**	**Magnitude/ Nature**	**Significance**
Construction Impact: Employment	Medium sensitivity	Long term beneficial	Major	Moderate significant impact
Construction Impact: Other	Low sensitivity	Both benefits and disbenefits in the short term	Minor	Minor significant impact
Operational Impact: Employment	Major Importance	Beneficial - long term, direct and indirect, permanent	Major	Major Significant Effect
Operational Impact: Economic Value	Medium Importance	Beneficial – long term, direct and indirect, permanent	Moderate	Moderate Significant Effect
Wider Economic Impacts	Medium Importance	Beneficial – long term, direct and indirect, permanent	Moderate	Moderate Significant Effect

9.1.4 Qualitative Impacts of the Construction Phase

The construction stage of the proposals would have a moderate positive significant impact on employment in the Core Impact Area. It would be a short term positive impact creating construction jobs during the 2013 to 2023 period. It would have a minor significant impact on other construction related impacts such as government revenues and business disruption.

Extensive modelling would be required in order to establish the potential scale of the economic disbenefits from the construction phase. However, some main issues in relation to disruption that may be created and potential

mitigation measures have been explored, based on a review of the LLAOL Construction Programme and Draft Planning Application.

The dualling of the Airport access road will be 'off-line' and thus should minimise traffic delays during the construction period. However it is possible that there may be some traffic disruption resulting in increased journey times, vehicle operating costs and carbon emissions for vehicles using the road during the construction period. The main mitigation strategy for this would be to carry out as much of the construction work at night when the Airport is largely closed, although it may not be possible to avoid some disruption during the day.

It is unclear whether, during the construction period, the terminal and taxiway improvements will have any impact on the number of flights or passenger numbers or passenger experience at the Airport. For example there is a risk that there could be longer check-in queues, and it could take longer to taxi to and from the runway. However, works will be undertaken and phased so as to minimise any disruption.

9.1.5 Qualitative Impacts of the Operational Phase

At the operational stage, the impact on employment would be a major positive significant impact. The total new jobs that would be created by the development scenario (compared to the base case) are 2300. Based on current employment rates this would lead to an increase in the employment rate in the Core Impact Area by approximately 0.4%. This is a clear positive long term benefit of the improvements and Airport growth.

In terms of the impact on economic value, the application proposals and the associated growth will directly lead to a total of £300 million in economic value for the Core Impact Area and for government revenues. This again is a clear economic benefit and has been regarded as a positive moderate significant impact.

In addition, other impacts at the operational stage include impacts on traffic congestion and noise and air pollution. The almost doubling in the size of the Airport will significantly increase road traffic levels at, and around, the Airport. Modelling of the knock on impacts of this growth on the local road network has been undertaken in the Transport Assessment that accompanies this application. The impact of the road dualling has been assessed in the environmental impact assessment and the journey time disbenefits for existing traffic on roads around the Airport have been evaluated. The noise, air quality, road accident and carbon impacts have also been examined. A suggested mitigation strategy for this is set out in the Transport Assessment and Travel Plans.

9.2 Contribution of the proposals to policy priorities

This section looks at the contribution that the proposals would make to national planning and local policy and economic priorities. In terms of national level planning, the proposals would enable the Airport to grow in relation with nationally projected passenger growth. The Department for Transport's 2011 UK Aviation Forecasts identified that with constrained growth (without a new runway but with the option of new planning applications) the Airport could reach 15 mppa by 2030, and 17 mppa by 2050. The proposals also support to the Government's plans to increase investment in infrastructure as set out in the Government' Plan for Growth document. The proposals also support economic development creating much needed employment and income injection into the local economy and an increase in government revenues.

At the local level, the application proposals would support the objectives of the Regeneration Strategy and the Local Transport Plan. A large proportion of the jobs generated will be high value and will contribute to the local economy providing skilled jobs. This is particularly important for Luton which has suffered from a lack of highly skilled jobs in the employment market. The growth of the Airport would have a positive impact on regeneration of Luton's employment market, and would help fulfil the objectives set out by the Council in the Local Regeneration Strategy. These objectives include creating a modern and diversified economy, more jobs for all groups, and infrastructure for the 21st Century.

By enabling the Airport to expand to cater for an increase to 17.8 mppa, this would enable the opening up of new flight routes and would strengthen Luton's economy with a more connected Airport. It would help to create a positive environment for Luton to regenerate and supports the Luton Local Transport Plan's vision for a transport system that aids economic regeneration of Luton and the growth of the area. It will facilitate Luton's growth as an international gateway. The Local Enterprise Partnership has also identified the Airport as a key transport link.

The Luton Plan outlines that development at the Airport would be considered if it is Airport related; if it is aligned to the national and regional government aviation policies; if it does not have major environmental impacts and if it incorporates sustainable transportation measures, with an emphasis on promoting a modal shift towards public transport.

In terms of the environmental impact of the proposals, an extensive environmental impact assessment has been carried out to identify the scale of the environmental impacts and their mitigation where appropriate.

Opportunities for sustainable transportation within the proposed Airport improvements, in particular public transport, have been assessed in a full Transport Assessment and Travel Plan. This looks at a range of measures designed to build on the current public transport options available to passengers.

In summary, the proposals support policy at both the national and local levels.

10 Conclusion

This final chapter summarises the key employment and economic impacts of the current operation of London Luton Airport and the projected future impact of both the base case and development scenarios.

Employment assessment

The Airport currently at 9.5 mppa generates approximately 8,250 direct onsite and offsite jobs and 2,700 indirect and induced jobs. The employment model prepared for this report forecasts that if the Airport grows to the constrained base case projection of 12.4 mppa, direct employment would grow to approximately 11,050 jobs and indirect and induced employment would grow to 3,650 jobs. If the planned developments went ahead and the Airport grew to 17.8 mppa in 2028, direct employment generated by the Airport would reach 13,350 and indirect and induced employment would grow to 4,400 jobs. This would be a growth of 5,100 direct and 1,700 indirect and induced jobs since the present day.

The total direct employment that could be attributable to the planned developments is forecast to be 2300 jobs and the indirect and induced employment would be approximately 750 jobs.

The socio economic context data for Luton shows that the area faces the issue of a low skilled employment market and relatively low skilled workers. The growth of the Airport would create much needed high value jobs. It would also strengthen Luton's position as an international transport hub. This would help to create an enabling environment for economic regeneration in the area.

Economic assessment

The current overall economic impact of the operations of the Airport is £1 billion. The projected economic impact of the operations of the Airport for the base case scenario, where the Airport is projected to grow to 12.4 mppa in 2028, is projected to be £1.4 billion. If the planned developments went ahead and the Airport grew to 17.8 mppa by 2028 the economic impact of the Airport would be £1.7 billion. This is a growth of £700 million since the present day. An economic value of £300 million would be attributable to the planned developments.

Annex A: Table of Data Sources

Employment Assessment

Category	Variable	Source
TRAFFIC	ANNUAL PASSENGERS	CAA Airport statistics (historic); LLAOL forecasts (future)
	ANNUAL AIR TRAFFIC MOVEMENTS (ATMS)	
CARGO	CARGO TONNAGE	CAA Airport statistics (historic); LLAOL forecasts (future)
	SHARE OF TONNAGE THAT FLIES BY DEDICATED AIRCRAFT	
*PASSENGER /TRAFFIC CHARACTERISTICS	% PASSENGERS WHO ARE BUSINESS/LEISURE	CAA Airport statistics
	% PASSENGERS WHO ARE UK / FOREIGN RESIDENTS	
	% TRAFFIC WHICH IS DOMESTIC/INTERNATIONAL	
	% TRAFFIC WHICH IS NO FRILLS	CAA Bespoke Report
	% TRAFFIC WHICH IS SCHEDULED	CAA Airport statistics
SOCIO-ECONOMIC FACTORS	UK GDP GROWTH	ONS
	REGIONAL GVA	
	REGIONAL GROSS DOMESTIC HOUSEHOLD INCOME	
	AIR WAGES : LOCAL WAGES	Annual Survey of Hours and Earnings (ASHE) (ONS)
EMPLOYMENT	LOCAL EMPLOYMENT	Business Register and Employment Survey/ Annual Business Inquiry (BRES/ABI)

Category	Variable	Source
	REGIONAL POPULATION	Business Register and Employment Survey/ Annual Business Inquiry (BRES/ABI)

Economic Assessment

Model element	Data	Source	Date
Direct Income Injection to the Local Economy	Wages and salaries of workers (excluding income tax and employees contribution to NI)	Business Register and Employment Survey	2011
		Halcrow's Employment Modelling	2012
		Experian	2012
		Halcrow Payroll	2012
	Direct business expenditure	Business Register and Employment Survey	2011
		Halcrow's Employment Modelling	2012
		Experian	2012
		Annual Business Survey	2011
	Direct profits accountable to the local economy	Business Register and Employment Survey	2011
		Halcrow's Employment Modelling	2012
		Experian	2012
		Annual Business Survey	2011
Multiplier Effect	Composite Multiplier Effect	Halcrow's Employment Modelling	2012
Direct government income	Taxes from Businesses	Experian	2012
	Taxes on wages (including Social Security)	Experian	2012
		Halcrow Payroll	2012
	Air Passenger Duty	LLAOL	2012
	Business Rates	Valuation Office Agency	2012

Annex B: References

Bedfordshire and Luton Economic Development Partnership (2008) Bedfordshire and Luton Joint Economic Development Strategy

BIS (October 2009) BIS Occasional Paper Number 1 – Research to Improve the Assessment of Additionality

Communities and Local Government, July (2011) Draft National Planning Policy Framework

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Department for Transport (March 2011) Developing a Sustainable Framework for UK Aviation

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Gujarati, D and Porter D (2009) Basic Econometrics

HM Government (2010) The Coalition – Our Programme for Government

HM Treasury and Department for Business, Innovation and Skills (BIS) (March 2011) The Plan for Growth

HM Treasury November (2011) Autumn Statement

HM Treasury November (2011) National Infrastructure Plan

HM Treasury December (2012) National Infrastructure Plan Updated

Luton Borough Council (2001) Luton Plan 2001-2011

Luton Borough Council (2011) Luton Regeneration Strategy 2011

Luton Borough Council (2011) Luton Local Transport Plan 2011-2026

London Luton Airport Operations Limited (September 2012): Revised Masterplan Document Consultation Prior to Submission of Planning Application London's Local Airport

Halcrow and PACEC (2004) Employment and Housing Implications of an Extended or Replacement Runway at London Luton Airport: A Report Commissioned Jointly by East of England Development Agency and East of England Regional Assembly

South East Midlands Local Enterprise Partnership (LEP) (2012) Draft Business Plan

11 Annex C Employment Modelling

11.1 Introduction

This annex has three aims:

a) it describes the statistical tests that were carried out to test the robustness of the econometric model;
b) it presents the co-efficients and probability values for the low, mid and high estimates for historical airport employment; and
c) it discusses some key issues that were addressed in the modelling.

11.1.1 Statistical tests

The following statistical tests which were carried out during the modelling are described in detail here:

- Covariance in the explanatory variables
- Serial correlation test
- Panel unit root tests
- Variable t-statistics and p-values
- The Fixed Effects significance
- The variance of model residuals and
- Back casting

Test 1) Covariance in the explanatory variables

Covariance (or collinearity) is a measure of how the values of two or more explanatory variables in an econometric model change together. Where the magnitude of this change is significant, represented by a high correlation coefficient in the model, it demonstrates that the explanatory variables are not independent. The presence of covariance affects the predictive ability of the model as the coefficients and statistical significance levels of the independent variables are unstable and not necessarily statistically valid.

The covariance analysis we carried out concluded that the model should not contain certain pairs of variables due to their high correlation coefficient. In particular the air traffic variables are highly correlated and thus air traffic needed to be included in the model using one of the following options:

- Million workload units (Mwlu);
- Annual passengers;
- Annual ATMs;
- Passenger ATMs and Cargo ATMs;
- Scheduled & non-scheduled ATMs / pax ;or
- Frills and No-Frills ATMs / pax

Table C1 below identifies some pairs of highly correlated variables.

Table C1: Pairs of highly correlated variables

Variable 1	Variable 2	Correlation coefficient
UK GDP GROWTH	REGIONAL GVA GROWTH	0.96
CARGO TONNAGE	ANNUAL PAX	0.92
CARGO TONNAGE	CARGO ATMS	0.87
CARGO TONNAGE	PASSENGER ATMS	0.86
LOCAL POPULATION	AIR:LOCAL AVERAGE PAY	0.69
% PAX SCHEDULED	% PAX NO FRILLS	0.68
% PAX UK RESIDENTS	% PAX ON INTERNATIONAL FLIGHTS	-0.65
% FREIGHT BY DEDICATED ATM	PASSENGER ATMS	0.61

Using this analysis we were able to propose valid combinations of explanatory variables that explain historical employment levels. Importantly, the analysis highlighted that cargo tonnage cannot feature in a model with separate passenger traffic variables.

Test 2) Serial correlation test

The data was tested for the presence of serial correlation. Serial correlation occurs when the residuals or error terms (which represent those factors that also explain employment levels but have not been included as variables in the model) are correlated with each other over time causing errors in the model. The presence of serial correlation means that explanatory significance is incorrectly attributed to the explanatory variables in a model, resulting in an overestimate of the R2 value which is a measure of the model's overall explanatory power.

The Durbin-Watson test was used to assess whether there was any serial correlation in the data. The result of this test, the D-W test statistic, ranges from 0 to 4 with a statistic around 2 indicating that there is no serial correlation present.

Our low – mid employment and high employment functions had D-W statistics of 1.7 and 1.73 respectively. The proximity of these results to 2 indicates there is no first order serial correlation. Therefore our modelling would not exhibit serial correlation

and we can robustly pursue with a regular OLS (Ordinary Least Squares) estimation method technique for the modelling.

Test 3) Panel unit root tests

Unit root tests assess whether the time series data is stationary which means that the mean and variances of the data are not dependent on the passage of time. It is important to test for stationarity in time series data because its presence can result in invalid coefficients and statistical inferences about the model.

Using the panel data specific test of common roots – the Levin, Lin and Chu test – it was possible to reject the hypothesis of stationarity in the model at a 95% level of probability.

Test 4) The Fixed Effects significance

It was important to test the joint significance of the fixed effects estimates in the econometric function because it determines whether the fixed effects for the various airports included in the panel data regression analysis are significant in explaining each airport's departure from the average function. This test provided us with a 99.86% probability that the fixed effect term was a significant explanatory variable across the airports.

Test 5) The variance of model residuals

Once a function is proposed, it is important to assess the profile of its residuals and in particular to test for the presence of heteroscedasticity. This is where the residuals, over time, display a relationship such that there is either covariance between the errors in period i and period j, or the variance of the errors is dependent upon the passage of time.

To test for the presence of heteroscedasticity we employed the Breusch-Pagan-Godfrey (BPG) test to assess how the residuals are related to the function itself over time. An auxillary regression is run with the squared residuals from the model. Using the BPG test statistic we were able to accept the hypothesis of homoscedastic errors at the acceptance level of 95% probability i.e. that there is no covariance of the residuals and their variances are not time dependent.

Test 6) Backasting

Backcasting – the process of using a forecasting model to produce historic estimates - was carried out in order to validate the econometric function's predictive capability.

On average the backcasting for London Luton Airport is very good in that it produces differences in estimated employment levels, compared to actual employment, of 1% and 5% using the Y2 and Y1 models respectively. However the backcasting exhibits a common shape across the backcast years of 2003-11, as shown in Figures C1 and C2 below.

Figure C1: Actual vs fitted employment - low and mid estimate

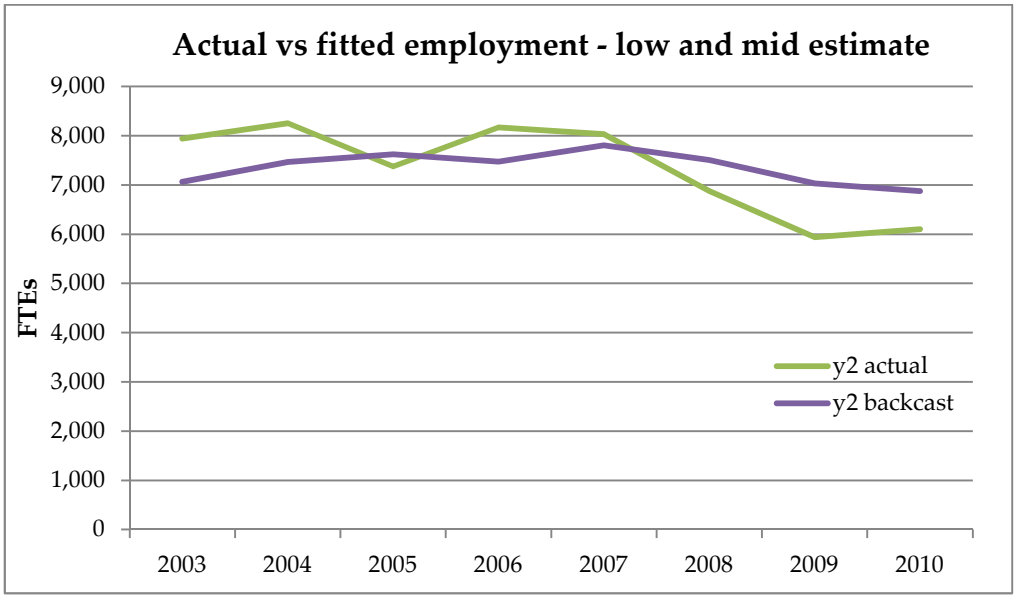
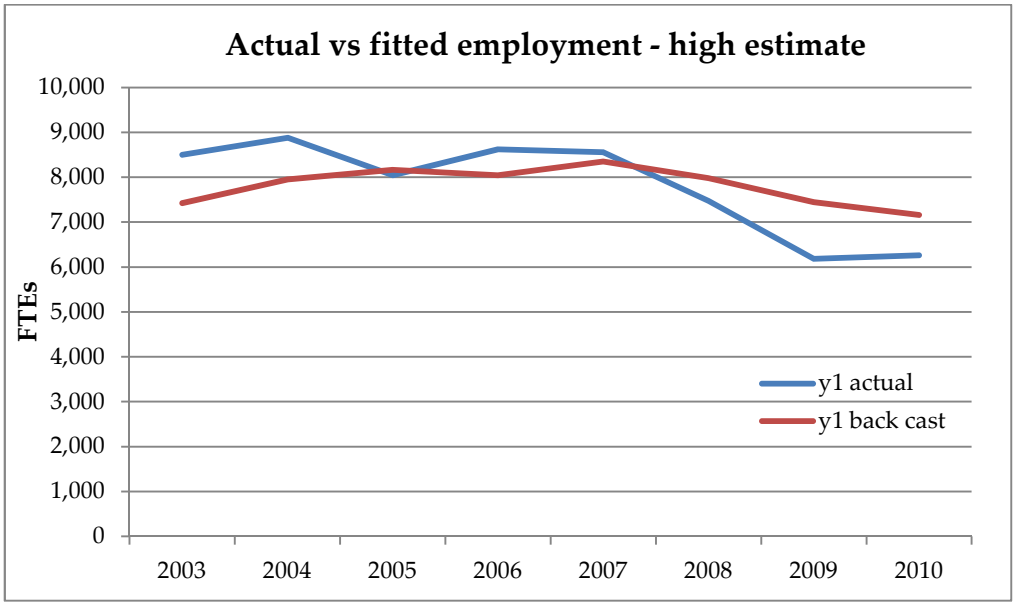


Figure C2: Actual vs fitted employment – high estimate



The model's fitted values begin as an underestimate of the actual employment data, they then fit pretty well for the years 2005-08. The model then predicts higher employment than the levels observed historically for the latter backcasting years.

However, overall the backcasting analysis helps validate our econometric function and we can be confident in using it to forecast future employment levels.

11.1.2 Co-efficients and probability values.

This section presents the co-efficients and probability values for the low, mid and high estimates for historical airport employment; and

The final function that was used to forecast employment at Luton was:

$$\mathbf{Y_t = c + \mathit{a}Y_{t-1} + \mathit{b}MWLU_t + FEi + e_t}$$

Where:

- Y = gross direct employment at London Luton Airport
- t = the period t (year t)
- c = the function's constant – this reflects the fixed gross employment that is observed across all identified airports
- Y t-1 = lagged direct employment, by one year
- *a* = the coefficient associated with Yt-1
- mwlu = million work load units – this is a measure of both annual passengers and cargo tonnage combined[18]
- *b* is the coefficient associated with mwlu
- FEi = fixed effect associated with airport "i" – this reflects the fixed gross employment that is observed specific to London Luton Airport
- et = error term in year t

This model was applied to both the low and mid estimates (Y2) and the high estimate (Y1) for historical employment.

Table C2 below shows the coefficients and probability values for the included variables for the low and mid employment estimate function. The probability of each variable being a significant explanatory variable is presented as 1 – the p-value associated with the variable. Variables were only included if their explanatory power was significant. This meant that we only included variables whose t-statistics and p-values indicated that they had a probability of more than 95% of explaining direct employment and thus we could be confident in their inclusion and associated coefficient.

[18] One mwlu is equal to one million passengers per year or one hundred thousand tonnes of freight

Table C2: Coefficients and probability values for low and mid employment estimate function

Variable	Coefficient	Probability (1 – p-value)	T-stat value
Constant	1903.702		
MWLU	215.7785	99.86	3.38
Employment last period, Yt-1	0.338556	98.01	2.41
Fixed Effect	Luton = 850.5434		

Source Halcrow modelling 2012

This function has an R2 value of 98.16% showing that a very high proportion of the employment is explained by the included variables.

Table C3 below shows the coefficients and probability values for the included variables for the high employment estimate function. The same rules for the probability of each variable being a significant explanatory variable is as before.

Table C3: Coefficients and probability values for high employment estimate function

Variable	Coefficient	Probability (1 – p-value)	T-value
Constant	1242.663		
MWLU	291.0883	99.98	4.1046
Employment last period, Yt-1	0.393214	99.61	3.0335
Fixed Effect	Luton = 635.5091		

Source Halcrow modelling 2012

This function has an R2 value of 98.4% showing that a very high proportion of the employment is explained by the included variables.

For both functions, the coefficients show that employment has a direct positive relationship with previous employment and a combined variable measuring the Airport's annual passengers and cargo tonnage.

11.2 Key issues

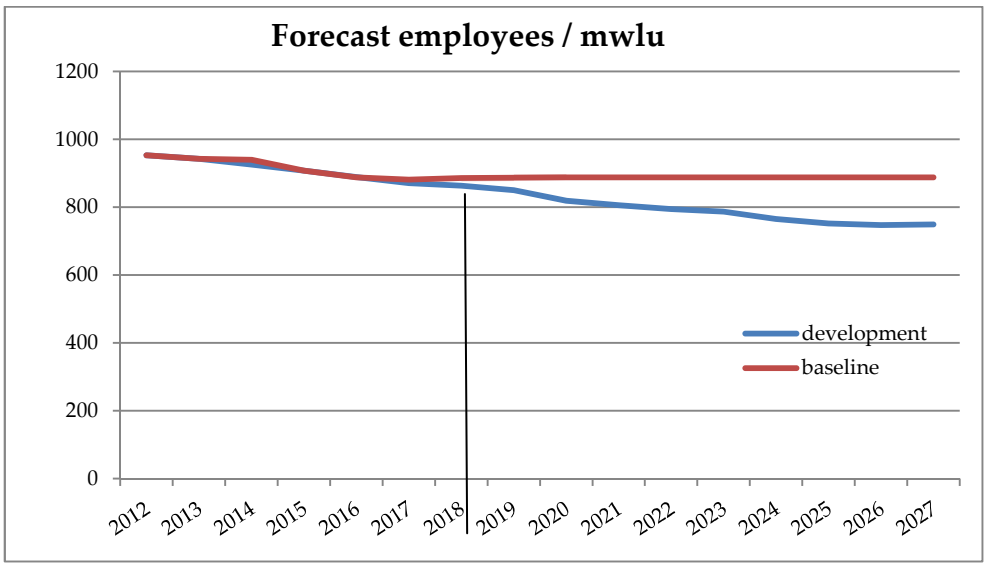
The following four key issues were addressed in producing the forecasts. They are:

- Explaining the difference in growth between the base case and the development forecasts;
- Sensitivity testing

11.2.1 Explaining the difference in growth between the base case and the development forecasts

The base case and development scenarios display a closely matched growth trend to 2018 where the base case capacity of 12.4 mppa is reached. After this point airport traffic for the base case scenario stops growing beyond 2018, and its associated employment level remains constant after this point. This assumes therefore that once the Airport reaches capacity, productivity is stagnant. This is a result of productivity being implied as a trend in the number of employees per million passengers in the econometric function, where productivity gains only occur when traffic levels change. This is a conservative estimation of productivity. In reality one would expect some degree of productivity gains in airport employment to continue despite traffic levels remaining stationary. The sensitivity analysis in this annex, demonstrates the impact on additional employment if this assumption was altered.

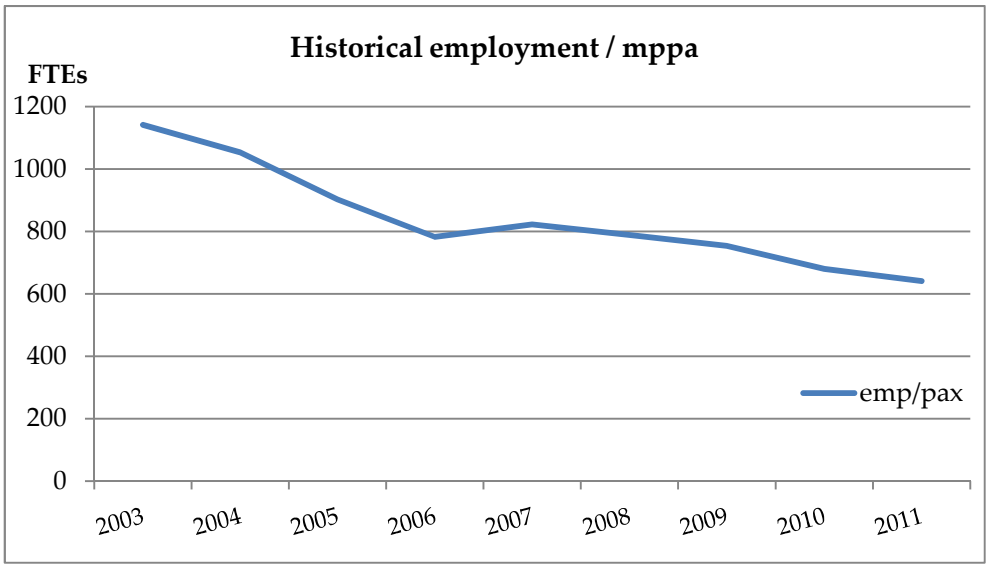
Figure C3: Forecast employee to mwlu ratios for base case and development scenarios



The development scenario shows a decreasing rate of growth from 2018 onwards, with proportionally fewer employees per million passengers between the present day and the development scenario than between the present day and the base case. This is due to productivity increases.

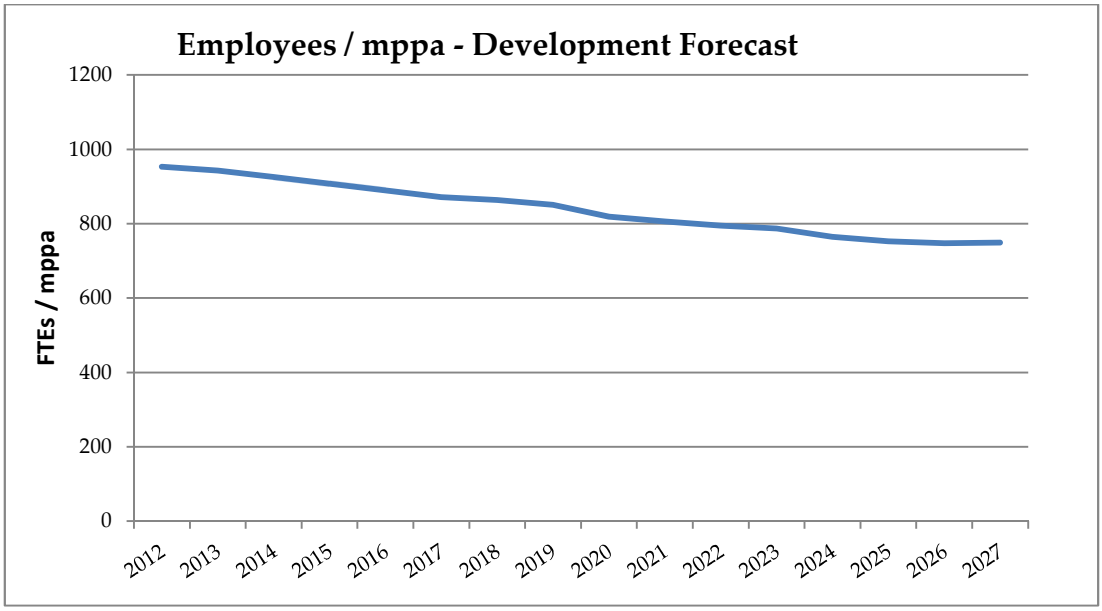
Productivity has been modelled indirectly through the metric of employees per mppa. The following figure illustrates implied labour productivity at Luton Airport between 2003 and 2011 based on the mid historical airport employment estimate from NOMIS.

Figure C4: number of jobs per million passengers per annum historically



Examining figure C4 we observe an average annual decrease of 6.8% in the number of employees per million passengers. This loosely reflects annual productivity gains in the airline industry, and implies that the marginal employment increase for the handling of the next million increment of passengers generally declines over time.

Figure C5: Forecast of employees per million passengers in the development scenario



The forecast for the development scenario represents an average annual reduction of 1.3% over the period to 2028, which is a less pronounced reduction than the historical trend. This is a more sensible long term level to capture future productivity gains at

the Airport given that the historical downward trend in productivity has slowed down in recent years.

11.2.2 Variations in growth of employment types

The forecasts of total direct employment have factored in to them both fixed and variable types of employment at the Airport, as broadly demonstrated by the functional form.

However, the breakdown of employment by broad SIC groupings does not reflect any expectations for how certain employment types will grow, remain constant or decline as traffic grows over time to 2028. Analysis was undertaken on the other included airports, across the study time period, to assess whether airports of a larger size had a different SIC group breakdown to the current day at London Luton Airport, or had experienced a change in their SIC group breakdowns as traffic grew. The analysis did not however provide any conclusive evidence for how these industrial groupings change with traffic growth.

Whilst there are industry expectations as to how certain types of employment will grow or decline over time (and as traffic grows), without solid qualitative evidence for an expected change to Luton's SIC grouping breakdown we were unable to incorporate any such change into our modelling. It should also be noted that the ten SIC groupings used here are broad. As a result, even where evidence exists, for example on how specific airport tasks are expected to become increasingly automated over time, the employment related to those tasks only covers a small portion of employment within its relevant SIC grouping..

11.2.3 Employment time series data

The employment data from NOMIS came from two databases. The original Annual Business Inquiry (ABI) database was superseded in 2009 by an updated database, the Business Register and Employment Survey (BRES). The employment data obtained from ABI between 2003 and 2008 used the 2003 categorisation of SIC codes and the data from BRES used the 2007 categorisation of SIC codes. As a result there was a need to align the 2003 codes to the 2007 codes to produce a consistent employment time series data set across the historic period. This was achieved by using a NOMIS SIC code conversion document, that set out how the 2003 and 2007 codes related to each other, and by creating some additional employment categories for the Airport employment SIC codes.

The historic employment data displayed a larger reduction in employment at London Luton Airport from 2008 onwards than would be expected as a result of the UK's economic recession. Some of the comparable airports also experienced a significant drop in employment between 2008 and 2009, though none were as significant as at London Luton, whilst for others' employment actually grew.

There are several possible reasons for the drop in employment:

- It could be partially due to a wider trend reflecting methodological changes to NOMIS;
- It could be due to the recession - A dummy variable for the economic recession was tested in our modelling. However neither a simple year dummy variable from 2008/09 to 2010/11, nor a lagged dummy variable,

was shown to be a significant and valid explanatory variable for airport employment;

- ONS informed us that the drop in employment was caused to a certain extent by the restructuring and takeovers of large companies operating in the Luton area.

11.2.4 Sensitivity Testing

Three sensitivity tests – Tests 1 to 3 - were carried out in order to assess the impact on the future employment estimates if airport traffic does not to meet its projected levels for the development scenario. A further test- Test 4 - altered the assumption of no productivity growth beyond 2018 (when capacity is met) for the base case scenario. The sensitivity tests were:

- **Test 1**: The growth in passenger numbers continues to 2018 as forecast, but once 12.4mppa is hit in 2018 the growth in passenger number thereafter is assumed to be 80% of its forecast year on year growth.

- **Test 2**: The final 2028 pax and cargo figures for the development scenario are assumed to be 90% of the central case projections (17.83mppa). Over the forecast period these are scaled up using the same profile as the central case forecast. We assumed base case capacity remains as 12.4mppa.

- **Test 3**: The final 2028 pax and cargo figures for the development scenario are assumed to be 80% of the central case projections (17.83mppa). Over the forecast period these are scaled up in the same shape as current. We assumed base case capacity remains as 12.4mppa.

- **Test 4**: The base case forecasts do not result in a constant employee / mppa ratio after 2018 but rather productivity gains continue at their previous annual rate of 0.84%.

Figures C6 and C7 below show the difference between the reported employment forecasts and the estimates in these tests.

Figure C6 Sensitivity analysis of development forecast

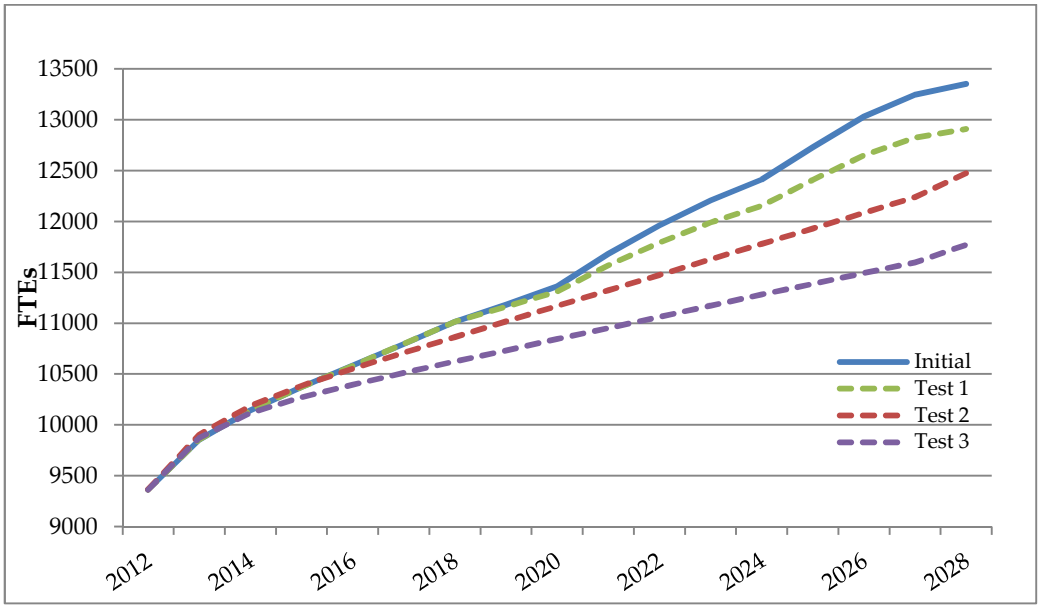


Figure C7 Sensitivity analysis of base case employment forecasts

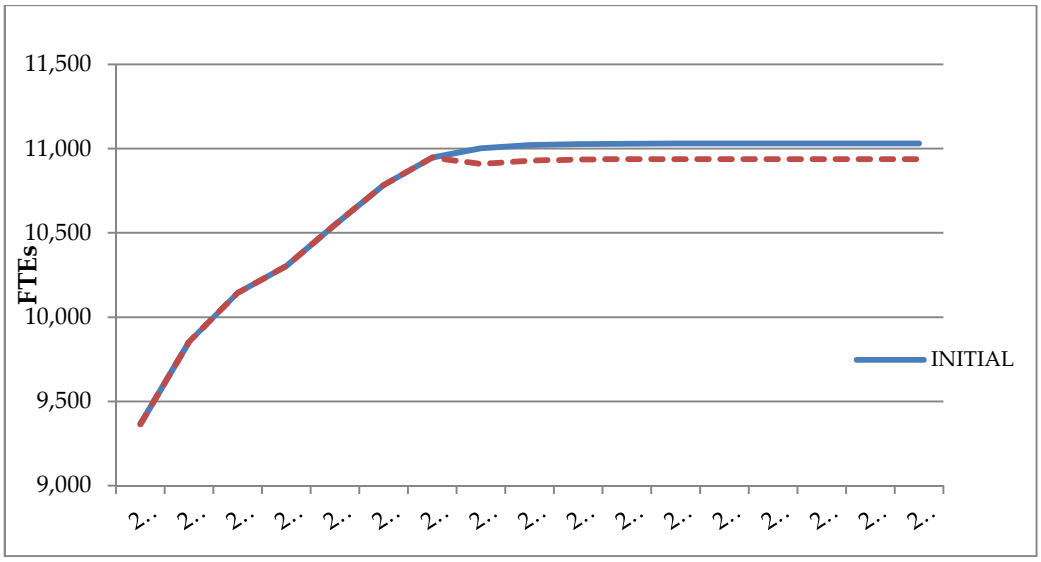


Table C4 below shows the 2028 gross employment figure for these scenarios, and their difference to the reported gross employment for the development scenario.

Table C4: Sensitivity scenarios

SCENARIO	2028 Mid estimate	2028 additional gross jobs (development compared to base case)
FORECASTED TO 17.8 MPPA	13,350	2,300
TEST 1	12,907	1,876
TEST 2	12,475	1,444
TEST 3	11,769	7,38
TEST 4	Base case – 10,938	2,412

Annex D: Glossary of Terms[19]

1. ATMs: Air traffic movements

2. Backcasting analysis
   Applies a function on (historical) actual inputs to assess how well it fits the actual outputs

3. Coefficient of correlation
   A measure of the degree of association between two variables

4. Collinearity
   The presence of exact linear relationships between any of the explanatory (X) variables

5. Covariance
   The product of two variables' expected deviations from their means

6. Cross sectional data
   Data which is observed from various subjects at one point in time, in this case different airports

7. Direct employment
   Employment generated directly by the operations of the Airport

8. Dependent variable
   Represents the output or effect that is to be tested, in this case the direct employment

9. Econometric function
   Specifies the relationships between dependent and explanatory variables

10. Econometric modelling
    Used in the report to refer to determining the statistical relationships between dependent and explanatory variables

11. Error term
    Represents all the factors that affect the dependent variable but which are not taken into account explicitly, it is inherent to any econometric function

12. Explanatory variables
    Variables which explain an output or effect that is measurable

13. Fixed Effect

[19] Many of the definitions have drawn from the following source: Gujarati, D and Porter D (2009) Basic Econometrics

Consistent estimators in a function that represent the differing intercepts of subjects in data where subjects are not homogenous

14. Forecasting error
    The difference between the actual and predicted (forecast) outputs

15. FTEs: Full Time Equivalents

16. Function constant (intercept)
    A function parameter which is a constant quantity, crudely it equals the value of the dependent variable when the value of the explanatory variables is 0.

17. Heteroscedasticity
    Where the variance of the error term is not constant, but depends on some factor in the function, for example the error term may become larger over time or across different cross sections

18. Indirect effects
    Outputs generated through the supply chain associated with the Airport activities

19. Induced effects
    Outputs generated as a result of spending of employees in the local economy

20. LSOA: Lower Super Output Area

21. Model errors
    See residual term def 24.

22. Mppa: Million passengers per annum

23. Mwlu: Million work load units
    An industry term which is equivalent to 1 million passengers and/or 100,000 tonnes of cargo

24. Panel data
    Data are elements of both time series and cross-section data.

25. Panel data regression analysis
    Statistical method for estimating the relationship between dependent and explanatory variables where there is both a time series and cross-sectional element to the data

26. Panel unit root tests
    Unit root tests assess the presence of stationarity (see def 38.), the value of the specific test statistics is assigned a probability value to determine whether the presence of stationarity can be rejected or not

27. Pax: Airport passengers

28. P-values
    The probability value, or exact level of significance, of a test statistic. It is the lowest significance level at which a hypothesis can be rejected. For example a p-value of 0.05 means there is a 5% probability that the hypothesis being tested can be rejected, or alternatively 95% probability that it cannot be rejected.

29. Regression Analysis
    Statistical method for estimating the relationship between dependent and explanatory variables

30. Residuals
    Estimates from the sample regression function of the error term, these capture the affects of the dependent variable not explicit in the estimated function

31. R^2
    A summary measure of how well the regression fits the data, the 'goodness of fit'.

32. Serial correlation
    Correlation between members of a series of observations ordered by time (time series data) or space (cross sectional data)

33. Significant bias
    Where expected or average values of the estimated coefficients are not equal to their true value

34. Standard error
    Measures the precision of the estimated coefficients

35. Stationarity
    Where the mean and variance of a time series do not vary systematically over time

36. Statistically significant
    This term has been used to relate to results that have a 95% probability that they true.

37. Standard Industrial Classifications (SICs)
    Classifies business establishments and other statistical units by the type of economic activity in which they are engaged.

38. Time series
    A sequence of data observations which are ordered over time

39. T-test statistic
    This is used to test statistical hypotheses, where the value of the t-statistic determines whether it is statistically significant and therefore whether a hypothesis can be rejected.

ANNEX B - AIRPORT ANNUAL MONITORING REPORT 2011


LTN

Annual Monitoring Report

2011

LUTON BOROUGH COUNCIL

LONDON LUTON AIRPORT

Executive Summary

Activity

London Luton Airport served just over 9.5 million passengers in 2011, an increase of 9% compared with 2010. The services included 7 new routes resulting in a total of 95 destinations in 2011, in line with 2010.

There were a total of 99,299 aircraft movements during 2011, an increase of 4% compared with 2010. These aircraft movements consisted of 75,278 passenger flights, including commercial flights by executive aircraft, 5% more than in 2010. The most common aircraft types used for passenger aircraft movements during 2011 were the Airbus A319 (26%), Airbus A320/321 aircraft (24%) and the Boeing 737 (16%).

General Aviation and non-commercial executive aircraft movements increased by 1% year on year and the cargo handled at the Airport reduced from 28,785 tonnes in 2010 to 27,942 tonnes during 2011. Most of this cargo was carried by the Airbus A300 freighter, the movements of which were similar to last year, increasing just slightly from 1,020 in 2010 to 1,036 in 2011.

It should be noted, when comparing statistics year on year that severe disruption was experienced at all UK airports during April 2010 when UK airspace was closed for several days due to the Volcanic Ash Cloud, originating in Iceland.

Operational Matters

The mode of operation at the Airport consisted, as usual, of a predominance of westerly operations, with landings from the direction of Stevenage and departures towards the M1 for 72% of the time. The day/night ratio of total aircraft movements during 2011 was 91% day / 9% night, in line with 91% day / 9% night in 2010. No permanent changes to any flight routes occurred during 2011, with the busiest departure routes being Clacton/Dover/Detling, towards the Brookmans Park beacon and Compton, towards the Tring area.

The Airport continued to monitor the use of Continuous Descent Approaches (CDAs) and has provided the London Luton Airport Consultative Committee (LLACC) and its sub-committee with detailed statistics on CDA achievement on a regular basis. The overall achievement rate during 2011 was 87%, compared to 88% in 2010.

Developments

There were no notable physical developments undertaken or commenced by LLAOL within the airport boundary during 2011.

Other developments on or adjacent to the site, but carried out by third parties include:-

- Construction of car valeting and refuelling facility – Hangar 22, Percival Way
- Construction of sprinkler tanks, substation and advertisements – Hangar 125, Percival Way
- Siting of a pre-fabricated modular security building to allow airside access – Monarch, Hangar 9, Percival Way
- Construction of new access ramp and entrance to relocated reception area – Monarch Aircraft Engineering, 60 Percival Way

Planning

The Joint Committee discussed the emerging Core Strategy on 24th June 2011 and voted to withdraw it. Luton Borough Council Members of the Joint Committee did not support the core strategy document. However, Central Bedfordshire Council wish to separately continue to adopt the Core Strategy, as interim guidance for development management purposes until a local plan can be prepared. Consequently work commenced on a Local Plan for Luton in the form to be determined by the National Planning Policy Framework (NPPF), when that is finally agreed. However, in the interim, under the old system, the Borough Council's adopted Luton Local Plan (March 2006) remains part of the statutory development plan until replaced when the new local plan is prepared.

The Local Plan (March 2006) must be taken together with sub regional and regional policy. Furthermore, the LLA Development Brief (February 2000) sets out detailed proposals for further development at LLA and is adopted by Luton Borough Council as Supplementary Planning Guidance (in September 2001).

Following consultation the NPPF was published in March 2012 and resulted in Local Plans being the all encompassing document, which no longer supported Planning Policy Guidance, as with the current form of local plans. It also supported the aspiration under Localism, which requires local authorities to adopt an approach of a duty to cooperate on cross boundary schemes and policies.

The publication of the Localism Act on 15th November 2011, signals an overhaul of the planning system with more emphasis on a national policy framework and local neighbourhood plans.

Noise

Aircraft noise in 2011 has been monitored continuously at the three fixed noise monitors and the Airport's noise contours regularly updated. The individual noise of each departure has been compared to the daytime and night-time noise violation limits. There were no daytime violations during 2011 and 12 violations at night (a combination of A300 cargo jets and ad hoc, older generation business jets). It should be noted that the new Night Noise Policy (Issue 8), effective 1st April 2010 lowered the night noise violation limit from 85dB(A) to 82dB(A) which is still the lowest of any UK airport. Continuous monitoring indicates that the vast majority of aircraft operated well below the current violation limits, with 99% of daytime departures and 98% of night departures registering maximum noise levels less than 79dB(A) and 91% of departures (day and night) registering maximum noise levels less than 76dB(A).

The Airport has to operate within limits on the area of the day and night contours, set by planning conditions in 1998 when the new terminal was approved.

	Daytime (57dB $L_{Aeq,16h}$) in km^2	Night-time (48 dB $L_{Aeq,8h}$) in km^2
NOT TO BE EXCEEDED	31.5	85.0
NOISE REDUCTION ACTION PLAN TO BE IMPLEMENTED	19.6	60.6
ACTUAL 2011	12.8	30.1

The contours for 2011 have been produced using the aircraft noise modelling software, INM 7.0b, in line with 2010.

The areas within the 57dB(A) daytime contour (12.8 km^2) and the 48 dB(A) night-time contour (30.1 km^2) identify that the Airport is operating well within its planning limits. The 2011 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

There has been a small reduction in the daytime contour areas from 2010 to 2011 (-0.3%). This reflects a change in fleet mix to more modern, quieter aircraft types. A reduction in the night time contour areas over the same period (-2%) has occurred, again due to changes in fleet mix.

The population counts for 2011 were calculated using the CACI Ltd, 2011 postcode database, compared to the use of Ordnance Survey Mastermap Address-Point (2007) data and Office of National Statistics Census Data (2001) for 2010 population count analysis . For this reason a direct comparison year on year is not possible.

The update of the population database from 2010 to 2011 results in a similar increase in both dwelling and population counts of between 6% and 11% for all contour bands from 48 to 57 dB LAeq,8hr. These two factors combined mean that despite the 2011 contours being smaller in area terms than in 2010, the dwelling counts reported in Tables 6.4 and 6.5 are similar to those reported in the 2010 AMR and population counts are around 7% to 8% higher.

In response to the Environmental Noise Directive (2002/49/EC) and corresponding regulations a Draft Noise Action Plan was prepared by the Airport during 2009, in partnership with the London Luton Airport Consultative Committee, the Air Traffic Control provider and airline partners. A 16 week consultation period on this document was launched on 28th September 2009 and following consideration of consultation responses a final Draft Noise Action Plan was submitted to the Department for Environment, Food and Rural Affairs (DEFRA), for approval, at the end of January 2010. London Luton Airport published the final Noise Action Plan in January 2012, following formal adoption by the Secretary of State for Environment, Food and Rural Affairs. This document is available to view on the airport website, at the following link: http://www.london-lutoninthecommunity.co.uk/environment/

Complaints

During 2011 a total of 733 complaints relating to London Luton Airport (LLA) aircraft operations were received, compared to 598 in 2010, an increase of 23% year on year.

The number of complainants reporting concerns throughout the year increased from 220 in 2010 to 305 during 2011. These individuals were located in a wide area around the Airport, with the highest number of complainants originating from Harpenden, Luton and Redbourn.

The number of specific aircraft events reported by complainants increased from 1,157 in 2010 to 1,770 in 2011.

It should be noted that in addition to the complaint figures outlined in detail within section 7 of this report, the Airfield Environment Office received in excess of 7,500 e-mails/telephone calls from over 350 households in Flamstead and Redbourn, between 19th August and 31st December 2011. These all reported increased disturbance from westerly departures as a result of the easyJet trial, undertaken between 5th May 2011 and 6th November 2011, to help bring aircraft back onto their prescribed flightpaths, where historically they have been flying outside the existing Noise Preferential Route (NPR) corridor. A small number of residents from both villages continued to report ongoing disturbance from westerly departures following the end of the trial.

A total of 229 complaints (from 117 individuals) reported night noise disturbance from LLA operations during 2011, compared to 236 night noise complaints (from 101 individuals) in 2010, a decrease of 3%. A further 24 complaints received throughout the year reported night disturbance involving overflights of helicopters and aircraft operating to or from other airports.

Throughout 2011 the aircraft operations from which most complaints arose related to A320/A321 passenger jets (15% of total complaints) and A300 freighters (12% of total complaints). There was a further reduction in complaints involving Luton helicopter operations (from 26 to 10 year on year) and a decrease in the number of helicopters operating into or out of the airport (from 706 in 2010 to 642 during 2011).

Employment

The methodology for this year's analysis is the same as for the previous year. Administrative data sources were used to conduct the survey, instead of sending out questionnaires as was the case up to the 2009 survey. The Inter Departmental Business Register was used as the main data source. This Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes.

It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

It has been assessed that around 8,100 people work at or around the Airport site. It is estimated that just over 88% of the jobs are full time positions.

Surface Access

The annual summer road count for 2011 shows an increase in 12hr/5day traffic flows on 7 of the 8 monitored roads, the highest increase in traffic count is +1109 (+24.2%) on Vauxhall Way South. The most significant decrease in traffic count is -126 (-1.8%) on A1081 London Road. The overall marginal traffic flow compared with last year in these observation points is +3774 (+7.6%).

It is likely that the completion of East Luton Corridor engineering operations and increased activities in and around London Luton Airport have resulted in significant redistribution of traffic flow in the area.

Staff car parking capacity has increased to 4,730 during 2011. The total car parking spaces on site now stand at 12,466, with around 4,000 spaces in off-site parks, which remain unchanged since last year.

Conclusion

In 2011 London Luton Airport achieved a 9% increase in passengers, with a 4% increase in total aircraft movements, incorporating a small 1% increase in the number of General Aviation and non commercial executive movements year on year. The Airport served just over 9.5 million passengers and carried just under 28,000 tonnes of cargo (compared to just under 29,000 tonnes during 2010). During the year there were a total of 7 new routes served (nett total of 4 as some routes ended during 2011). The Airport has continued to provide major employment for the area and around 8,100 people are estimated to work at or around the Airport site.

During 2011 there was an increase in the number of complaints reporting disturbance from aircraft operations and in the number of aircraft events eliciting a complaint. There was also a 39% increase in the number of individuals reporting concerns to the airport, primarily during the easyJet trial (5th May 2011 to 6th November 2011) to help contain flightpaths within the existing Noise Preferential Route corridor, where historically aircraft have been flying off-track.

The contours for 2011 have been produced using aircraft noise modelling software, INM 7.0b. It can be seen that there has been a reduction in both the daytime and night time contour areas from 2010 to 2011, reflecting a change in fleet mix to more modern, quieter aircraft types.

The areas within the 57dB(A) daytime contour (12.8 km^2) and the 48 dB(A) night-time contour (30.1 km^2) identify that the Airport is operating well within its planning limits. The 2011 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

The population affected has increased to just above 5,200 people during the daytime and to around 12,700 people at night, although it should be noted that the methodology for calculating population counts for 2011 has been updated so a direct comparison year on year is not possible. However, the Airport is still operating well within the limits set by the planning permission for the terminal resolved in February 1998.

1. Background

As a result of the Airport Act 1986, Luton Borough Council (LBC) formed a Limited Company, London Luton Airport Ltd, as freeholders and operators of the Airport in April 1987. In August of 1998, LLA Ltd then granted a 30 year agreement to a private consortium, known as London Luton Airport Operations Ltd (LLAOL), as the licensed managers and operators.

This report is the 33rd Annual Monitoring Report (AMR) and unless otherwise stated, looks at the calendar year 2011. It has been produced jointly by LBC and LLAOL.

In 1978, LBC in accepting the conclusions of the report of the Council's Chief Executive, entitled "Luton Airport, A Plan for the Future", affirmed the importance of monitoring in connection with noise levels, employment and housing and the effect on the highway system and placed on record their willingness to discuss the results of such monitoring with interested bodies and in particular with the London Luton Airport Consultative Committee (LLACC). The arrangements for monitoring were approved in June 1979 and were reaffirmed in the Borough Council's 1985 Policy Document "Towards 5 million Passengers".

The results are also used to monitor the performance of the Borough of Luton Local Plan approved in 1997 - now superseded by the adopted Borough of Luton Local Plan March 2006 - and constitute one of the material considerations when the Borough Council considers development proposals or determines planning applications for further development of the Airport.

Any monitoring system of this nature will have minor inaccuracies that can only be resolved as the monitoring arrangements evolve. Where more accurate figures for previous years have become available, these have been incorporated in the Report. Where additional information for previous years has become available this has also been included in the Report. Where data is no longer available then this is also identified with reasons.

The Leq contours are produced by Bureau Veritas Acoustics & Vibration for LLAOL using the FAA INM (Integrated Noise Model) model and LLAOL provides the contour outputs to LBC.

This is the 25th Annual Monitoring Report to be prepared since LLA became a Limited Company. All operational statistics are saved directly from the Airport's electronic monitoring systems unless otherwise stated. Employment and surface access data is compiled from LBC's monitoring systems.

The INM model for calculating the Leq noise contours was proposed by LLAOL after reporting the benefits of this model to the Noise & Track Sub-Committee of the LLACC on 15th November 1999. Subsequently the LLACC agreed the proposed move to the INM method on 13th December 1999.

Following extensive work between LBC and LLAOL the 2004 AMR radically improved the speed of information delivery, the format and content in accordance with the wishes of LLACC. Sections 2-7 have been produced exclusively by LLAOL. Sections 8-10 have been produced by LBC with data input on employment counts and car parking supplied by LLAOL.

Following validation the statistics contained within this report may differ to those presented in the Quarterly Airfield Environment Report.

Sections 2-7

Sections 8-10

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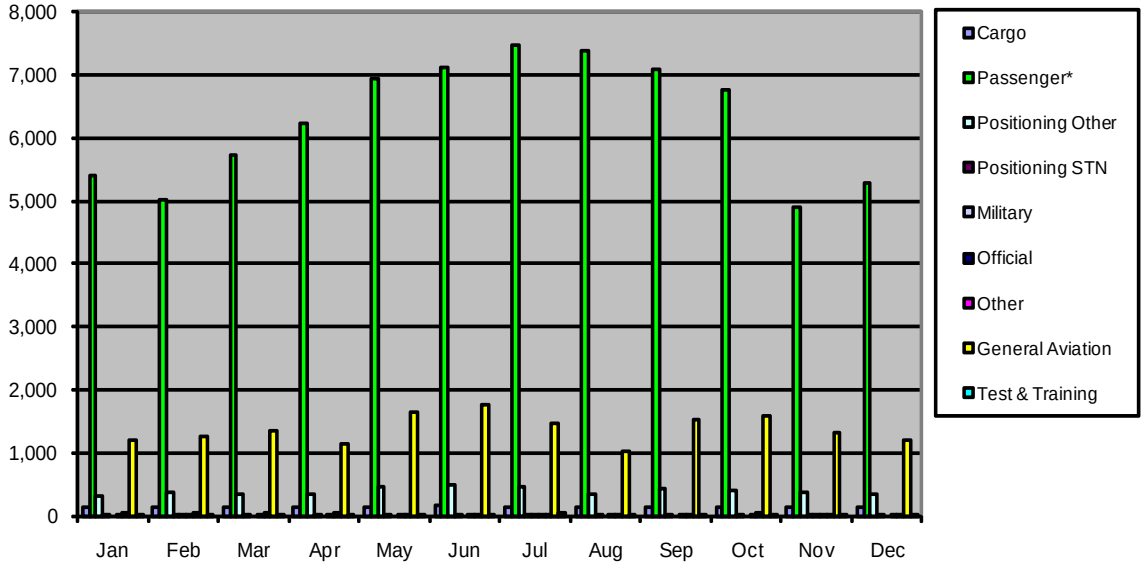
2. Aircraft Movements

2.1. Total Aircraft Movements

An aircraft movement is the take-off or landing of any aircraft from the Airport. There were a total of 99,299 aircraft movements during 2011 (compared with 95,628 in 2010), an increase of 4%. This resulted in an average 272 movements per 24 hours (in comparison with 262 in 2010).

	Commercial					Non - Commercial						
	Cargo	Passenger*	Positioning		*Total*	Military	Official	Other	General Aviation	Test & Training	*Total*	**Total**
			Other	STN								
Jan	134	5,396	317	9	*5,856*	0	10	44	1,206	35	*1,295*	**7,151**
Feb	135	5,011	382	18	*5,546*	3	10	37	1,266	19	*1,335*	**6,881**
Mar	147	5,741	358	11	*6,257*	0	5	52	1,342	24	*1,423*	**7,680**
Apr	153	6,218	356	16	*6,743*	0	12	43	1,135	13	*1,203*	**7,946**
May	152	6,934	462	28	*7,576*	0	6	36	1,643	14	*1,699*	**9,275**
Jun	157	7,104	509	25	*7,795*	0	8	32	1,777	35	*1,852*	**9,647**
Jul	152	7,479	477	25	*8,133*	1	20	35	1,474	59	*1,589*	**9,722**
Aug	134	7,392	345	22	*7,893*	0	2	34	1,013	11	*1,060*	**8,953**
Sep	139	7,079	434	20	*7,672*	0	15	34	1,522	3	*1,574*	**9,246**
Oct	134	6,753	392	12	*7,291*	0	19	45	1,578	25	*1,667*	**8,958**
Nov	137	4,895	374	17	*5,423*	2	18	34	1,325	16	*1,395*	**6,818**
Dec	148	5,276	333	17	*5,774*	0	9	31	1,199	9	*1,248*	**7,022**
2011 Total	**1,722**	**75,278**	**4,739**	**220**	***81,959***	**6**	**134**	**457**	**16,480**	**263**	***17,340***	**99,299**
2010 Total	**1,609**	**71,983**	**4,929**	**190**	***78,711***	**0**	**75**	**373**	**16,298**	**171**	***16,917***	**95,628**

* includes commercial flights by executive aircraft



2.2. Movement Classifications

Commercial	Operating for hire or reward
Non-Commercial	Not operating for hire or reward
Cargo	Aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories.
General Aviation	Private Aircraft, Helicopters and Business Jets not operating for hire or reward
Passenger	Commercial passenger flights, including executive aircraft
Other Positioning	Positioning flights to/from other Airports
STN Positioning	Positioning flights to/from London-Stansted Airport
Military	Flights on Military business
Official	Flights solely for official purposes by British or foreign civil government departments.
Other	Other non-commercial movements e.g. a departing aircraft that has made an unscheduled return to base.
Test & Training	Training Flights involving aircraft and also flights following or during aircraft maintenance

2.3. Aircraft Movements by Weight

Historically, aircraft operating at LLA have been classified in two groups, below or above 16 tonnes. Those below this weight were typically general aviation and executive aircraft although in recent years many general and executive aircraft can weigh in excess of 16 tonnes.

Aircraft Classifications (16 tonnes)

		2010	2011
Aircraft Over 16 Tonnes	Passenger	67,811	71,132
	Cargo	1,608	1,719
	Other	13,959	15,221
Aircraft Under 16 Tonnes	Passenger	4,172	4,143
	Cargo	1	3
	Other	8,077	7,081
TOTAL		**95,628**	**99,299**

2.4. Air Traffic Movements by Propulsion Type

Key – Jet, Helicopter, Propeller, Turbo-prop

AIRBUS A300-600 FREIGHTER	158	CANADAIR CHALLENGER 800 SRS (CRJ1/2)	112
AIRBUS A300-600 PASSENGER	56	CANADAIR GLOBAL 5000	505
AIRBUS A300-B4/C4/F4 FREIGHTER	878	CANADAIR GLOBAL EXPRESS	1,613
AIRBUS A310-300	16	CANADAIR REGIONAL JET 100	6
AIRBUS A310-300 FREIGHTER	4	CANADAIR REGIONAL JET 200 /440	28
AIRBUS A318	48	CESSNA 500/501 CITATION I	8
AIRBUS A319	26,062	CESSNA 510 CITATION MUSTANG	565
AIRBUS A319 CJ (EXEC)	88	CESSNA 525 CITATIONJET	884
AIRBUS A320	21,496	CESSNA 525A CITATIONJET 2	572
AIRBUS A321	2,208	CESSNA 525B CITATIONJET 3	122
AIRBUS A330-200	4	CESSNA 525C CITATIONJET 4	2
AVRO RJ70	6	CESSNA 550/551/552 CITATION	749
AVRO RJ85	10	CESSNA 560 CITATION 5/ULTRA	28
BAE 146-200 PASSENGER	66	CESSNA 560E CITATION ENCORE	10
BEECHCRAFT 400/450/XP	331	CESSNA 560XL CITATION EXCEL/XLS	2,282
BOEING 727-100 PASSENGER	10	CESSNA 650 CITATION III/VI/VII	36
BOEING 727-100 WINGLETS	2	CESSNA 680 CITATION SOVEREIGN	297
BOEING 737-200 PASSENGER	42	CESSNA 750 CITATION X	414
BOEING 737-300 FREIGHTER	88	DASSAULT FALCON (2 ENGINE) FAMILY	2
BOEING 737-300 PASSENGER	192	DASSAULT FALCON 10/100	20
BOEING 737-300 WINGLETS	6	DASSAULT FALCON 20/200	18
BOEING 737-400 FREIGHTER	86	DASSAULT FALCON 2000	867
BOEING 737-400 PASSENGER	640	DASSAULT FALCON 2000 DX/EX	308
BOEING 737-500	2	DASSAULT FALCON 2000 LX	300
BOEING 737-700	4,582	DASSAULT FALCON 50	52
BOEING 737-700 WINGLETS	94	DASSAULT FALCON 50EX	99
BOEING 737-800	1,052	DASSAULT FALCON 7X	513
BOEING 737-800 WINGLETS	9,791	DASSAULT FALCON 900	1,109
BOEING 757-200 FREIGHTER	85	DASSAULT FALCON 900EX	22
BOEING 757-200 PASSENGER	657	ECLIPSE 500	17
BOEING 757-200 WINGLETS	573	EMBRAER 190	58
BOEING 767-200 PASSENGER	80	EMBRAER 195	8
BOEING 767-200ER	56	EMBRAER LEGACY 600	992
BOEING 767-300 PASSENGER	2	EMBRAER PHENOM 100	84
BOEING 767-300 WINGLETS	98	EMBRAER PHENOM 300	46
BOEING 767-300ER	224	EMBRAER RJ135	116
BOEING 777-200	26	EMBRAER RJ145	16
BOEING 777-200ER	6	FAIRCHILD DORNIER 328 JET	48
BOEING BBJ2 (737-800)	14	FOKKER 100	12
CANADAIR CHALLENGER 300	915	GATES LEARJET 35/36	124
CANADAIR CHALLENGER 600	2	GATES LEARJET 40	58
CANADAIR CHALLENGER 600 SRS FAMILY	8	GATES LEARJET 45	430
CANADAIR CHALLENGER 601	199	GATES LEARJET 55	6

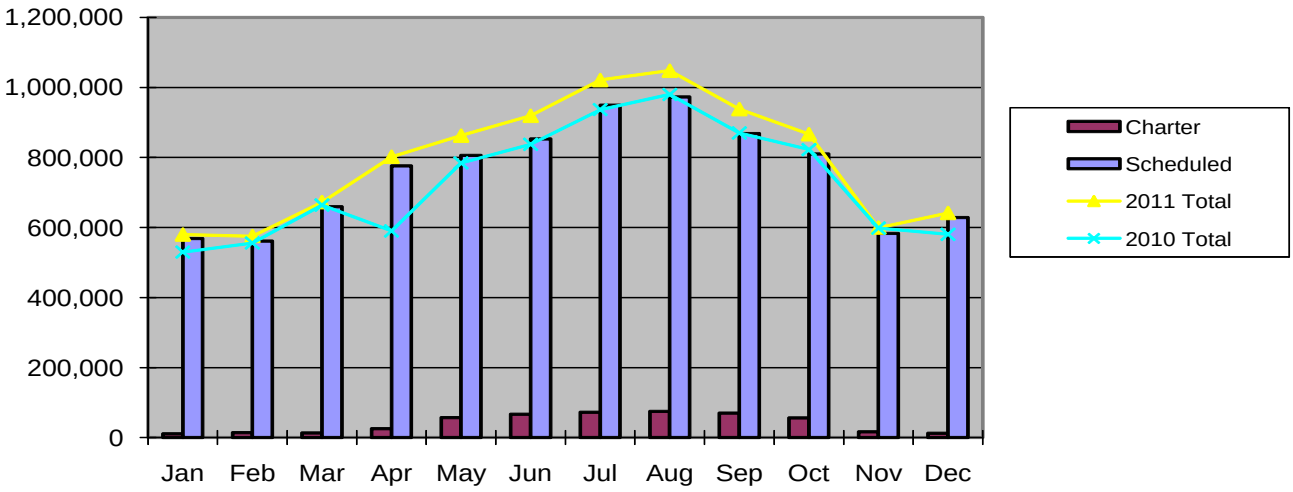
CANADAIR CHALLENGER 604	1,772	GATES LEARJET 60	398
CANADAIR CHALLENGER 605	379	GULFSTREAM 100 / IAI 1125 ASTRA	8
GULFSTREAM 150	127	AEROSPATIALE/ALENIA ATR42-200/300	364
GULFSTREAM 2	24	AEROSPATIALE/ALENIA ATR42-500	6
GULFSTREAM 200 / IAI 1126 GALAXY	392	AEROSPATIALE/ALENIA ATR72	658
GULFSTREAM 3	84	AEROSPATIALE ATR72 FREIGHTER	6
GULFSTREAM 300	74	ANTONOV AN-12/ AVIC Y-8	2
GULFSTREAM 350	8	ANTONOV AN-26	4
GULFSTREAM 4	1,453	BAE ATP	202
GULFSTREAM 400	38	BAE ATP FREIGHTER	382
GULFSTREAM 450	883	BAE JETSTREAM 41	8
GULFSTREAM 5	651	BEECHCRAFT 1900D	6
GULFSTREAM 550	2,112	BEECHCRAFT 200 KING AIR	284
HAWKER/RAYTHEON 4000 HORIZON	61	BEECHCRAFT 300/350 KING AIR	54
HS125-1000	39	BEECHCRAFT C90A/B/GT KING AIR	8
HS125-600	2	BEECHCRAFT E90 KING AIR	4
HS125-700/750	299	BEECHCRAFT TWIN TURBOPROP	10
HS125-800/850XP	1,186	CASA/IPTN CN-235	2
HS125-900/900XP	353	CESSNA 208 CARAVAN 1	2
LOCKHEED JETSTAR	2	CESSNA 441 CONQUEST 2	18
MCD DOUGLAS MD-82	4	CESSNA F406 CARAVAN 2	4
MCD DOUGLAS MD-83	40	DE HAVILLAND DHC-6 TWIN OTTER	2
MCD DOUGLAS MD-87	18	DE HAVILLAND DHC-8 DASH 8-300	4
RAYTHEON 390 PREMIER 1	311	DE HAVILLAND DHC-8 DASH 8-400	990
ROCKWELL SABRE/SABRELINER	4	FAIRCHILD DORNIER 228	2
SINO SWEARINGEN SJ30	2	FAIRCHILD DORNIER 328	32
Total	**95,245**	FOKKER 50/60	2
AEROSPATIALE AS350/355 FAMILY	136	GULFSTREAM JETPROP COMMANDER	6
AGUSTA A109	130	LOCKHEED L-100/182/382 HERCULES	4
BELL HELICOPTER FAMILY	4	MITSUBISHI MU-2	2
EUROCOPTER EC130	14	PIAGGIO P180	42
EUROCOPTER EC135/635	38	PILATUS PC-12	62
EUROCOPTER EC155	126	PIPER LIGHT A/C (TWIN TURBO)	2
MBB BO105/BOLKOW	2	PIPER PA31T TURBO	12
MD HELICOPTERS MD900 EXPLORER	2	PIPER PA42 CHEYENNE 3/4	26
SIKORSKY S-76	186	PIPER PA46 (TURBO)	2
SIKORSKY S-92	4	SAAB 2000	30
Total	**642**	SAAB 340 FREIGHTER	2
BEECHCRAFT 55/58 BARON	2	SAAB 340A	6
BEECHCRAFT 76 DUCHESS	2	SOCATA TBM 700/850	14
CESSNA 182	2	SW SA-226TC METRO II	2
CESSNA 205/206/207	2	SW SA-227AC/BC METRO III	14
CESSNA 303 CRUSADER	14	SW SA-227CC/DC METRO 23	10
CESSNA 404 TITAN	2	**Total**	**3,292**
CESSNA 421	2		
CIRRUS 20/22	2		
DIAMOND STAR DA-40/42	4		
PILATUS/BN BN-2A/B ISLANDER	18		
PILATUS/BN BN-2A/B ISLANDER (TURBO)	6		
PIPER PA28 CHEROKEE	2		
PIPER PA31 NAVAJO	58		
PIPER PA34 SENECA II/III	4		
Total	**120**	**Grand Total**	**99,299**

2.5. Passenger Statistics

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 9,526,694 passengers were handled at LLA during 2011: 9,037,173 on scheduled flights (94%) and 489,521 on charter flights (6%). This represents an overall increase in passengers of 9% compared with 2010.

	2010			2011		
	Charter	Scheduled	**Totals**	Charter	Scheduled	**Totals**
Jan	13,616	516,236	**529,852**	10,764	568,897	**579,661**
Feb	12,927	542,916	**555,843**	13,997	561,331	**575,328**
Mar	23,878	640,425	**664,303**	13,096	659,323	**672,419**
Apr	19,668	570,914	**590,582**	25,756	776,397	**802,153**
May	53,427	731,028	**784,455**	56,665	805,791	**862,456**
Jun	64,718	772,675	**837,393**	66,597	852,698	**919,295**
Jul	70,842	865,960	**936,802**	72,180	949,241	**1,021,421**
Aug	76,799	903,158	**979,957**	74,725	973,362	**1,048,087**
Sep	69,767	800,387	**870,154**	70,133	868,205	**938,338**
Oct	53,084	769,651	**822,735**	56,212	810,312	**866,524**
Nov	16,112	582,565	**598,677**	16,839	582,847	**599,686**
Dec	13,747	567,131	**580,878**	12,557	628,769	**641,326**
Totals	**488,585**	**8,263,046**	**8,751,631**	**489,521**	**9,037,173**	**9,526,694**



2.6. Average passenger load on public transport flights

Average Passengers on Scheduled and Charter Flights			
Year	Charter*	Scheduled	**Total**
2007	177	123	**126**
2008	167	123	**125**
2009	169	125	**127**
2010	181	132	**134**
2011	181	137	**139**

*including chartered executive aircraft

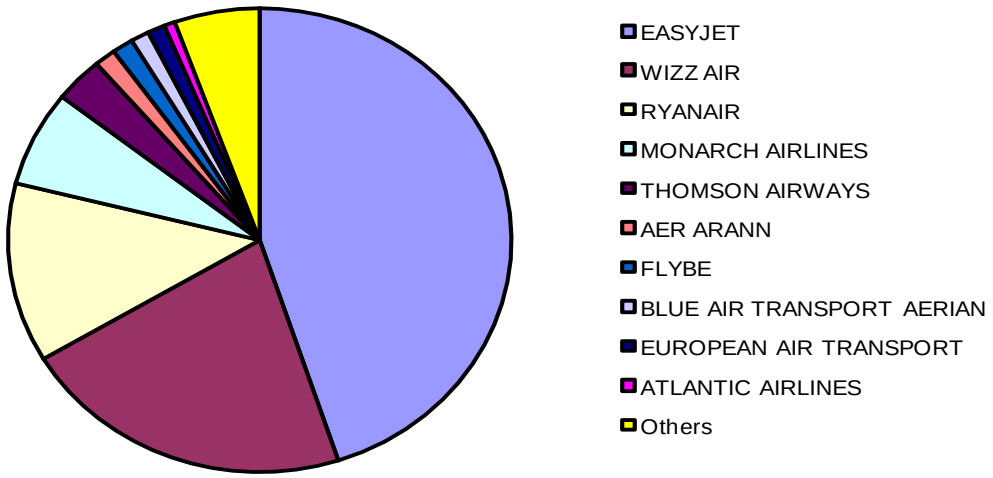
2.7. Passenger Breakdown by Region

	2010				2011			
	Domestic	EU	Non-EU	**Total**	Domestic	EU	Non-EU	**Total**
Jan	65,762	325,582	138,508	**529,852**	70,231	342,424	167,006	**579,661**
Feb	74,307	341,119	140,417	**555,843**	77,582	341,355	156,391	**575,328**
Mar	85,054	406,824	172,425	**664,303**	88,312	404,740	179,367	**672,419**
Apr	61,881	385,468	143,233	**590,582**	90,048	511,868	200,237	**802,153**
May	73,918	531,571	178,966	**784,455**	88,249	582,231	191,976	**862,456**
Jun	85,342	561,373	190,678	**837,393**	94,106	615,938	209,251	**919,295**
Jul	87,454	619,591	229,757	**936,802**	94,744	676,661	250,016	**1,021,421**
Aug	86,811	651,837	241,309	**979,957**	94,034	700,617	253,436	**1,048,087**
Sep	81,349	581,459	207,346	**870,154**	92,212	624,383	221,743	**938,338**
Oct	86,501	533,593	202,641	**822,735**	95,210	565,098	206,216	**866,524**
Nov	83,843	364,897	149,937	**598,677**	86,043	378,013	135,630	**599,686**
Dec	69,693	351,355	159,830	**580,878**	81,743	395,763	163,820	**641,326**
Totals	**941,915**	**5,654,669**	**2,155,047**	**8,751,631**	**1,052,514**	**6,139,091**	**2,335,089**	**9,526,694**

2.8. Movements by ten largest operators

Operator	**Movements**	**%**
EASYJET	32,812	45%
WIZZ AIR	15,691	21%
RYANAIR	9,131	13%
MONARCH AIRLINES	4,858	7%
THOMSON AIRWAYS	2,302	3%
AER ARANN	1,010	1%
FLYBE	989	1%
BLUE AIR TRANSPORT AERIAN	862	1%
EUROPEAN AIR TRANSPORT	824	1%
ATLANTIC AIRLINES	510	1%
Others	*4,001*	*5%*
Total	**72,990**	**100%**

N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.



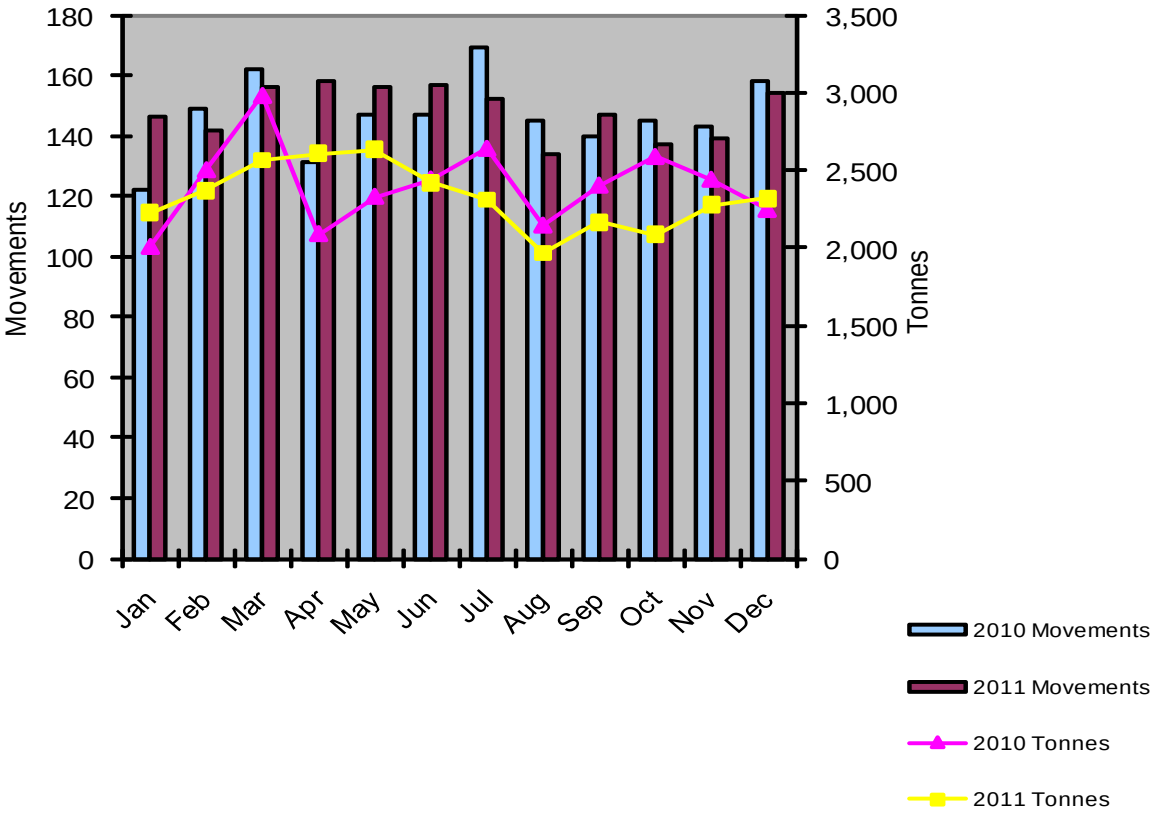
2.9. Movements and average seats by aircraft type

		Movements	Average Seats
EASYJET	AIRBUS A319	25,546	156
	AIRBUS A320	2,863	180
	BOEING 737-700	4,403	149
	Total	**32,812**	**158**
WIZZ AIR	AIRBUS A320	15,683	180
	BOEING 737-300 FREIGHTER	2	44
	BOEING 737-800	4	186
	BOEING 737-800 WINGLETS	2	186
	Total	**15,691**	**180**
RYANAIR	BOEING 737-800 WINGLETS	9,131	189
	Total	**9,131**	**189**
MONARCH AIRLINES	AIRBUS A300-600 PASSENGER	52	361
	AIRBUS A320	2,703	174
	AIRBUS A321	2,094	215
	BOEING 757-200 PASSENGER	9	205
	Total	**4,858**	**198**
THOMSON AIRWAYS	AIRBUS A320	2	180
	AIRBUS A321	1	218
	BOEING 737-800	546	189
	BOEING 737-800 WINGLETS	890	189
	BOEING 757-200 PASSENGER	415	234
	BOEING 757-200 WINGLETS	445	233
	BOEING 767-300 WINGLETS	2	293
	CESSNA 560E CITATION ENCORE	1	
	Total	**2,302**	**208**
AER ARANN	AEROSPATIALE/ALENIA ATR42-200/300	356	48
	AEROSPATIALE/ALENIA ATR72	654	71
	Total	**1,010**	**64**
FLYBE	DE HAVILLAND DHC-8 DASH 8-400	985	78
	EMBRAER 195	4	118
	Total	**989**	**78**
BLUE AIR	AIRBUS A320	2	180
	BOEING 737-300 PASSENGER	124	140
	BOEING 737-400 PASSENGER	631	164
	BOEING 737-500	2	126
	BOEING 737-800 WINGLETS	22	164
	BOEING 757-200 PASSENGER	38	229
	BOEING 757-200 WINGLETS	8	217
	MCD DOUGLAS MD-83	35	167
	Total	**862**	**166**
EURO AIR TRANSPORT	AIRBUS A300-600 FREIGHTER	6	N/A
	AIRBUS A300-B4/C4/F4 FREIGHTER	680	N/A
	BOEING 737-300 FREIGHTER	56	N/A
	BOEING 737-800 WINGLETS	2	N/A
	BOEING 757-200 FREIGHTER	80	N/A
	Total	**824**	N/A
ATLANTIC AIRLINES	BAE ATP	186	N/A
	BAE ATP FREIGHTER	324	N/A
	Total	**510**	N/A
Others	**Total**	**4,001**	**134**
Total		***72,990***	***172***

2.10. Total Cargo Movements & Tonnage

	2010		2011	
	Tonnes	Movements	Tonnes	Movements
Jan	2,003	122	2,225	146
Feb	2,500	149	2,371	142
Mar	2,980	162	2,566	156
Apr	2,087	131	2,605	158
May	2,328	147	2,633	156
Jun	2,440	147	2,419	157
Jul	2,638	169	2,308	152
Aug	2,142	145	1,965	134
Sep	2,401	140	2,167	147
Oct	2,586	145	2,086	137
Nov	2,438	143	2,276	139
Dec	2,243	158	2,319	154
Total	**28,785**	**1,758**	**27,942**	**1,778**

N.B The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because a proportion of cargo tonnage is carried on passenger aircraft. Consequently the movement figures in Table 2.10 will differ from Table 2.1 which shows dedicated cargo movements.



3. Routes

Destination	Code	Country	Charter Operator	Scheduled Operator
Aberdeen	ABZ	UK		easyJet
Alicante	ALC	Spain		easyJet/Monarch
Amsterdam	AMS	Netherlands		easyJet
Antalya	AYT	Turkey	Thomson	
Arrecife	ACE	Spain (Canaries)	Thomson/Monarch	Monarch / Ryanair
Bacau	BCM	Romania		Blue Air
Barcelona	BCN	Spain		easyJet
Belfast City	BHD	UK		easyJet
Belgrade	BEG	Serbia		Wizz Air
Berlin	SXF	Germany		easyJet
Beziers	BZR	France		Ryanair
Bodrum	BJV	Turkey	First Choice/Thomson	Monarch
Bordeaux	BOD	France		easyJet
Bourgas	BOJ	Bulgaria	Thomson	Wizz Air
Bratislava	BTS	Slovakia		Ryanair
Brno	BRQ	Czech Rep		Wizz Air
Bucharest	BBU	Romania		Wizz Air / Blue Air
Budapest	BUD	Hungary		Wizz Air/easyJet
Cluj-Napoca	CLJ	Romania		Wizz Air
Corfu	CFU	Greece	Thomson	Monarch / easyJet
Dalaman	DLM	Turkey	First Choice/Thomson	Monarch
Dortmund	DTM	Germany		easyJet
Dublin	DUB	Ireland		Ryanair
Dubrovnik	DBV	Croatia		Wizz Air
Edinburgh	EDI	UK		easyJet
Faro	FAO	Portugal	First Choice/Thomson	easyJet/Monarch
Fuerteventura	FUE	Spain (Canaries)	First Choice/Thomson	Monarch/Ryanair
Funchal	FNC	Portugal (Madeira)	Thomson	
Gdansk	GDN	Poland		Wizz Air
Geneva	GVA	Switzerland		easyJet
Gerona	GRO	Spain		Ryanair
Gibraltar	GIB	Spain		Monarch
Glasgow	GLA	UK		easyJet
Grenoble	GNB	France		easyJet
Hamburg	HAM	Germany		easyJet
Heraklion	HER	Greece	Thomson	easyJet
Ibiza	IBZ	Spain (Balearics)	Thomson/First Choice	easyJet/Monarch
Inverness	INV	UK		easyJet
Isle of Man	IOM	UK		Flybe
Istanbul	SAW	Turkey		easyJet
Jersey	JER	UK		Flybe
Katowice	KTW	Poland		Wizz Air
Kaunas	KUN	Lithuania		Ryanair
Kefalonia	KEF	Greece	Thomson	
Kerry	KIR	Ireland		Ryanair
Kiev	IEV	Ukraine		Wizz Air
Knock	NON	Ireland		Ryanair
Larnaca	LCA	Cyprus	First Choice/Thomson	Monarch
Las Palmas	LPA	Spain (Canaries)	First Choice/Thomson/Monarch	Monarch / Ryanair

Destination	Code	Country	Charter Operator	Scheduled Operator
Lisbon	LIS	Portugal		easyJet
Lodz	**LCJ**	**Poland**		**Wizz Air**
Madrid	MAD	Spain		easyJet
Mahon	MAH	Spain (Balearics)	First Choice/Thomson/Monarch	easyJet/Monarch
Malaga	AGP	Spain	Thomson	easyJet/Monarch
Malta	MLA	Malta	Thomson	Ryanair
Marrakech	RAK	Morocco		Ryanair
Milan	MXP	Italy		easyJet
Monastir	MIR	Tunisia	First Choice/Thomson	
Montpellier	MPL	France		easyJet
Murcia	MJV	Spain		Ryanair
Nice	NCE	France		easyJet
Nimes	FNI	France		Ryanair
Ovda	OVD	Israel	Israir	
Palma	PMI	Spain (Balearics)	First Choice/Thomson/Monarch	easyJet/Monarch
Paphos	PFO	Cyprus	First Choice/Thomson	easyJet
Paris	CDG	France		easyJet
Pisa	PSA	Italy		easyJet
Poznan	POZ	Poland		Wizz Air
Prague	PRG	Czech Rep		Wizz Air
Reykjavik	RKV	Iceland		easyJet
Reus	REU	Spain	Thomson	Ryanair
Rhodes	RHO	Greece	Thomson	
Riga	RIX	Latvia		Wizz Air
Rome	FCO	Italy		Monarch
Rovaniemi	RVN	Finland	Thomson	
Rzeszów	RZZ	Poland		Ryanair
Salzburg	**SZG**	**Austria**	Thomson	**easyJet**
Sharm El Sheikh	SSH	Egypt	Thomson	easyJet
Sofia	SOF	Bulgaria		Wizz Air
Skopje	**SKP**	**Macedonia**		**Wizz Air**
Split	SPU	Croatia		Wizz Air
Tallinn	**TLL**	**Estonia**		**Ryanair**
Tel Aviv	TLV	Israel		El Al / easyJet
Tenerife	TFS	Spain (Canaries)	First Choice/Thomson/Monarch	Monarch / Ryanair
Thessalonika	SKG	Greece	Thomson	
Timisoara	TSR	Romania		Wizz Air
Tirgu Mures	**TGM**	**Romania**		**Wizz Air**
Trapani	TPS	Italy (Sicily)		Ryanair
Varna	VAR	Bulgaria		Wizz Air
Vilnius	**VNO**	**Lithuania**		**Wizz Air**
Warsaw	WAW	Poland		Wizz Air
Waterford	WAT	Ireland		Aer Arann
Wroclaw	WRO	Poland		Wizz Air
Zakynthos	ZTH	Greece	Thomson/Monarch	
Zurich	ZRH	Switzerland		easyJet

(Destinations available as at 31st December 2011)

New route for 2011

For more information visit:- www.london-luton.com

3.1. New Routes

NEW ROUTES 2011			
Destination	**Country**	**Launch**	**Airline**
Salzburg	Austria	17-Dec-11	easyJet
Lodz	Poland	13-Sep-11	Wizz Air
Skopje	Macedonia	20-Jun-11	Wizz Air
Corfu	Greece	23-May-11	Monarch Scheduled
Vilnius	Lithuania	17-Apr-11	Wizz Air
Tirgu Mures	Romania	29-Mar-11	Wizz Air
Tallinn	Estonia	10-Jan-11	Ryanair

2011	
AIRLINE	**NEW ROUTES**
Wizz Air	4
easyJet	1
Monarch Scheduled	1
Ryanair	1
TOTAL	**7**
NETT 2011	**4**

ALL ROUTES ENDING 2011			
Destination	**Country**	**Ended**	**Airline**
Brest	France	01-Feb-11	Ryanair
Zagreb	Croatia	01-Feb-11	Wizz Air
Galway	Ireland	30-Oct-11	Aer Arann

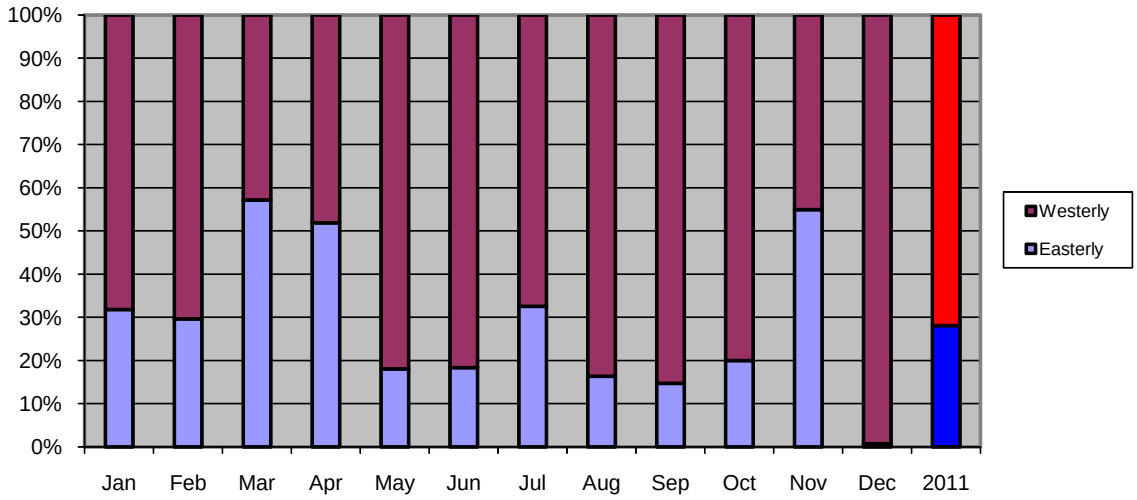
AIRLINE	**ROUTES ENDED**
Wizz Air	1
Ryanair	1
Aer Arann	1
TOTAL	**3**

4. Runway Usage

The runway usage split (dictated primarily by wind direction) during 2011 was 28% easterly and 72% westerly (compared to 36% / 64% in 2010). A monthly breakdown is shown below, highlighting an exceptionally high level of westerly operations during December 2011. A breakdown of runway usage over the last five years is also shown, giving a historical split of 30% easterly and 70% westerly.

Year	Easterly	Westerly
2011	28%	72%
2010	36%	64%
2009	28%	72%
2008	29%	71%
2007	29%	71%
Average	**30%**	**70%**

Month	Easterly	Westerly
Jan	32%	68%
Feb	30%	70%
Mar	57%	43%
Apr	52%	48%
May	18%	82%
Jun	18%	82%
Jul	33%	67%
Aug	16%	84%
Sep	15%	85%
Oct	20%	80%
Nov	55%	45%
Dec	1%	99%
2011	**28%**	**72%**



4.1. Runway split of aircraft movements during 92-day summer period

In the UK it is standard practice to average noise levels over a 16 hour daytime period (07:00–23:00, local time) and a 92-day summer season (16th June – 15th September). As part of the Night Noise Policy, LLA also produces an 8 hour night-time contour on a quarterly basis.

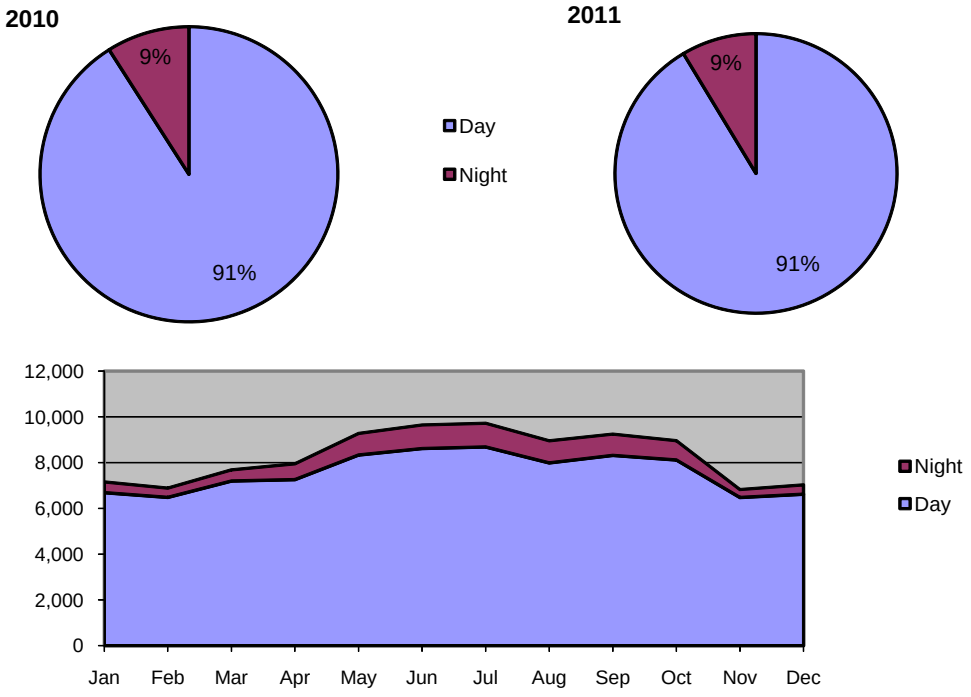
	Day (0700-2300 local)		Night (2300-0700 local)	
Year	Westerly	Easterly	Westerly	Easterly
2011	80%	20%	81%	19%
2010	78%	22%	76%	24%
2009	81%	19%	80%	20%
2008	86%	14%	85%	15%
2007	84%	16%	85%	15%
Average	**82%**	**18%**	**81%**	**19%**

4.2. Day / Night Ratio of Movements

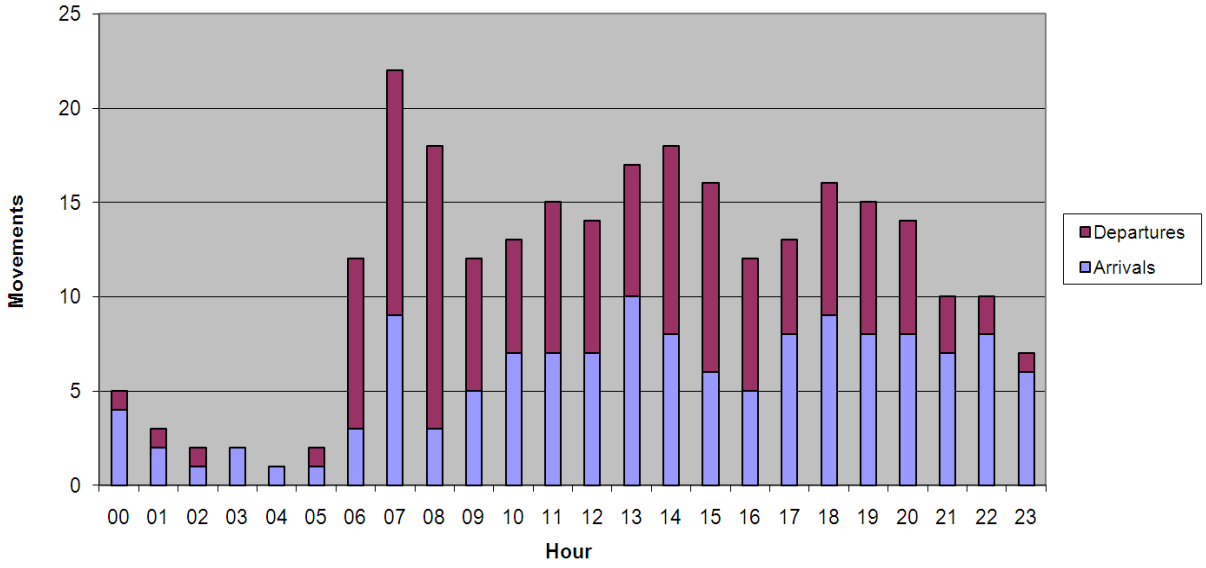
There were 8,539 night movements during 2011 (compared to 8,691 for 2010, a decrease of 2%), an average 23 movements per night (compared to 24 last year). Arriving aircraft accounted for 72% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft landing back at the airport for the night, between 23:00 hrs and midnight. The average ratio of total aircraft movements during 2011 was 91% day / 9% night (in line with 91% day / 9% night in 2010).

The number of night movements quoted here within Section 4.2 will differ from those within Section 6 as the 8 hour Leq contour calculation period extends between 23:00 - 07:00, 7 days a week. The figures quoted here cover the night period, as defined in the Night Noise Policy for noise violation purposes, 23:00 until 06:00, Mon-Sat and until 07:00 on Sundays.

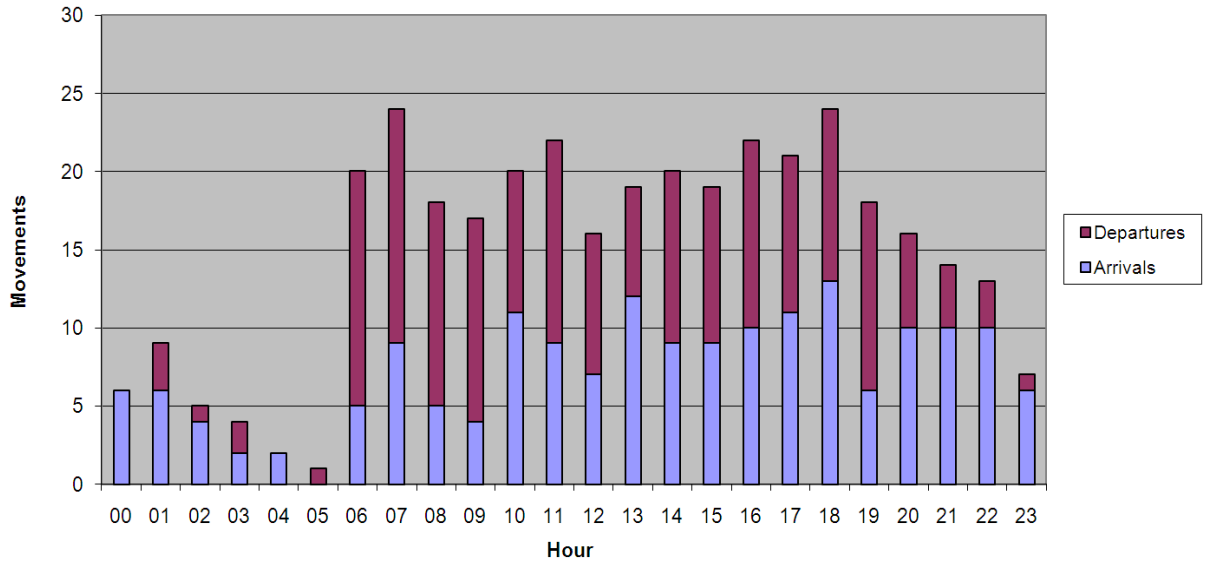
	Arrivals		Departures		Totals		
	Day	Night	Day	Night	Day	Night	Total
Jan	3,286	307	3,400	158	**6,686**	**465**	**7,151**
Feb	3,167	263	3,311	140	**6,478**	**403**	**6,881**
Mar	3,520	331	3,675	154	**7,195**	**485**	**7,680**
Apr	3,447	508	3,810	181	**7,257**	**689**	**7,946**
May	3,951	690	4,382	252	**8,333**	**942**	**9,275**
Jun	4,076	764	4,540	267	**8,616**	**1,031**	**9,647**
Jul	4,067	780	4,619	256	**8,686**	**1,036**	**9,722**
Aug	3,747	733	4,240	233	**7,987**	**966**	**8,953**
Sep	3,905	710	4,411	220	**8,316**	**930**	**9,246**
Oct	3,883	614	4,232	229	**8,115**	**843**	**8,958**
Nov	3,188	210	3,286	134	**6,474**	**344**	**6,818**
Dec	3,245	249	3,372	156	**6,617**	**405**	**7,022**
Total	**43,482**	**6,159**	**47,278**	**2,380**	**90,760**	**8,539**	**99,299**



4.3. Annual Average Hourly Movements



4.4. Average Hourly Movements 7th Busiest Day of 2011 (8th July)



Generally the busiest times of the day for annual average hourly movements are 06:00-09:00, 13:00-16:00 and 18:00-21:00 hrs. However, on the 8th of July 2011 the peaks were 06:00–08:00, 10:00–12:00 and 16:00 – 19:00 hrs.

The busiest time for departing aircraft is 06:00-09:00 annually and 06:00-08:00 hrs on the 8th July 2011. The busiest time for arrivals is 13:00-14:00 annually and 18:00-19:00 on the 8th July 2011. The above graphs indicate a low level of average movements during the hours of 00:00–06:00, both annually and on the 7th busiest day of the year.

4.5. Departure Route Analysis

The following table reports the total number of departures on each flight route, differentiating between easterly (08) and westerly (26) operations. Night movements quoted below departed between 23:00 - 06:00, Mon-Sat and until 07:00 on Sunday.

		Clacton*		Compton		Olney		Other**		Heli	Total
		08	26	08	26	08	26	08	26		
Jan	Day	442	984	399	909	184	414	17	32	19	3,400
	Night	24	60	13	41	5	9	0	6	0	158
	Total	*466*	*1,044*	*412*	*950*	*189*	*423*	*17*	*38*	*19*	*3,558*
Feb	Day	407	987	383	872	162	419	13	44	24	3,311
	Night	22	48	14	36	3	14	2	1	0	140
	Total	*429*	*1,035*	*397*	*908*	*165*	*433*	*15*	*45*	*24*	*3,451*
Mar	Day	894	649	816	640	331	276	31	18	20	3,675
	Night	40	27	44	26	10	5	1	1	0	154
	Total	*934*	*676*	*860*	*666*	*341*	*281*	*32*	*19*	*20*	*3,829*
Apr	Day	800	759	826	752	317	285	16	17	38	3,810
	Night	49	46	32	38	8	6	0	1	1	181
	Total	*849*	*805*	*858*	*790*	*325*	*291*	*16*	*18*	*39*	*3,991*
May	Day	333	1,429	333	1,607	112	465	13	48	42	4,382
	Night	24	97	18	101	3	5	1	3	0	252
	Total	*357*	*1,526*	*351*	*1,708*	*115*	*470*	*14*	*51*	*42*	*4,634*
Jun	Day	347	1,506	360	1,600	105	519	16	48	39	4,540
	Night	23	109	21	93	2	13	2	3	1	267
	Total	*370*	*1,615*	*381*	*1,693*	*107*	*532*	*18*	*51*	*40*	*4,807*
Jul	Day	594	1,261	652	1,427	196	391	19	53	26	4,619
	Night	53	73	29	92	3	2	1	3	0	256
	Total	*647*	*1,334*	*681*	*1,519*	*199*	*393*	*20*	*56*	*26*	*4,875*
Aug	Day	321	1,364	303	1,622	94	469	10	43	14	4,240
	Night	20	91	5	101	0	11	1	3	1	233
	Total	*341*	*1,455*	*308*	*1,723*	*94*	*480*	*11*	*46*	*15*	*4,473*
Sep	Day	265	1,541	293	1,656	90	485	13	42	27	4,412
	Night	19	81	7	93	2	17	0	1	0	220
	Total	*284*	*1,622*	*300*	*1,749*	*92*	*502*	*13*	*43*	*27*	*4,632*
Oct	Day	346	1,481	375	1,374	124	452	8	42	29	4,231
	Night	22	77	15	82	6	24	0	2	1	229
	Total	*368*	*1,558*	*390*	*1,456*	*130*	*476*	*8*	*44*	*30*	*4,460*
Nov	Day	842	722	555	468	338	274	41	22	24	3,286
	Night	27	19	32	39	9	6	1	0	1	134
	Total	*869*	*741*	*587*	*507*	*347*	*280*	*42*	*22*	*25*	*3,420*
Dec	Day	6	1,551	3	1,155	1	603	0	35	18	3,372
	Night	4	82	3	49	0	15	0	3	0	156
	Total	*10*	*1,633*	*6*	*1,204*	*1*	*618*	*0*	*38*	*18*	*3,528*
Day Total		*5,597*	*14,234*	*5,298*	*14,082*	*2,054*	*5,052*	*197*	*444*	*320*	*47,278*
Night Total		*327*	*810*	*233*	*791*	*51*	*127*	*9*	*27*	*5*	*2,380*
Grand Total		5,924	15,044	5,531	14,873	2,105	5,179	206	471	325	49,658

** Clacton/Dover/Detling departures have been merged as the immediate flight routes follow the same path.*

*** This category relates to those aircraft that are not required to follow Noise Preferential Routes, such as Test/Training flights.*

4.6. Arrivals Route Analysis

The following table reports the total number of arrivals, differentiating between easterly (08) and westerly (26) operations. Night movements quoted below arrived between 23:00 - 06:00, Mon-Sat and until 07:00 on Sunday. This report also includes percentage figures for flights that have achieved a Continuous Descent Approach (CDA), helping reduce both noise and fuel consumption, which requires a section of level flight no greater than 2.5Nm following the descent from 5000ft altitude.

		08	26	Heli	Total	08 (%)	26 (%)	Total (%)
	Day	1,088	2,179	19	**3,286**	92	87	**89**
Jan	Night	89	218	0	**307**	65	75	**72**
	Total	***1,177***	***2,397***	***19***	***3,593***	***90***	***86***	***87***
	Day	953	2,190	24	**3,167**	93	87	**88**
Feb	Night	68	195	0	**263**	72	81	**79**
	Total	***1,021***	***2,385***	***24***	***3,430***	***92***	***86***	***88***
	Day	2,030	1,471	19	**3,520**	94	88	**91**
Mar	Night	174	157	0	**331**	69	77	**74**
	Total	***2,204***	***1,628***	***19***	***3,851***	***92***	***87***	***90***
	Day	1,802	1,608	37	**3,447**	94	87	**91**
Apr	Night	235	272	1	**508**	85	82	**84**
	Total	***2,037***	***1,880***	***38***	***3,955***	***93***	***86***	***90***
	Day	714	3,195	42	**3,951**	92	86	**87**
May	Night	108	582	0	**690**	84	83	**83**
	Total	***822***	***3,777***	***42***	***4,641***	***91***	***85***	***86***
	Day	755	3,282	39	**4,076**	93	86	**87**
Jun	Night	130	633	1	**764**	88	85	**86**
	Total	***885***	***3,915***	***40***	***4,840***	***92***	***86***	***87***
	Day	1,315	2,725	27	**4,067**	92	90	**91**
Jul	Night	284	496	0	**780**	86	89	**88**
	Total	***1,599***	***3,221***	***27***	***4,847***	***91***	***90***	***90***
	Day	622	3,111	14	**3,747**	94	90	**91**
Aug	Night	86	646	1	**733**	80	88	**87**
	Total	***708***	***3,757***	***15***	***4,480***	***92***	***90***	***90***
	Day	565	3,313	27	**3,905**	94	88	**88**
Sep	Night	96	614	0	**710**	85	85	**85**
	Total	***661***	***3,927***	***27***	***4,615***	***93***	***87***	***88***
	Day	761	3,091	31	**3,883**	91	84	**85**
Oct	Night	126	488	0	**614**	86	85	**85**
	Total	***887***	***3,579***	***31***	***4,497***	***90***	***84***	***85***
	Day	1,763	1,403	22	**3,188**	88	79	**83**
Nov	Night	111	98	1	**210**	80	62	**71**
	Total	***1,874***	***1,501***	***23***	***3,398***	***87***	***77***	***82***
	Day	23	3,204	18	**3,245**	67	78	**78**
Dec	Night	14	235	0	**249**	29	74	**72**
	Total	***37***	***3,439***	***18***	***3,494***	***51***	***78***	***78***
Day Total		***12,391***	***30,772***	***319***	***43,482***	***92%***	***86%***	***87%***
Night Total		***1,521***	***4,634***	***4***	***6,159***	***82%***	***84%***	***83%***
Grand Total		***13,912***	***35,406***	***323***	***49,641***	**91%**	**85%**	**87%**

4.7. Flight routes and sample flight tracks

Figures 4.8 and 4.9 show indicative flight routes for easterly and westerly operations. Flight routes shown are typical 3km swathes for departing aircraft on Noise Preferential Routings (NPRs) and arrivals which are established on final approach. Departure routes are valid up to an altitude of 3000ft during the daytime and 4000ft at night, after which time Air Traffic Control at the London Terminal Control Centre (LTCC) can give the aircraft a more direct heading.

Figures 4.10 and 4.11 display actual radar flight data taken over a 24 hour period during summer 2011 for both westerly and easterly operations. Arriving traffic is shown in red with departures in green.

Figures 4.12 and 4.13 show the same 24 hour periods as above, displaying the aircraft radar data in altitude bands up to 10,000ft above mean sea level. These radar tracks show a single mode of operation only i.e. easterly or westerly operations and include both arriving and departing aircraft.

Figures 4.14, 4.15 and 4.16 display aircraft track density plots for the summer period 16th June – 15th September 2011. A track density plot is a map which displays the pattern of aircraft flight tracks passing over the region around the Airport during a specified period. The system analyses the number of flights passing over each grid element of an array defined by the user.

The track density plot takes into account all London Luton aircraft and provides a useful indication of the general patterns for flight operations.

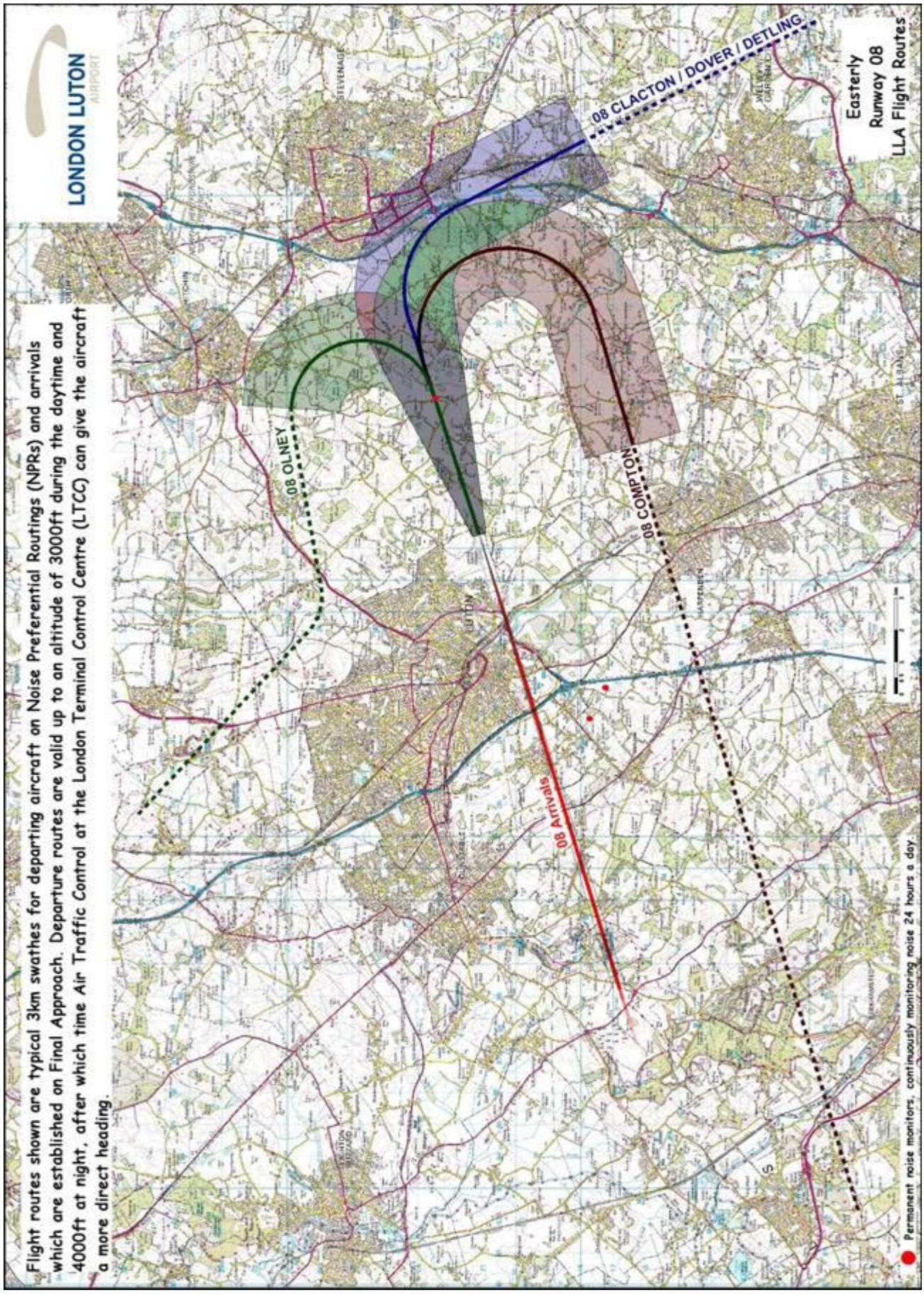
Figures 4.14 and 4.15 show arrivals or departures only, with 4.16 showing all LLA movements.

The colour coding from blue to yellow represents the range 3 to over 150 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element during the 92 day summer period was less than 3 flights.

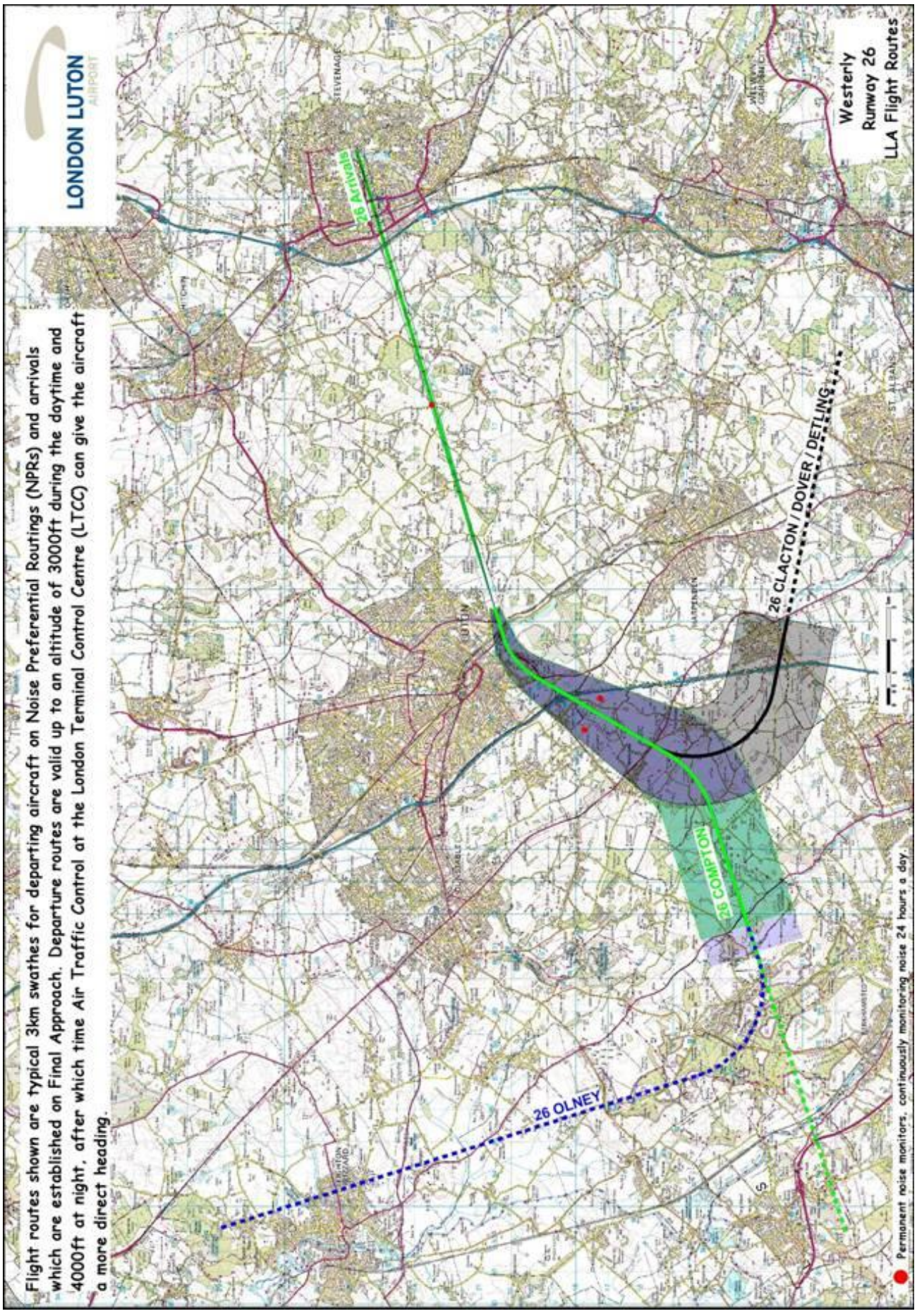
The yellow areas represent locations where operations are more densely concentrated over the given period.

It should be noted that the following sample flight tracks only include operations for LLA and overflights from other Airports have been omitted for clarity.

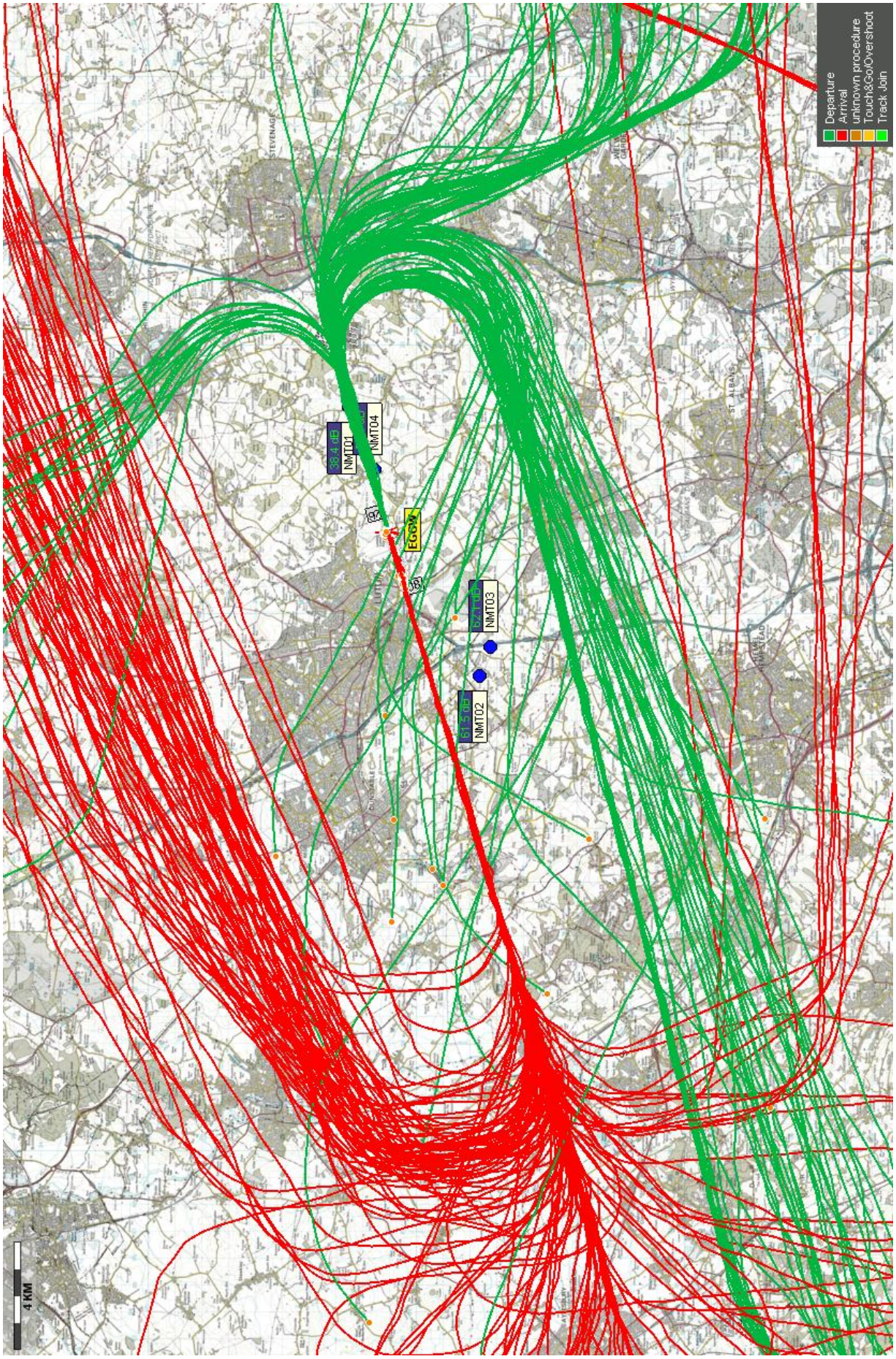
4.8. Plan showing Easterly (08) flight routes



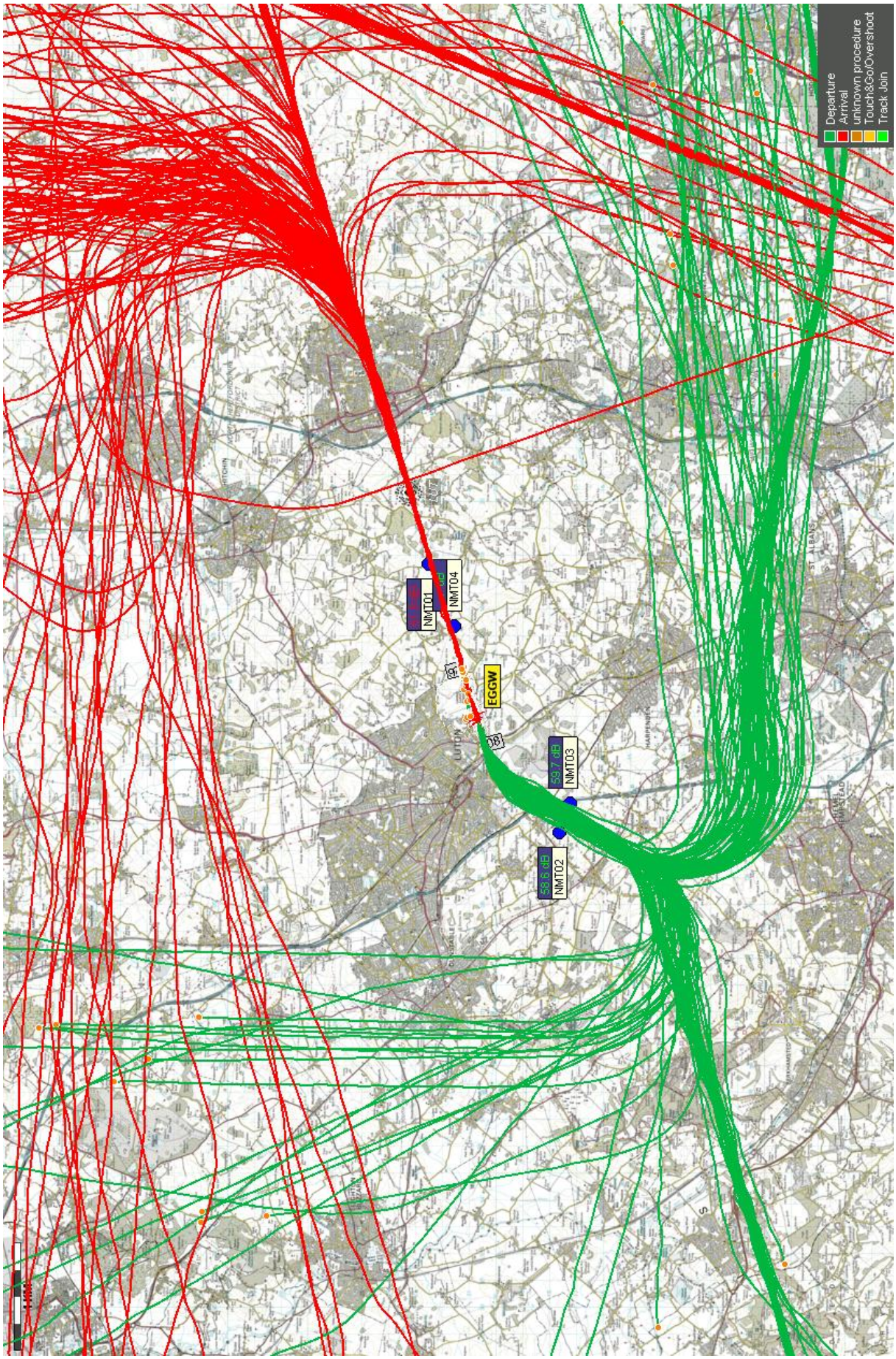
4.9. Plan showing Westerly (26) flight routes



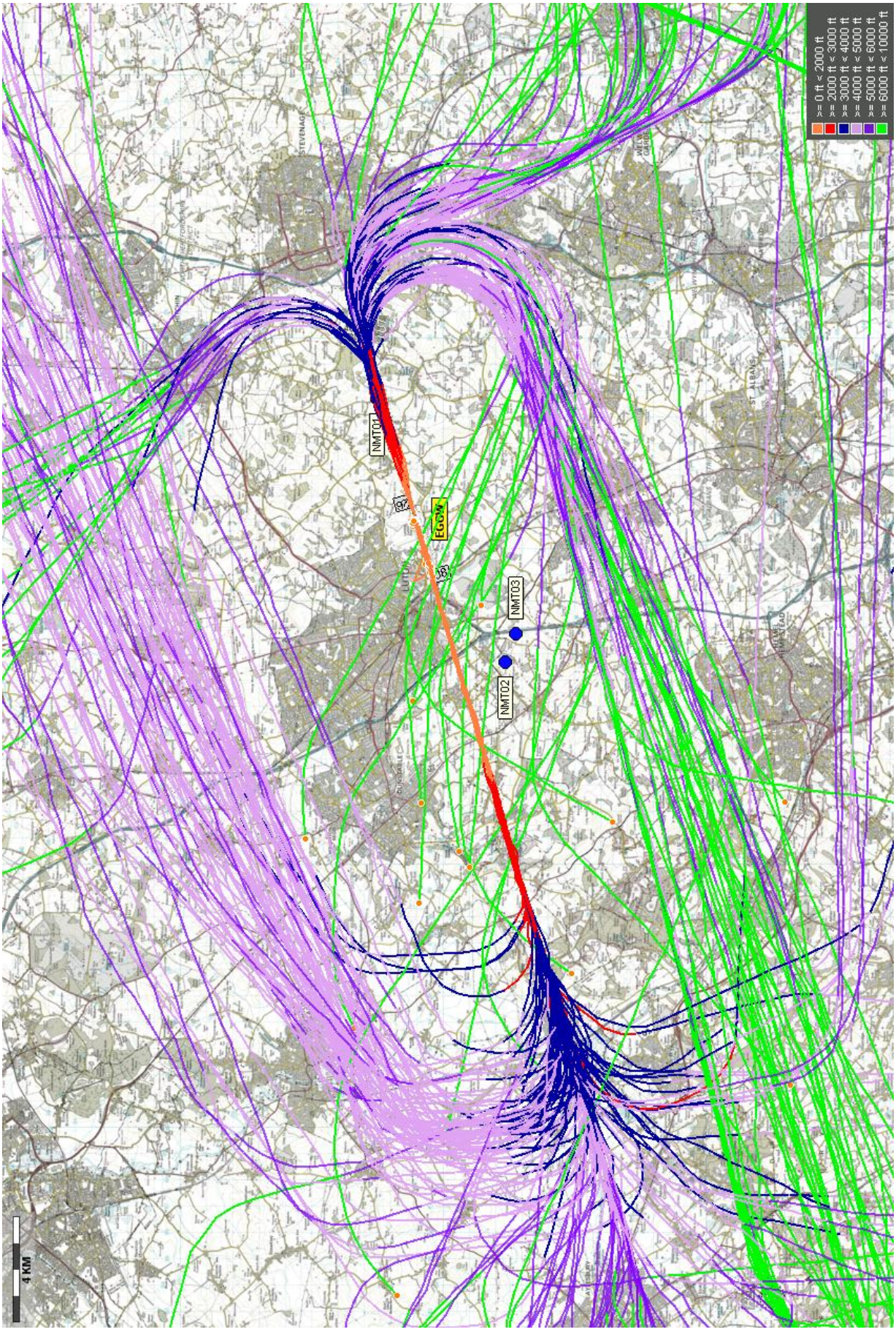
4.10. Arrivals and Departures – Easterly (08) Flight Routes (24 hour period)



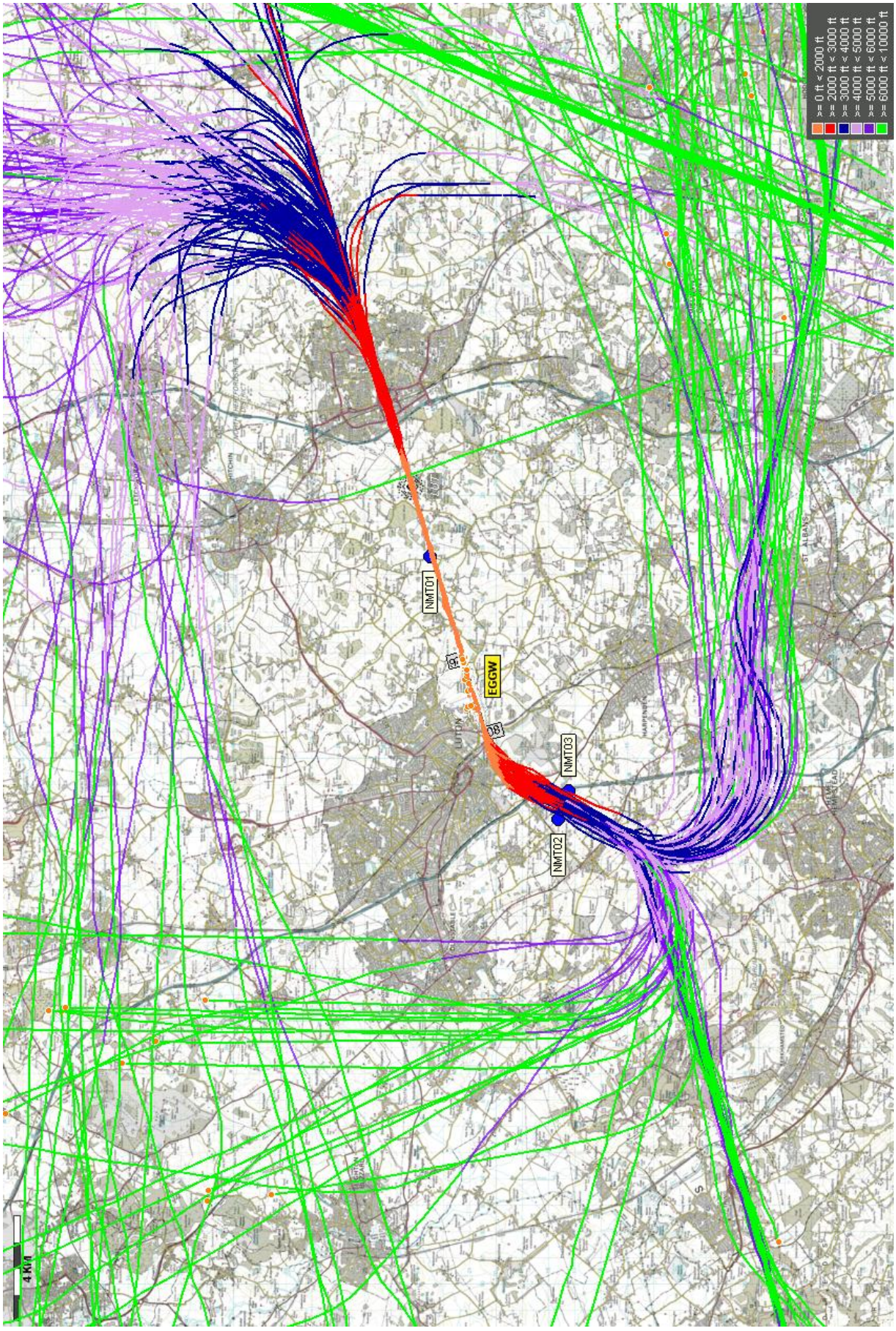
4.11. Arrivals and Departures – Westerly (26) Flight Routes (24 hour period)



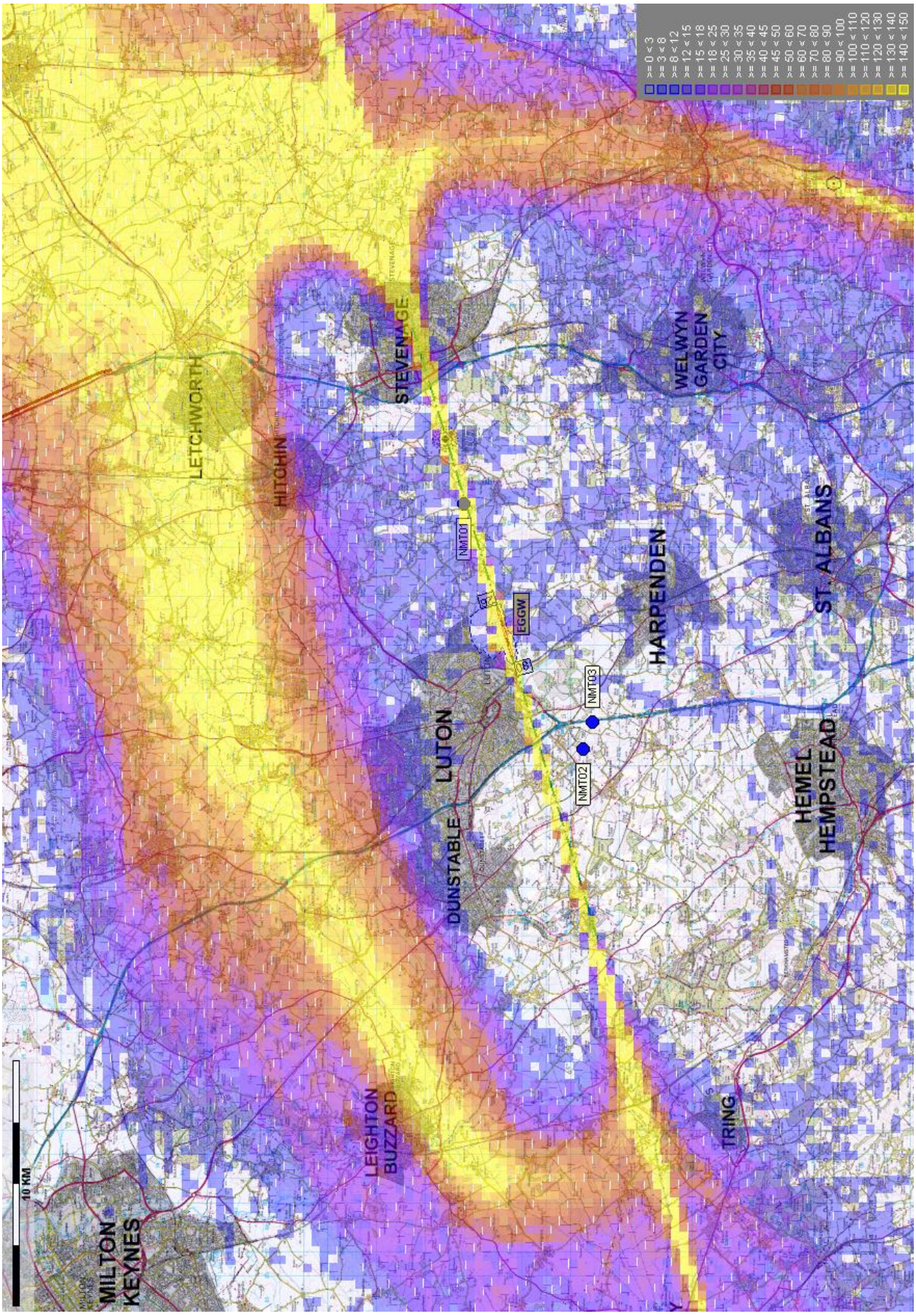
4.12. Flight Levels – Easterly (08) Flight Routes (24 hour period)



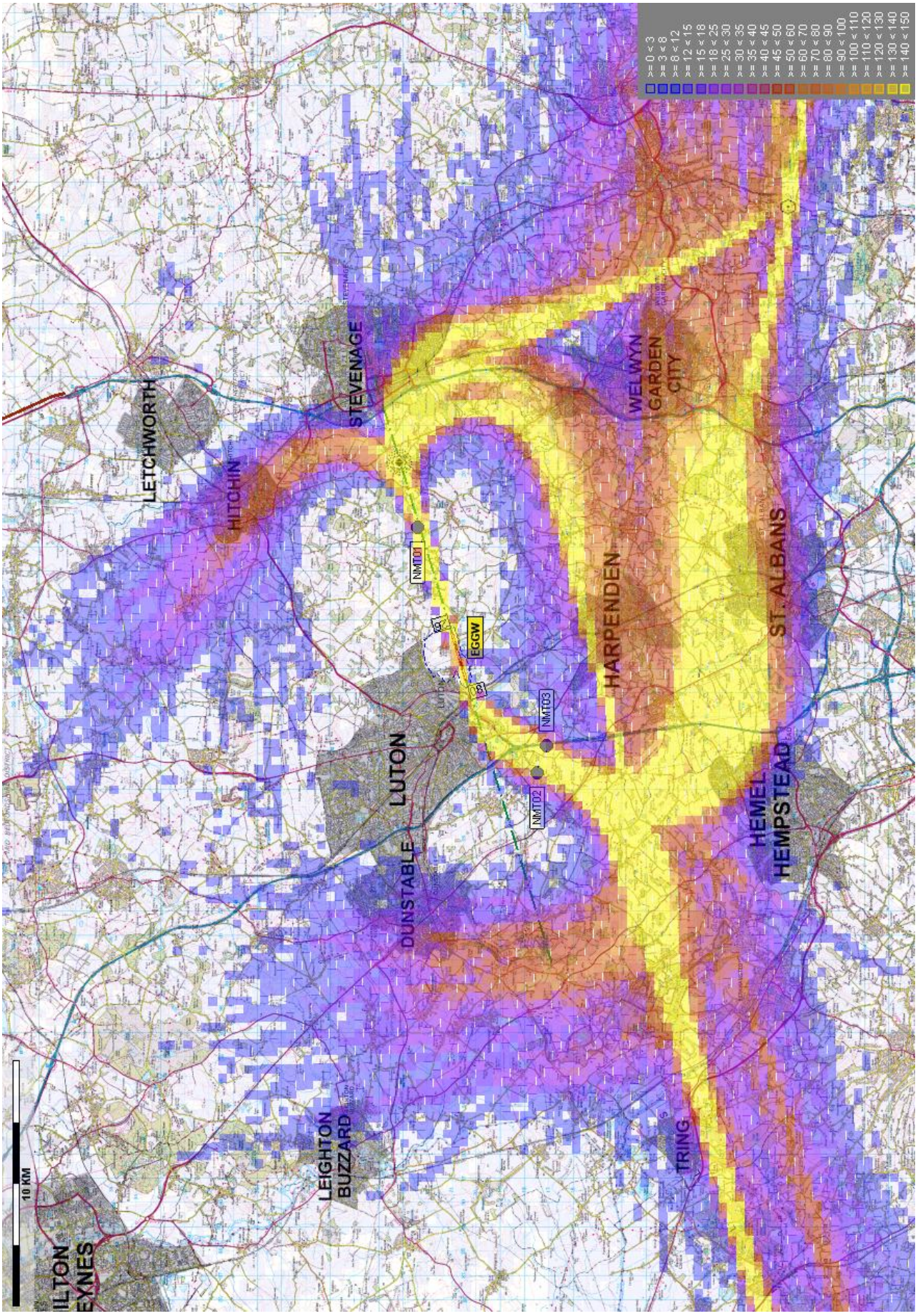
4.13. Flight Levels – Westerly (26) Flight Routes (24 hour period)



4.14. Plot Density – 16th June – 15th September 2011 - Arrivals only



4.15. Plot Density – 16th June – 15th September 2011 - Departures only



4.16. Plot Density – 16th June – 15th September 2011 - Arrivals and Departures

5. Noise Monitoring Data

The aircraft noise generated by the operation of the Airport has always been an important consideration and is incorporated in the planning framework for the area in which the Airport is located (see Section 10). Regard must be paid to the Borough of Luton Local Plan, so aircraft noise is monitored and reviewed by the LLACC on a quarterly basis.

Furthermore, in response to the Environmental Noise Directive (2002/49/EC), which requires all Member States within the European Union to produce Noise Maps and Action Plans for the main sources of environmental noise, including airports, a Draft Noise Action Plan was prepared by the Airport during 2009. This was produced in partnership with the London Luton Airport Consultative Committee, the Air Traffic Control provider and airline partners and a 16 week consultation period on this document was launched on 28th September 2009. Following consideration of consultation responses and taking into account these views, a final Draft Noise Action Plan was submitted to the Department for Environment, Food and Rural Affairs (DEFRA), for approval, at the end of January 2010. London Luton Airport published the final Noise Action Plan in January 2012, following formal adoption by the Secretary of State for Environment, Food and Rural Affairs.

5.1. Departure Noise Levels

LLAOL uses the ICAO standard for noise monitoring at the Airport. This covers all times of the day and night and all seasons, but it is standard practice that only departures are reported. Figures 4.8 and 4.9 show the locations of the monitoring points, which are set at 6,500m from the aircraft start of roll, at either end of the runway. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area, which is separately measured by Leq. The maximum-recorded noise level for each departure is used. All aircraft type departures are recorded not just jets, however helicopters and small light aircraft are not required to follow Noise Preferential Routings (NPRs) so they will not be recorded.

The detection threshold for the noise monitoring terminals is set at the lowest level to record the maximum number of aircraft noise events. However, a number of smaller aircraft types such as business jets and propeller aircraft, typically with a Maximum Take-Off Weight (MTOW) of less than 30,000kg, get very close to but do not reach the detection threshold. Ambient background noise is also an important factor in detecting aircraft noise as strong winds and specific incidents such as loud road traffic, emergency vehicle sirens, lawn mowers, tractors, drills etc. can register noise levels louder than an aircraft overhead, which results in not all aircraft movements being correlated with noise events. Generally the louder noise events have more certainty of being correlated with aircraft movements.

During 2011 no departures exceeded the 94dB(A) daytime noise violation level, whilst there were 12 night noise violations (a combination of A300 cargo jets and older generation executive jet aircraft). However, continuous monitoring indicates that the vast majority of aircraft operated with individual maximum noise levels well below the current violation levels.

It should be noted that the number of night noise violations decreased this year, due primarily to stringent measures introduced within the latest version of the voluntary Night Noise Policy (Issue 8), effective 1st April 2010 (see Appendix A). Following a review, involving the London Luton Airport Consultative Committee, this new policy lowered the night noise violation level from 85dB(A) to 82dB(A), which is now lower than any UK airport and any operators exceeding this departure noise level are fined accordingly (between 300% and 600% of a full runway charge). Furthermore this policy now includes a scheduling ban at night for the older and noisiest aircraft classified above QC2. These measures help encourage airlines to operate modern, quieter generation aircraft and forms part of the Airport's commitment to help minimise disturbance for local communities whilst balancing the environmental impact and the economic benefit of a successful airport.

During the daytime 99% of departing aircraft recorded maximum noise levels less than 79dB(A), with 88% registering below 76dB(A) and 41% of correlated daytime departures registering below 73dB(A). Throughout the year 332 correlated daytime departures (1%) registered maximum noise levels above 79dB(A) but there were no daytime noise exceedences.

The night period is taken as 23:00 – 06:00 local time, Monday to Saturday, and until 07:00 on a Sunday. During the night 97% of correlated departures recorded maximum noise levels below 79dB(A), with 88% below 76dB(A) and 53% of correlated night departures registering below 73dB(A). During the year 56 correlated night departures (3%) registered maximum noise levels above 79dB(A) with 12 correlated departures exceeding the night noise violation level of 82dB(A). Details of these noise penalties are listed in section 5.5.

5.2. Noise and Track Monitoring System

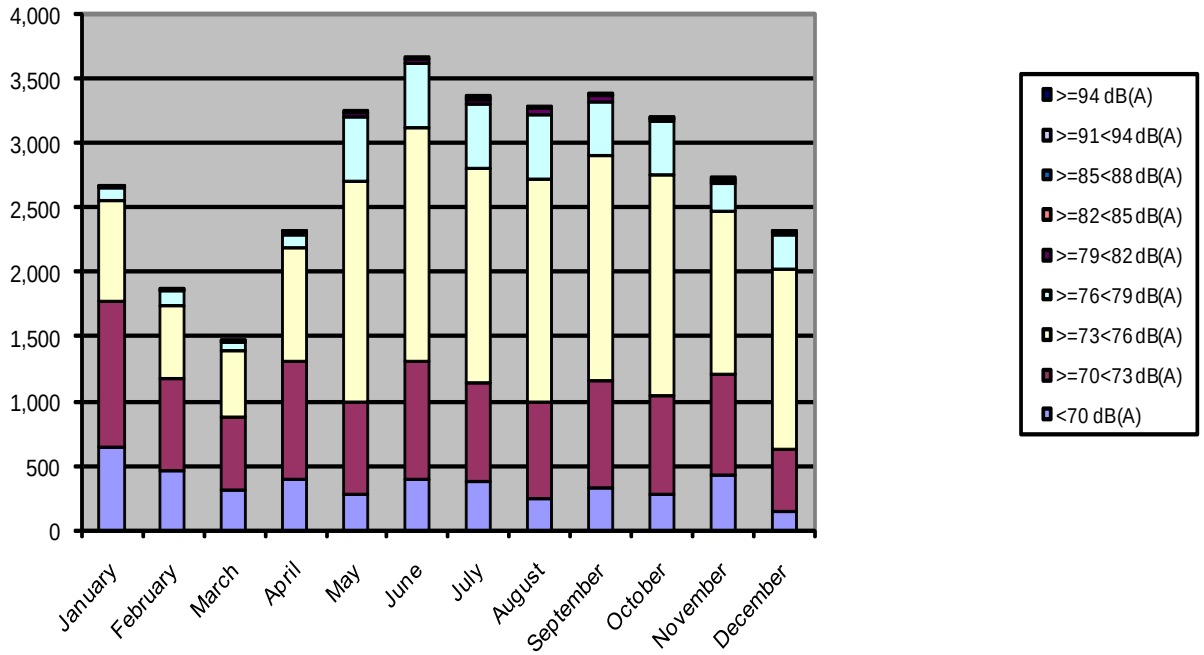
The Topsonic Noise & Track Monitoring system has been operational for 100% of the time during 2011. New features and system enhancements continue to improve the functionality and capabilities available to the Airfield Environment Office and the Topsonic system has been utilised in compiling the details within this report.

In January 2012 the airport launched **TraVis**, a new online flight-tracking tool, which enables the general public to see for themselves the actual flown tracks of Luton aircraft departures and arrivals. This can be viewed online at the following link on the airport website. http://www.london-luton.co.uk/en/flighttracking/ .

5.3. Daytime Noise Levels

The following table identifies maximum daytime noise levels recorded by departing aircraft at the fixed noise monitoring terminals between the hours of 06:00 and 23:00 local time, Monday to Saturday and from 07:00 until 23:00 on Sunday.
(Any aircraft exceeding the Daytime Noise Violation Limit of 94dB(A) is fined accordingly)

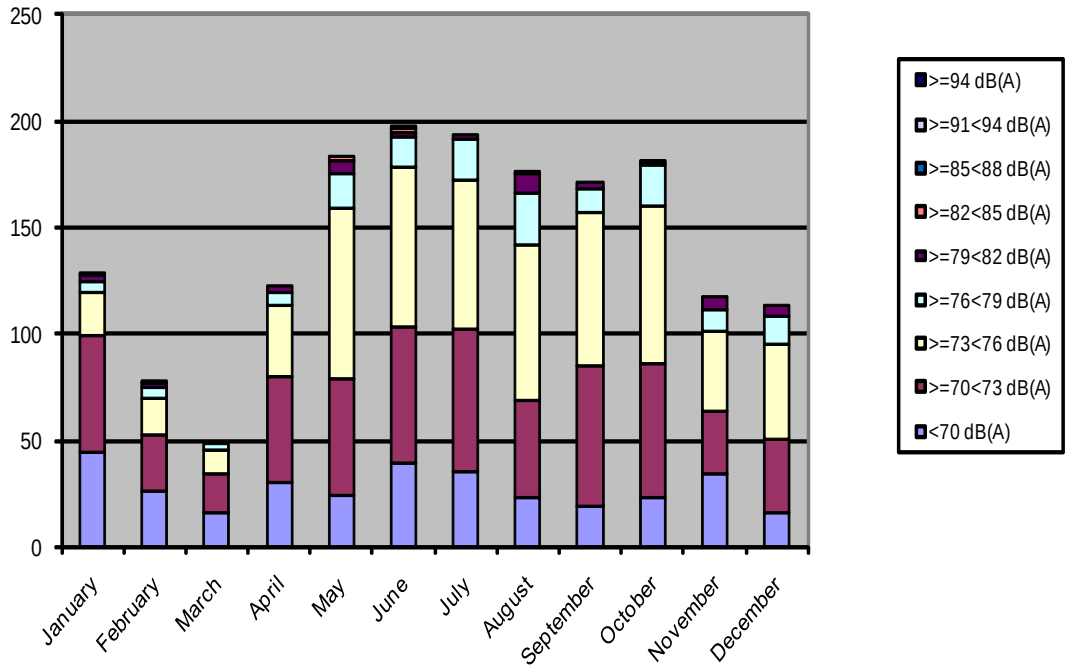
	Number of Departures (Daytime)										
	<70 dB(A)	>=70<73 dB(A)	>=73<76 dB(A)	>=76<79 dB(A)	>=79<82 dB(A)	>=82<85 dB(A)	>=85<88 dB(A)	>=88<91 dB(A)	>=91<94 dB(A)	>=94 dB(A)	Total
January	646	1,131	777	106	9	1	0	1	0	0	2,671
February	462	726	567	110	6	0	1	0	0	0	1,872
March	323	568	504	66	1	1	0	0	0	0	1,463
April	398	910	882	114	5	2	1	0	0	0	2,312
May	289	706	1,724	491	35	0	2	0	0	0	3,247
June	402	908	1,825	498	31	6	0	0	0	0	3,670
July	390	757	1,669	492	40	6	3	3	0	0	3,360
August	246	757	1,727	503	40	0	1	0	0	0	3,274
September	341	830	1,747	413	40	10	2	2	0	0	3,385
October	281	772	1,712	408	22	4	5	1	0	0	3,205
November	438	777	1,267	215	18	8	3	0	0	0	2,726
December	158	474	1,394	268	15	3	4	0	0	0	2,316
% Total	*13.1%*	*27.8%*	*47.1%*	*11.0%*	*0.8%*	*0.1%*	*0.1%*	*0.0%*	*0.0%*	*0.0%*	100.0%
Total	**4,374**	**9,316**	**15,795**	**3,684**	**262**	**41**	**22**	**7**	**0**	**0**	**33,501**



5.4. Night Noise Levels

The following table identifies maximum night time noise levels recorded by departing aircraft at the fixed noise monitoring terminals between the hours of 23:00 and 06:00 local time, Monday to Saturday and until 07:00 on Sunday morning.
(Any aircraft exceeding the Night Noise Violation Limit of 82dB(A) is fined accordingly)

	Number of Departures (Night)										
	<70 dB(A)	>=70<73 dB(A)	>=73<76 dB(A)	>=76<79 dB(A)	>=79<82 dB(A)	>=82<85 dB(A)	>=85<88 dB(A)	>=88<91 dB(A)	>=91<94 dB(A)	>=94 dB(A)	Total
January	45	54	21	5	3	1	0	0	0	0	129
February	26	27	17	5	2	1	0	0	0	0	78
March	16	18	12	3	0	0	0	0	0	0	49
April	30	50	34	6	3	0	0	0	0	0	123
May	24	55	80	16	6	3	0	0	0	0	184
June	39	64	75	15	2	2	1	1	0	0	199
July	35	67	70	20	2	0	0	0	0	0	194
August	23	46	73	24	9	1	0	0	0	0	176
September	19	66	72	11	3	0	0	0	0	0	171
October	23	63	74	19	1	2	0	0	0	0	182
November	34	30	37	10	7	0	0	0	0	0	118
December	16	35	44	13	6	0	0	0	0	0	114
% Total	*19.2%*	*33.5%*	*35.5%*	*8.6%*	*2.6%*	*0.6%*	*0.1%*	*0.1%*	*0.0%*	*0.0%*	***100%***
Total	**330**	**575**	**609**	**147**	**44**	**10**	**1**	**1**	**0**	**0**	**1,717**



5.5. Noise Violations

LLAOL operates a noise violation policy whereby a surcharge of between 300% and 600% of the combined Landing and Navigation Service Charge is applied in respect of any landing prior to a take-off on which noise violation levels, as set out below, are exceeded. These violation limits encourage airlines to operate modern and quieter aircraft types.

The daytime noise violation level of 94dB(A) is in line with the other major London airports whilst the current night noise violation level of 82dB(A) is now lower than at any other UK airport.

For Day Flights

06:00 – 22:59 Local Time (Monday to Saturday)
07:00 – 22:59 Local Time (Sunday)

>94 dB(A) 400% surcharge

For Night Flights

23:00 – 05:59 Local Time (Monday to Saturday)
23:00 – 06:59 Local Time (Sunday)

>82 – 85 dB(A)	300% surcharge
>85 – 88 dB(A)	500% surcharge
>88 dB(A)	600% surcharge

5.1.1. Daytime Noise Violations during 2011

There were no violations of the daytime noise level in 2011, in line with 2010.

5.6. Night Noise Violations during 2011

There were a total of 12 violations of the 82dB(A) night noise violation level in 2011 (details below), compared to 19 in 2010.

Date / Time (Local)	Aircraft Type	Noise Level	Penalty
19/01/2011 02:31 hrs	A300 (MNG Cargo)	82.4dB(A)	300% of runway charge
16/02/2011 03:17 hrs	A300 (MNG Cargo)	83.0dB(A)	300% of runway charge
13/05/2011 03:31 hrs	A300 (MNG Cargo)	82.6 dB(A)	300% of runway charge
20/05/2011 03:43 hrs	A300 (MNG Cargo)	82.5dB(A)	300% of runway charge
25/05/2011 03:00 hrs	A300 (MNG Cargo)	83.1dB(A)	300% of runway charge
15/06/2011 23:17 hrs	Gulfstream 3 Executive Jet	88.6dB(A)	600% of runway charge
17/06/2011 03:43 hrs	A300 (MNG Cargo)	82.3dB(A)	300% of runway charge
28/06/2011 23:37 hrs	Gulfstream 3 Executive Jet	86.0dB(A)	500% of runway charge
29/06/2011 02:52 hrs	A300 (MNG Cargo)	84.3dB(A)	300% of runway charge
19/08/2011 03:13 hrs	A300 (MNG Cargo)	83.2dB(A)	300% of runway charge
17/10/2011 01:20 hrs	A300 (MNG Cargo)	82.9dB(A)	300% of runway charge
24/10/2011 01:44 hrs	FA50 Executive Jet	83.3dB(A)	300% of runway charge

6. Noise Contours

6.1. Leq

Since 1989, the preferred measure of aircraft noise has been the A-weighted equivalent noise level, Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK, the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700 – 2300 for an average day between the 16th June and 15th September. In addition, London Luton Airport also produces contours for the 8 hour night period between 2300 and 0700 for an average summer night in terms of the LAeq, 8h indicator.

The daytime contours show the LAeq,16h values in 3 dB(A) steps from 57 dB(A) to 72 dB(A). The night contours show the LAeq, 8h values also in 3 dB(A) starting at 48 dB(A). These values relate to guidance provided in Planning Policy Guidance Note 24 – Planning & Noise.

Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the airport and also the departure routes flown. In addition, changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, known as the modal split, which is determined by the prevailing wind direction.

The Aircraft Noise Model

The noise contours for the Airport are produced using INM (the Integrated Noise Model), which is the method used by many other Airports in the UK.

The contours for 2011 were produced using INM version 7.0b, in line with 2010 and therefore a direct comparison year on year is possible.

It can be seen that there has been a reduction in the daytime and night time contour areas from 2010 to 2011. Since there has been a small increase in the total number of movements between 2010 and 2011 and only a slight change in modal split, the change in fleet mix is likely to be the reason for the reduction in contour area, both day and night.

The 2011 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

6.2. Annual Noise Contours Summer 2011

Work has been completed on the production of the annual noise contours for summer 2011 covering the standard summer period from the 16th June to the 15th September inclusive.

The daytime results are shown below and are compared with the equivalent results for the previous summer, the base year of 1984, and also the predicted contour for 1999:

Contour areas (Daytime)

$L_{Aeq, 16\ hour}$ Day time	*1984 (km^2)*	*1999 (km^2)*	2010 (km^2)	2011 (km^2)	Difference 2010-2011 (km^2)
>72	*1.63*	*1.5*	0.8	0.8	0.0
>69	*2.80*	*2.5*	1.3	1.3	0.0
>66	*4.86*	*4.4*	2.3	2.3	0.0
>63	*9.1*	*7.3*	4.3	4.3	0.0
>60	*17.18*	*11.8*	7.7	7.6	-0.1
>57	***31.52***	***19.6***	**13.1**	**12.8**	**-0.3**

The night-time results are shown below and are compared with the results for the previous summer, the base year of 1984, also the predicted contour for 1999:

Contour areas (Night-time)

$L_{Aeq, 8\ hour}$ Night time	*1984 (km^2)*	*1999 (km^2)*	2010 (km^2)	2011 (km^2)	Difference 2010-2011 (km^2)
>72	*0.79*	*1.1*	0.4	0.4	0.0
>69	*1.39*	*1.8*	0.6	0.6	0.0
>66	*2.42*	*3.0*	1.0	0.9	-0.1
>63	*4.01*	*5.2*	1.7	1.6	-0.1
>60	*7.06*	*8.3*	3.1	3.0	-0.1
>57	*13.05*	*13.2*	5.7	5.6	-0.1
>54	*24.48*	*21.6*	10.1	9.7	-0.4
>51	*44.92*	*36.0*	17.6	16.7	-0.9
>48	***85.04***	***60.6***	**32.2**	**30.1**	**-2.1**

The modal split for summer 2011 was 80% westerly / 20% easterly compared with 78% / 22% W/E in summer 2010.

In terms of movements, there was an increase in the total daytime movements from 22,796 to 23,570 and an increase in night-time movements from 4,109 to 4,446 (over the 92 day contour period), year on year.

6.3. Contour Population Counts

The population counts for this year were calculated using the CACI Ltd, 2011 postcode database, compared to the use of Ordnance Survey Mastermap Address-Point (2007) data and Office of National Statistics Census Data (2001) for 2010 population count analysis . For this reason a direct comparison year on year is not possible.

Procedure

Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted.

6.4. Day-Time Contour Results

$L_{Aeq, 16\ hour}$ Day time	2010 Dwellings	2010 Population	2011 Dwellings	2011 Population
>72	0	0	0	0
>69	0	0	0	0
>66	2	5	3	6
>63	90	228	124	368
>60	718	1,817	717	1,997
>57	**1,911**	**4,598**	**1,967**	**5,217**

6.5. Night-Time Contour Results

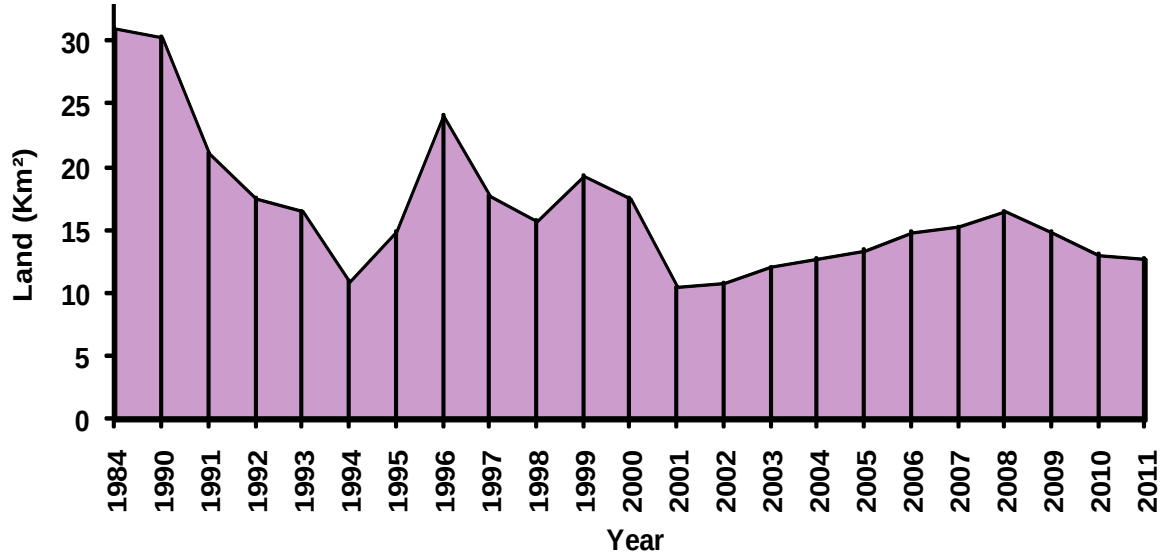
$L_{Aeq, 8hour}$ Night time	2010 Dwellings	2010 Population	2011 Dwellings	2011 Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	13	30	9	18
>57	435	1,101	430	1,183
>54	1,036	2,583	998	2,782
>51	2,761	6,319	2,718	6,790
>48	**5,250**	**11,800**	**5,353**	**12,744**

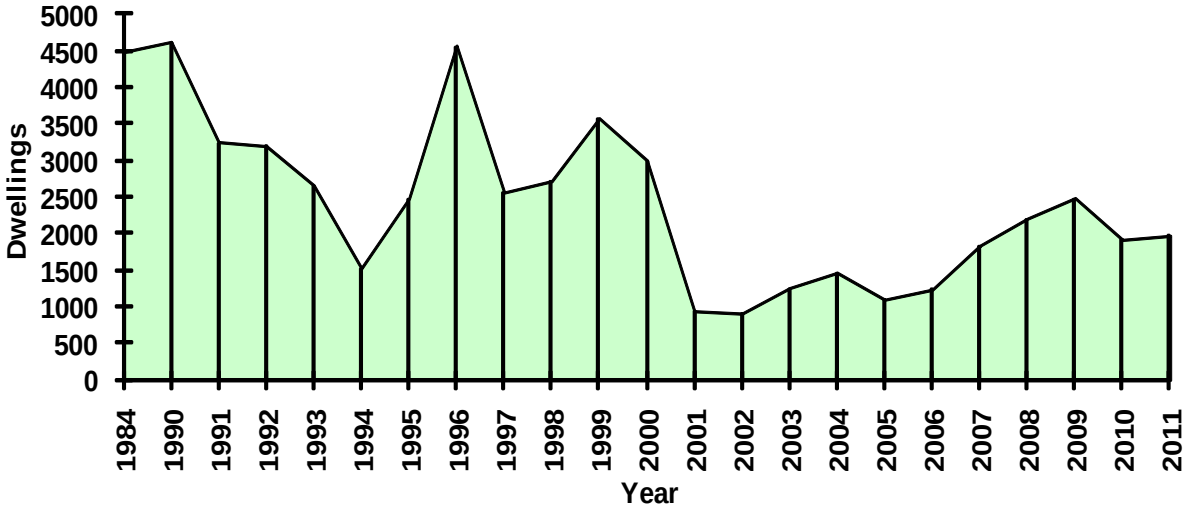
In the above tables the results for households and resident populations are cumulative, i.e. values presented for larger contours (geographically) include the values for those contours within them.

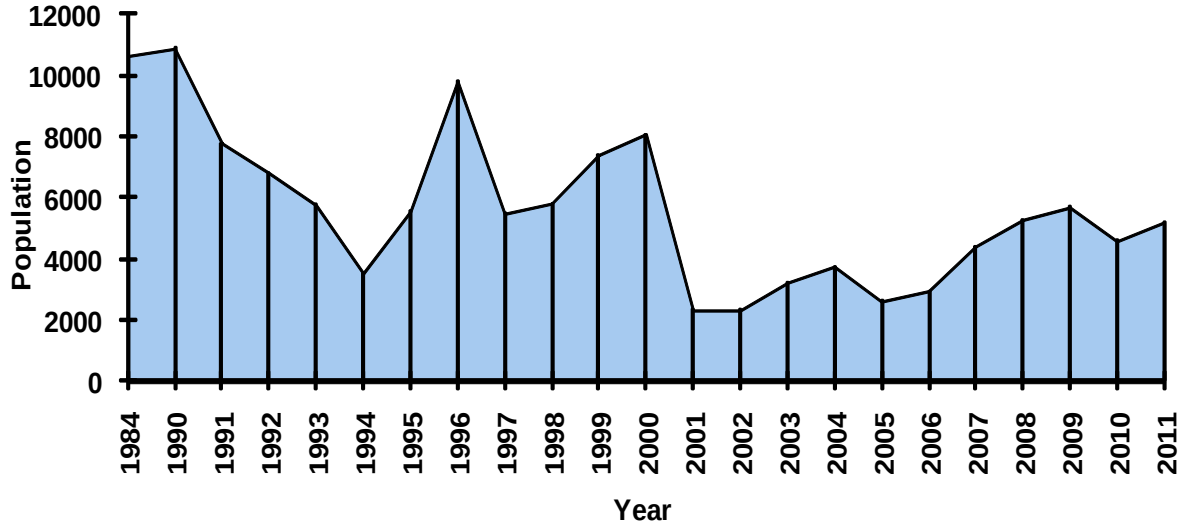
In general methodology shows slightly lower results for the dwelling counts, which are within 5% of the 2010 AMR results at all contour bands other than the 60 dB LAeq,8hr band where the absolute numbers are very low. The population counts indicate slightly higher results than the 2010 AMR, though they are still within 6% for all contour bands again with the exception of the 60 dB LAeq,8hr band.

The update of the population database from 2010 to 2011 results in a similar increase in both dwelling and population counts of between 6% and 11% for all contour bands from 48 to 57 dB LAeq,8hr. These two factors combined mean that despite the 2011 contours being smaller in area terms than in 2010, the dwelling counts reported in Tables 6.4 and 6.5 are similar to those reported in the 2010 AMR and population counts are around 7% to 8% higher.

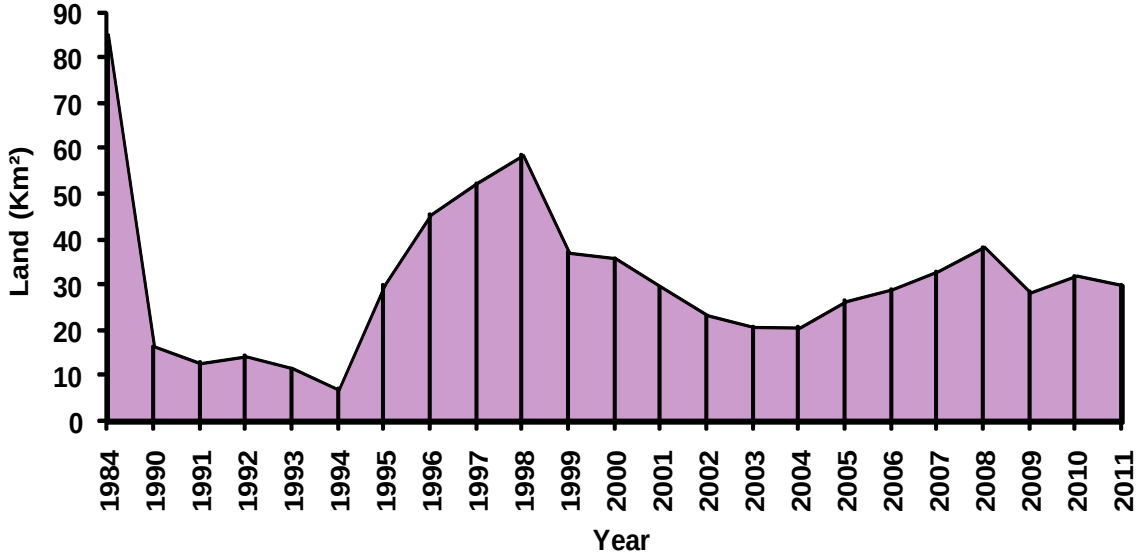
6.6. Noise Impact Within 16-Hour (Day) Leq Contours

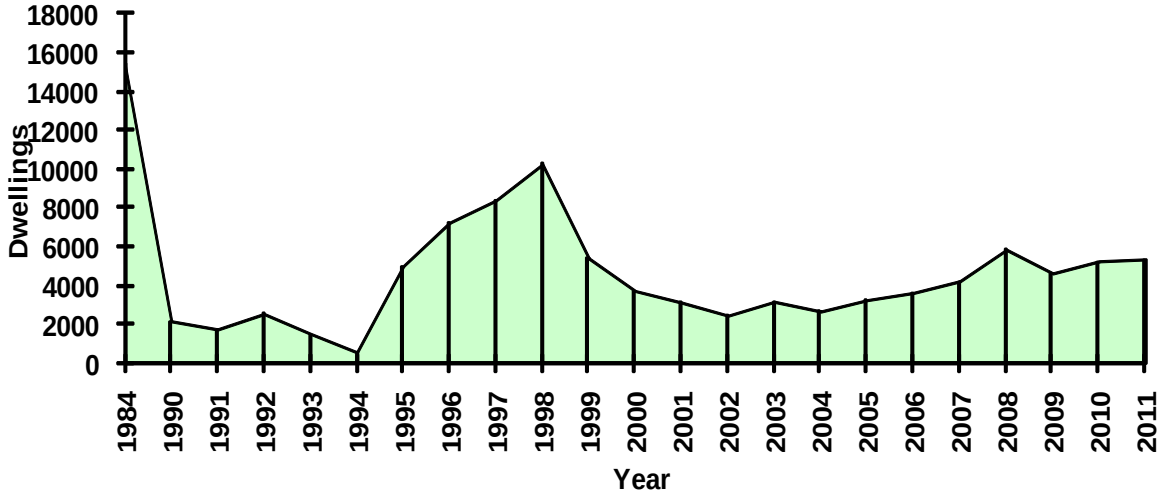


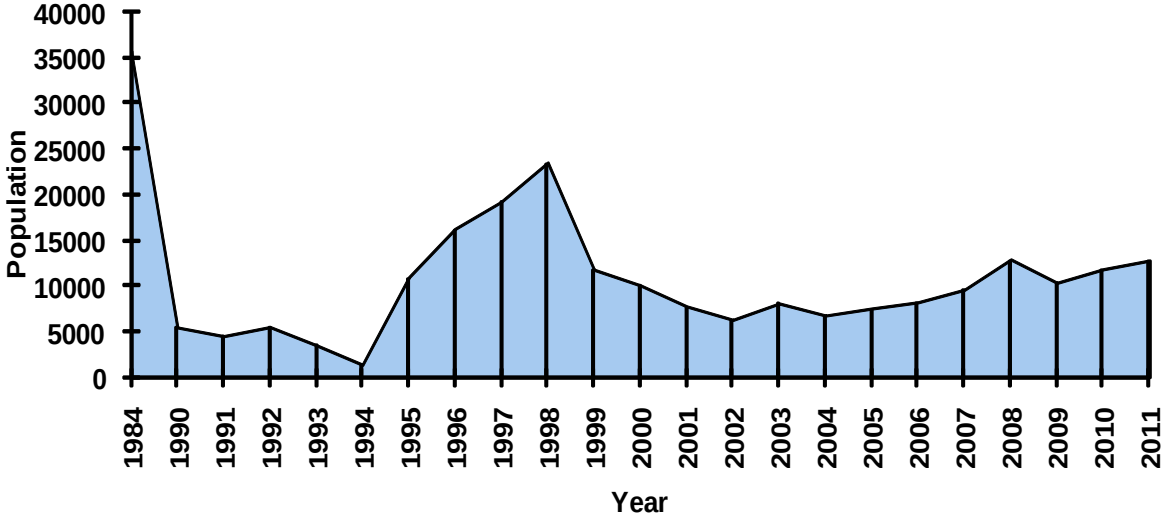




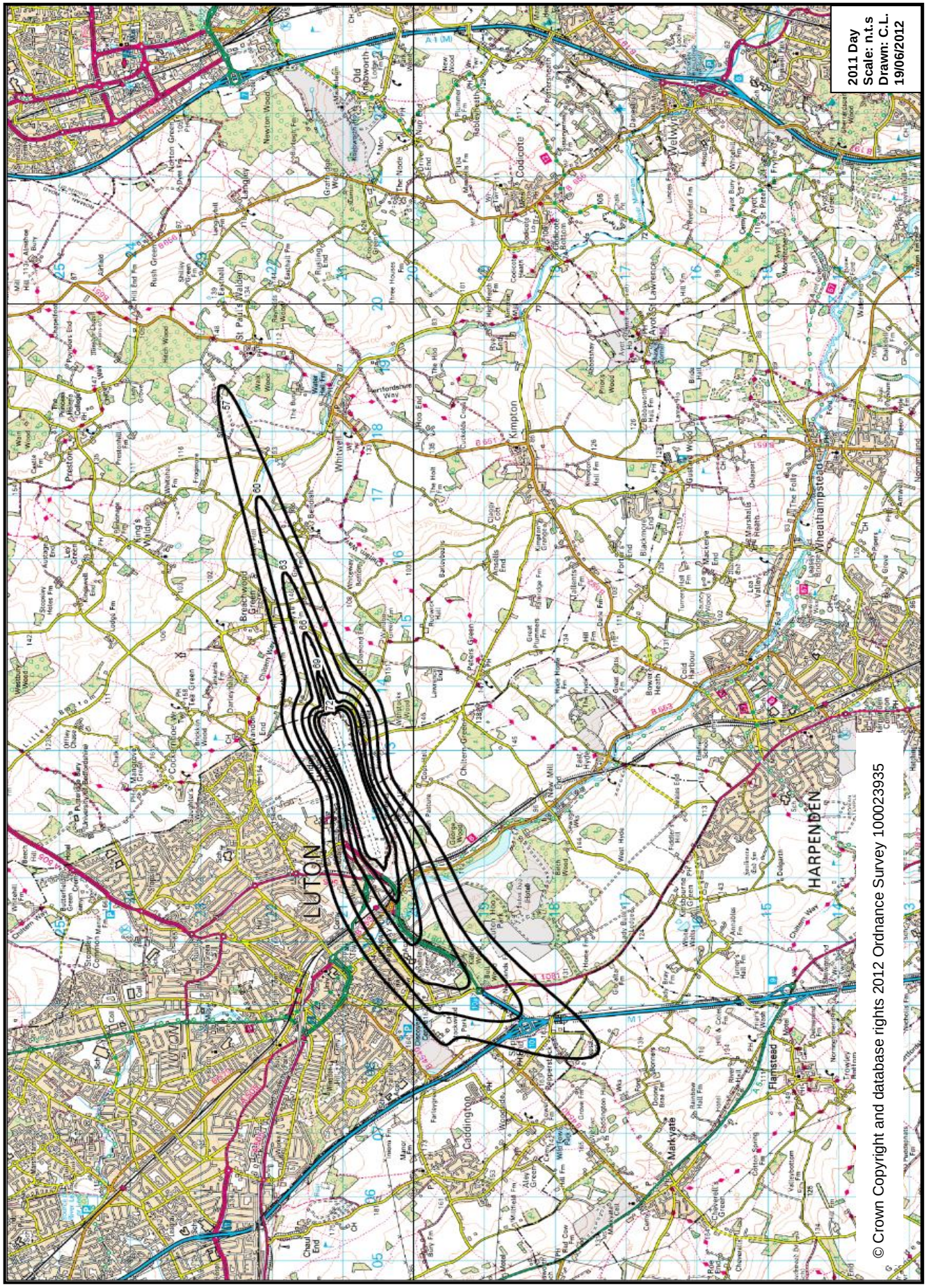
6.7. Noise Impact Within 8-Hour (Night) Leq Contours



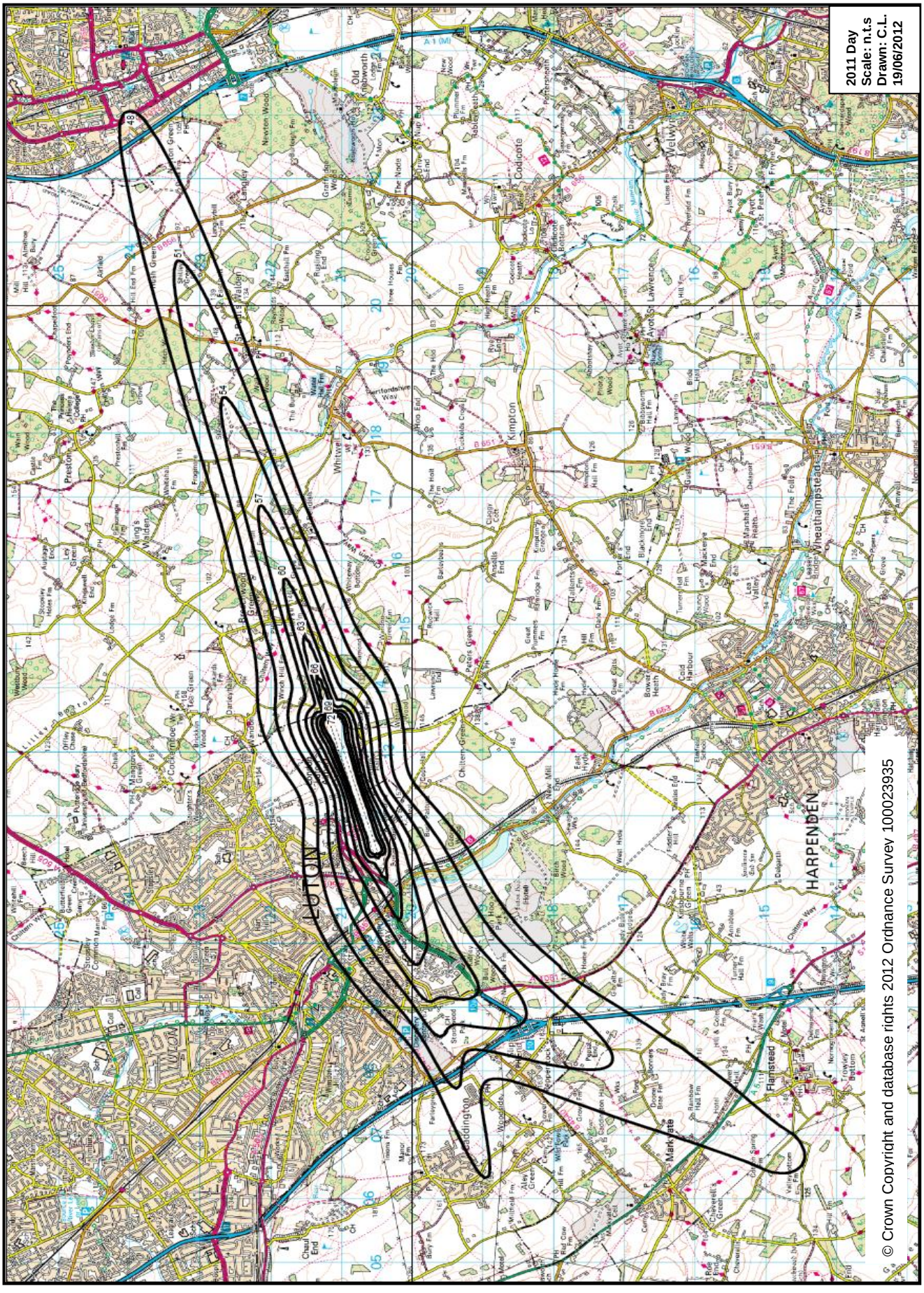




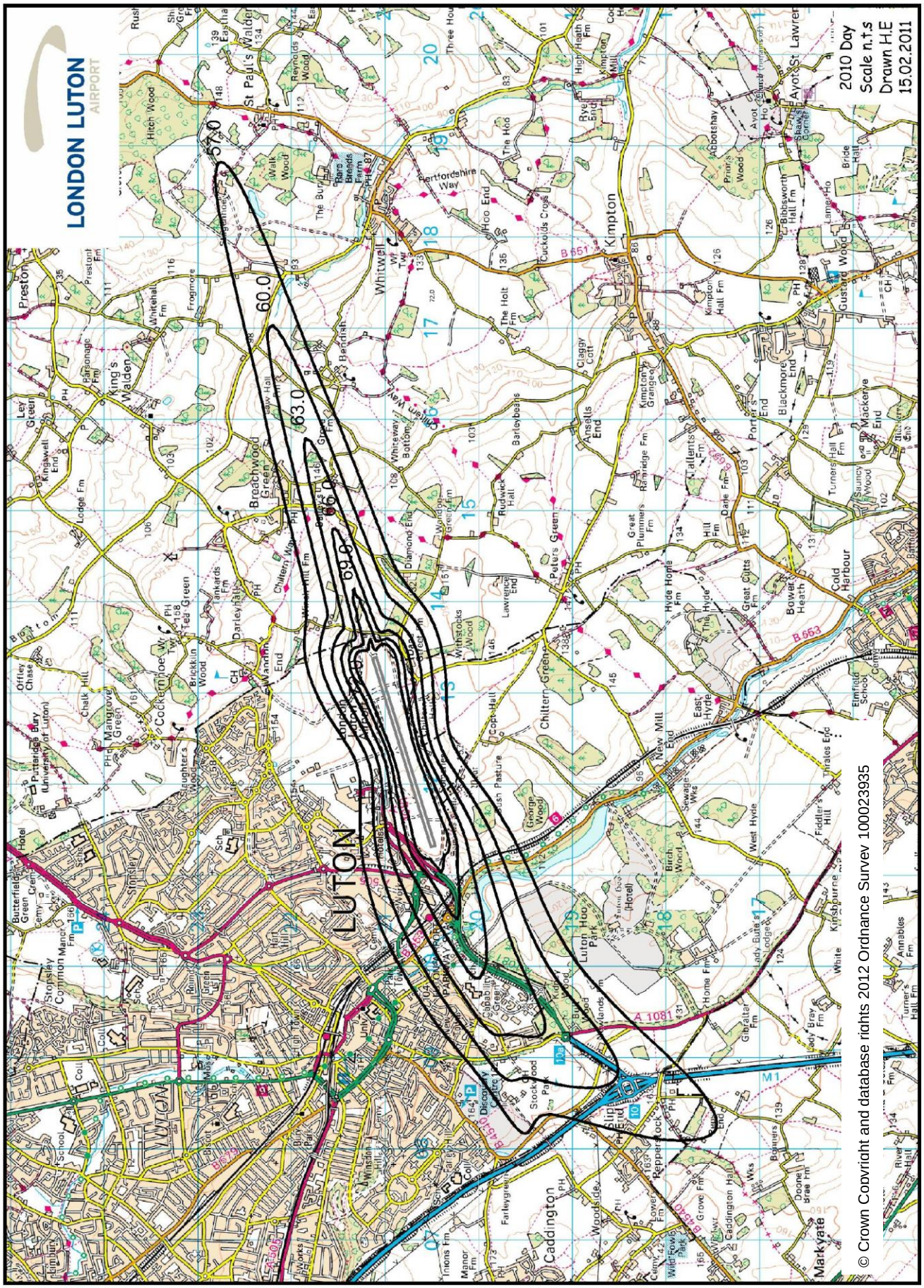
6.8. Annual Day Noise Contours 2011



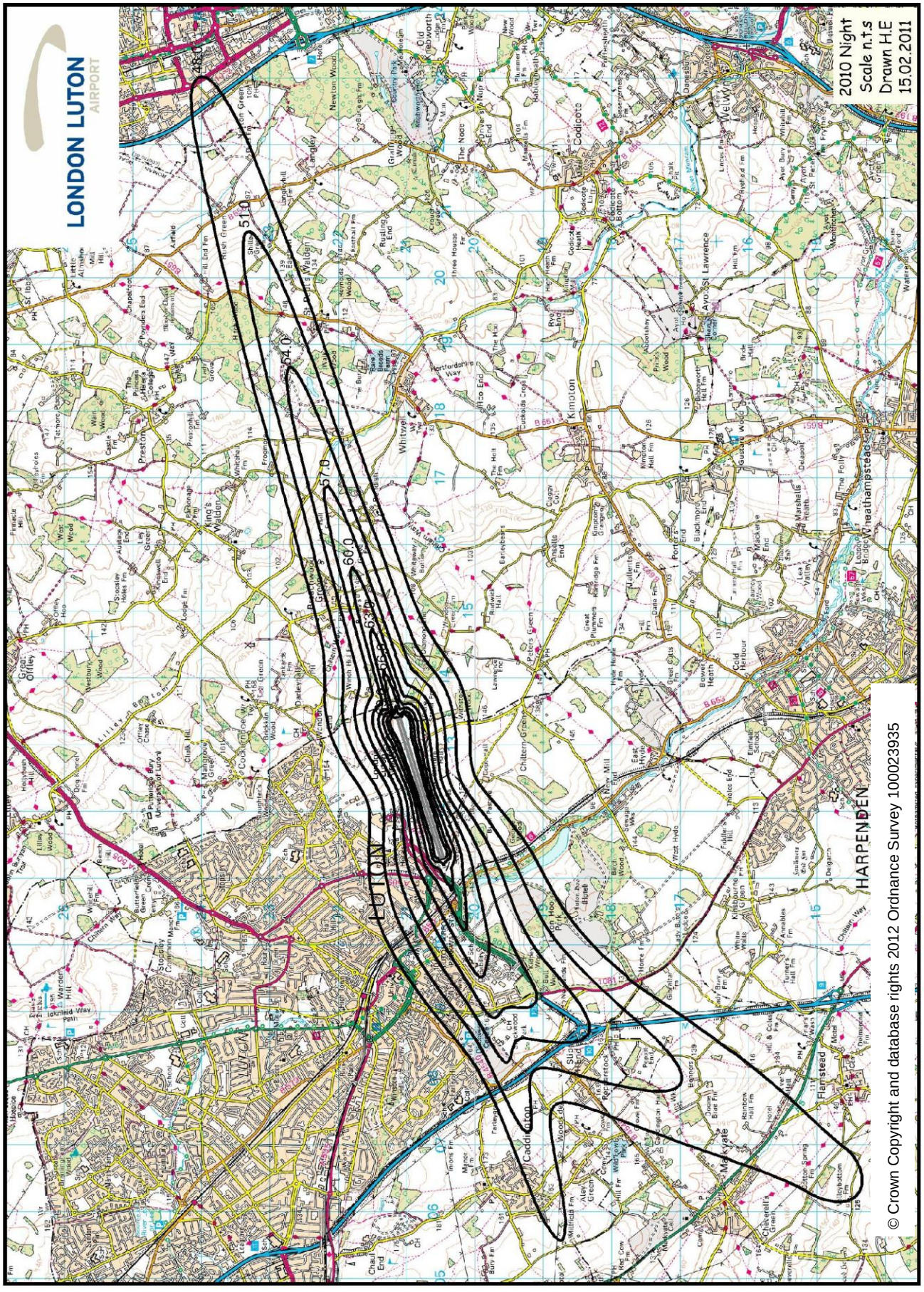
6.9. Annual Night Noise Contours 2011



6.10. Annual Day Noise Contours 2010



6.11. Annual Night Noise Contours 2010



6.12. Quarterly Night Noise Contours

The Night Jet Policy, which became effective from 1st April 2002, undertook to provide noise contour information for an average night for each quarter, with the results shown below.

6.13. Night Noise Contour Results (km²)

L_{Aeq}, 8hr Night	Jan – Mar 2010	Jan – Mar 2011	Apr – Jun 2010	Apr – Jun 2011	Jul – Sep 2010	Jul – Sep 2011	Oct - Dec 2010	Oct - Dec 2011
>72	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3
>69	0.4	0.4	0.5	0.6	0.6	0.6	0.4	0.5
>66	0.7	0.6	0.8	0.9	0.9	0.9	0.7	0.7
>63	1.1	1.0	1.5	1.6	1.7	1.6	1.1	1.1
>60	1.8	1.7	2.6	2.9	3.1	3.0	2.0	2.0
>57	3.4	3.0	4.8	5.4	5.7	5.5	3.7	3.7
>54	6.2	5.5	8.7	9.5	10.0	9.6	6.7	6.6
>51	10.7	9.6	15.4	16.1	17.5	16.4	11.8	11.2
>48	**18.3**	16.3	**27.1**	28.6	**31.7**	29.5	**20.6**	19.1
W/E Split (%)	*60/40*	*62/38*	*52/48*	*74/26*	*55/45*	*78/22*	*64/36*	*77/23*

As indicated in paragraph 6.1, the 2011 contours were produced using version 7.0b of INM, in line with 2010 and therefore the results are comparable year on year.

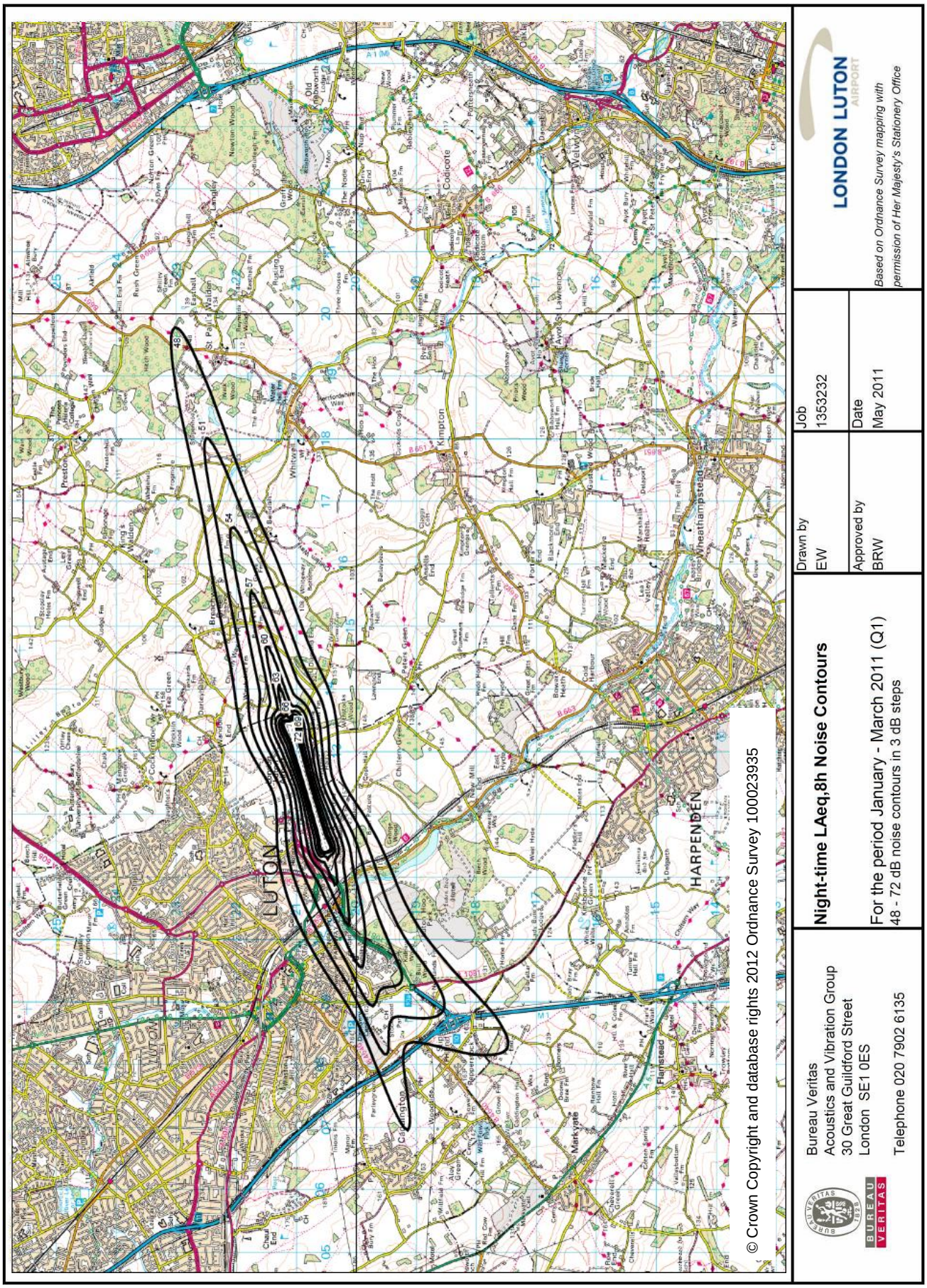
Following a reduction in the contour area for the first quarter, despite a similar number of movements, the second quarter saw an increase, as the result of a higher number of aircraft movements (see paragraph 6.14 below). However, the third quarter saw a reduction in the contour area, despite increased movements, whilst in the fourth quarter there was a decrease in contour area, in line with a reduction in the number of movements.

At the request of the London Luton Airport Consultative Committee, the movement numbers in the table below, outlining those aircraft types which were previously grouped in ‘other’ and which were 10 or more, have been disaggregated as from the second quarter 2010. Up until then the respective movements numbers have not been disaggregated (hence ‘n/a’ against those aircraft types) but are still grouped in ’other’.

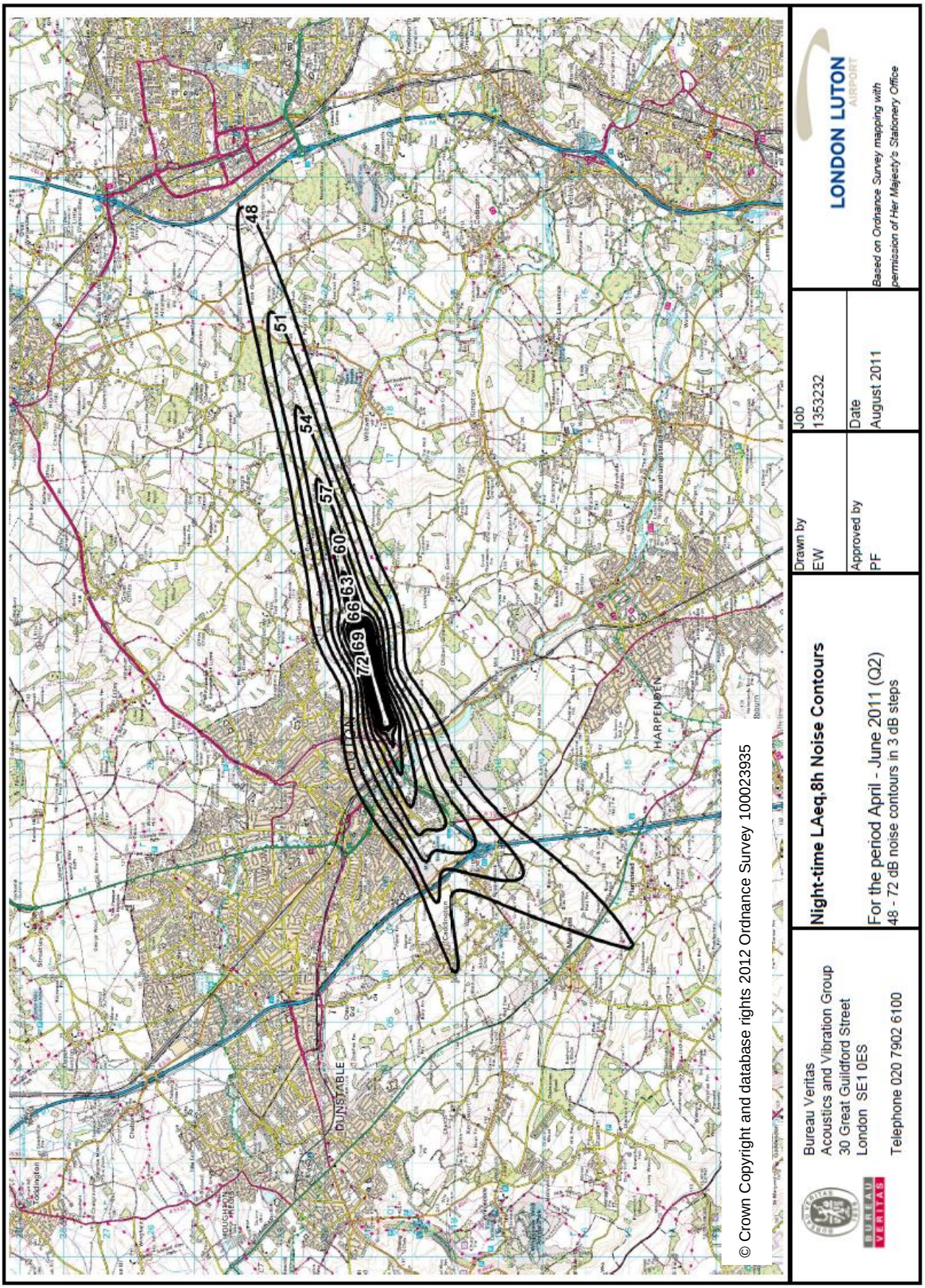
6.14. Night Noise Movements by INM Aircraft Type

Aircraft Type	Jan – Mar 2010	Jan – Mar 2011	Apr –Jun 2010	Apr – Jun 2011	Jul –Sep 2010	Jul – Sep 2011	Oct -Dec 2010	Oct - Dec 2011
727100	0	0	1	0	0	0	0	0
737300	6	14	14	20	28	17	34	0
737400	5	13	57	24	52	37	0	30
737500	n/a	0	n/a	0	0	0	12	0
737700	145	79	492	98	625	89	301	34
737800	312	179	570	589	659	637	332	291
757RR	53	46	95	94	121	91	85	47
A300	118	96	125	114	120	92	109	118
A320	345	459	650	976	916	1,252	489	564
A321	78	79	163	162	187	193	126	90
A319	205	212	475	956	569	1,106	255	454
767300	8	0	9	10	0	0	0	0
ATR42	n/a	0	n/a	0	0	0	18	0
BAEATP	n/a	127	n/a	135	145	144	130	132
BEC200	n/a	n/a	n/a	14	0	12	0	10
CL600	14	0	26	0	0	0	0	0
CL601	n/a	123	139	157	116	124	154	135
CLREGJ	n/a	26	n/a	17	31	21	29	24
CNA500	48	0	43	0	0	0	0	0
CNA510	n/a	13	n/a	12	22	13	19	12
CNA525	n/a	27	n/a	39	30	36	37	28
CNA550	n/a	0	n/a	19	20	17	16	10
CNA560	n/a	38	n/a	55	45	52	35	35
CNA650	n/a	n/a	n/a	10	0	0	0	0
CNA750	n/a	0	n/a	0	0	10	0	0
EMB135	n/a	0	n/a	0	0	12	0	0
EMB145	n/a	15	21	47	37	41	23	35
FAL20A	n/a	30	12	34	25	32	32	27
GIV	77	66	71	89	70	57	61	89
GV	n/a	94	89	93	85	77	111	83
HS125?	n/a	n/a	n/a	10	0	0	0	12
HS1258?	n/a	24	10	22	25	30	32	24
HS748A	138	0	149	0	0	0	0	0
IA1125	n/a	0	n/a	0	12	11	15	0
LEAR35	109	57	112	48	46	48	60	61
LEAR45	n/a	0	n/a	0	0	0	11	0
LEAR60	n/a	n/a	n/a	11	0	0	0	0
MU3001	39	0	67	0	0	0	0	0
Other	*286*	*106*	*63*	*95*	*115*	*70*	*105*	*77*
Total	**1,986**	**1,923**	**3,453**	**3,950**	**4,101**	**4,321**	**2,631**	**2,422**

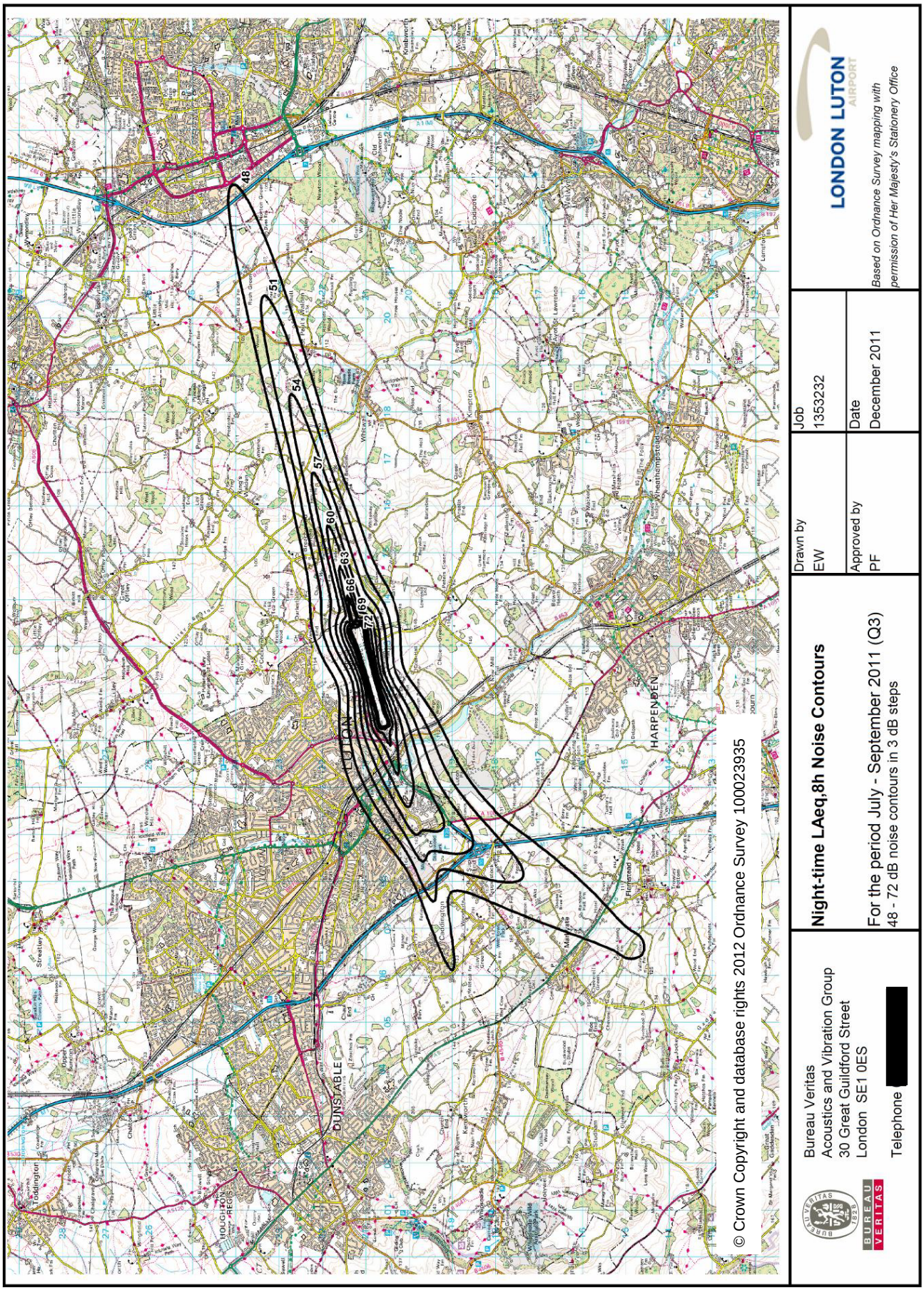
6.15. Quarterly Night Noise Contours 2011 Jan – Mar



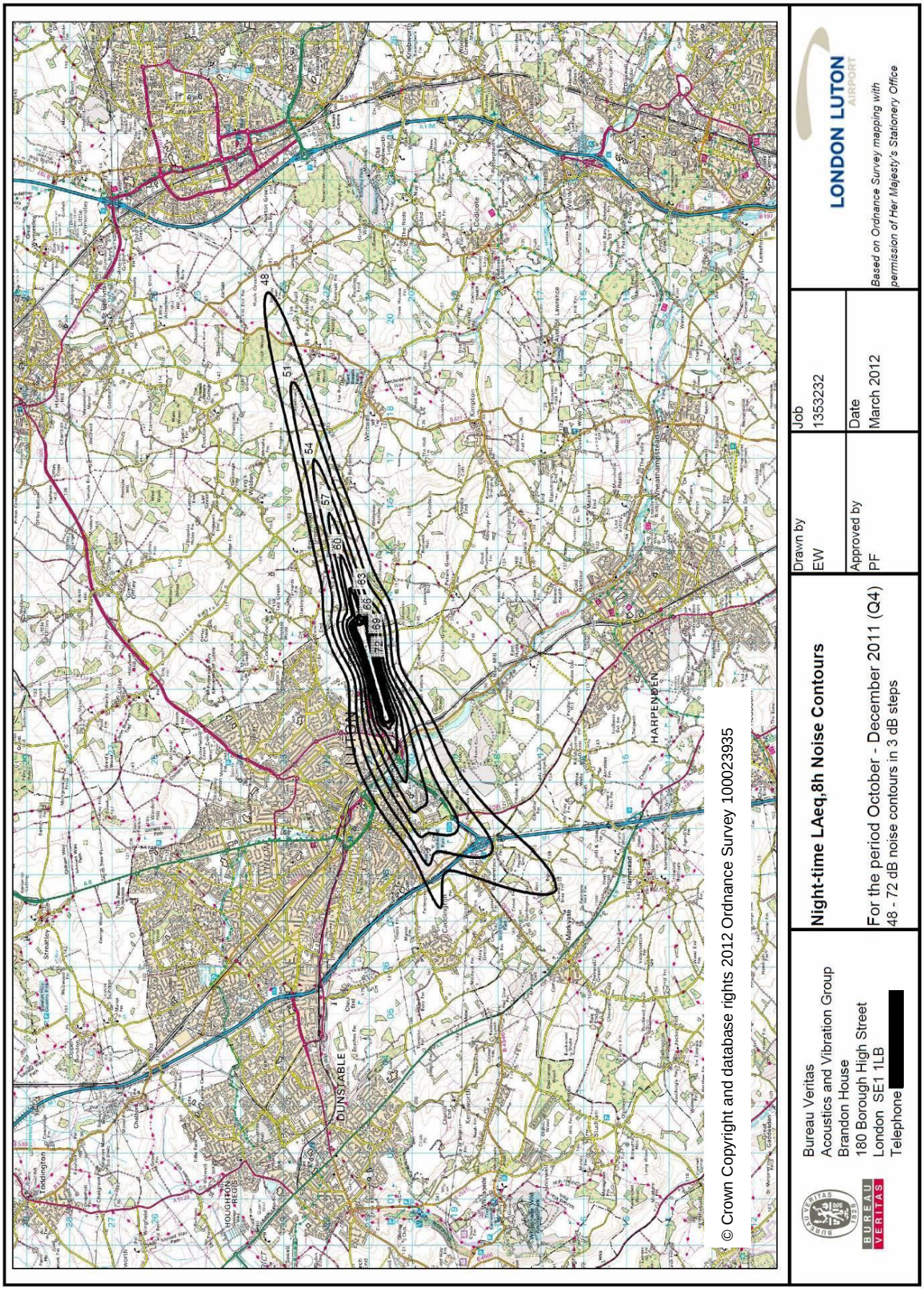
6.16. Quarterly Night Noise Contours 2011 Apr – Jun



6.17. Quarterly Night Noise Contours 2011 Jul – Sep



6.18. Quarterly Night Noise Contours 2011 Oct – Dec



7. Complaints

7.1. Total Complaints relating to LLA aircraft operations

	2010	2011
Total No. of Complaints relating to LLA aircraft operations	598	733
No. of Complainants	220	305
No. of Events (eliciting a complaint)	1,157	1,770
Average No. of Complaints per Complainant	*2.7*	*2.4*
Average No. of Events per Complainant	*5.3*	*5.8*
Average No. of Events per Complaint	*1.9*	*2.4*
No. of Aircraft Movements per Complaint	*160*	*135*
No. of Aircraft Movements per Event	*83*	*56*

During 2011 a total of 733 complaints (on average 2 complaints per 24 hours) relating to LLA aircraft operations were received by the Airfield Environment Office, compared with 598 in 2010.

A further 69 complaints (503 events) not attributable to LLA traffic were received throughout 2011 compared with 109 (848 events) last year. 24 of these complaints (35%) related to non-LLA helicopters operating to/from other airfields.

A total of 305 individuals reported concerns to the Airfield Environment Office during the year, in comparison with 220 in 2010. Statistics identify that 151 individuals (50%) were reporting concerns for the first time and that 218 of the complainants (71%) contacted the airport only once during the year.

Within the 733 complaints received during the year, a total of 1,770 events (eliciting a complaint) were listed, compared to 1,157 events in 2010.

During 2011 a further 1,626 events were reported by one individual in Harpenden but, in agreement with the LLACC, these events are no longer included in statistics although a total of 34 complaints from this complainant, reporting general disturbance and frequency (both day and night), have been incorporated in all statistics.

7.2. Flamstead & Redbourn concerns

In order to help contain departure flightpaths within the existing Noise Preferential Route (NPR) corridor for the 26 Clacton/Dover/Detling flight route during periods of westerly operations, a trial (involving 10 easyJet departures per day) commenced on 5th May 2011, following extensive analysis and simulation work by easyJet and detailed discussions between the Airport, NATS (the air traffic control provider), our airline partners and the CAA – Directorate of Airspace Policy (DAP).

The trial in question was carried out for a period of 6 months, ending on 6th November 2011 and having successfully gathered sufficient data to identify an optimum flightpath, within the NPR swathe, avoiding all the most densely populated areas south of the airfield, all airlines reverted to pre-trial procedures.

Discussions with DAP were then held, with a view to proceeding with the design of a new route structure based on results of the trial. This will require a detailed procedural design, which will then be the subject of an Airspace Change Proposal, in accordance with CAA guidelines (CAP 725). The Airport will closely involve all communities that are part of this process and progress will be reported to LLACC and the Noise & Track Sub-Committee.

It should be noted that the complaint figures outlined in the above table and included in the detailed breakdown statistics in sections 7.1–7.9 of this report, include only those complaints received from residents of Flamstead and Redbourn between 1st July and 18th August 2011 (see section 7.7 for details). However, from that date onwards the level of complaints received by the Airfield Environment Office from these two locations on a daily basis increased dramatically (up to 350 per day) and it became impossible to log these all individually but they were recorded for statistical purposes only.

From 19th August 2011 onwards the Airfield Environment Office received in excess of 7,500 e-mails/telephone calls from over 350 households in Flamstead and Redbourn. These all reported increased disturbance from westerly departures as a result of the easyJet trial to help bring aircraft back onto their prescribed flightpaths, where historically they have been flying outside the existing Noise Preferential Route (NPR) corridor. A small number of residents from both villages also continued to report ongoing disturbance from westerly departures since the trial ended on 6th November 2011.

Throughout the entire period July to December 2011 the Airport received a total of 6,865 e-mails/telephone calls from 205 households in Flamstead and 822 e-mails/telephone calls from 152 households in Redbourn.

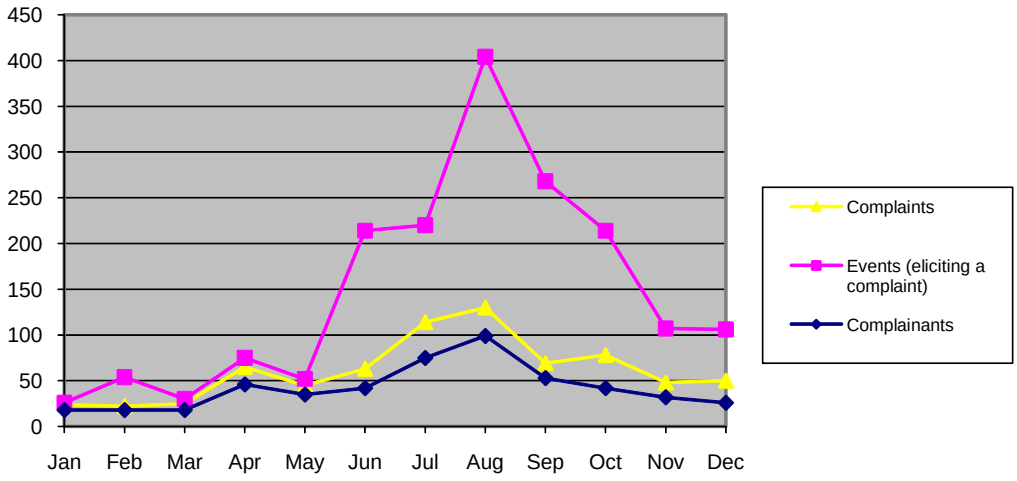
In order to fully understand the concerns being reported by residents in these particular areas the Airport hosted a total of four visits for representatives from both Flamstead and Redbourn and also attended a Flamstead Parish Council meeting and a Public Meeting in Redbourn to discuss the background and progress of the trial. Airport representatives also visited a property in Flamstead on two separate occasions to view the actual flown tracks of Luton departures in relation to the village.

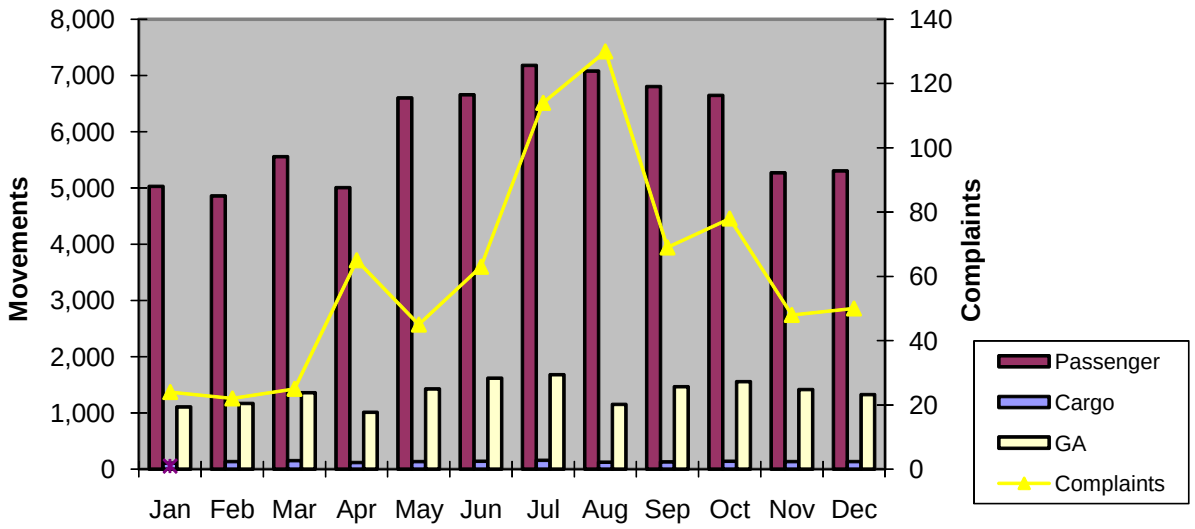
In agreement with Flamstead Parish Council and Redbourn Parish Council, the Airport also provided weekly progress updates (including flight track data) to local residents via designated Parish Council representatives.

7.3. Monthly complaint statistics

	Complaints	Events (eliciting a complaint)	Complainants
Jan	24	26	18
Feb	22	54	18
Mar	25	30	18
Apr	65	75	46
May	45	52	35
Jun	63	214	42
Jul	114	220	75
Aug	130	404	99
Sep	69	268	53
Oct	78	214	42
Nov	48	107	32
Dec	50	106	26
Totals	**733**	**1,770**	**305***

* This total number of complainants annually takes into account a number of repeat complainants.





7.4. Breakdown of Reported Disturbance

It is important to note that the reasons detailed below are those reported by the complainant and not the result of any subsequent investigation.

Disturbance	Day	Night	General*	Total
Aircraft Noise	406	146	83	**635**
Off Track	234	27	18	**279**
Low-Flying	162	25	13	**200**
Frequency	54	7	42	**103**
Air Quality	2	0	0	**2**
Safety	1	0	0	**1**

It should be noted that complaints received may relate to more than one type of disturbance (i.e. noisy, low and off track) and the above figures will therefore not correlate to the total number of complaints.

** The 'General' category relates to non-specific reports of disturbance.*

7.5. Areas of Reported Concerns

Reported Concerns	No. of Complaints	% of Total Complaints
Departures - Westerly	422	57.7%
Departures - Easterly	97	13.3%
Frequency/Gen. Distrubance	60	8.2%
Arrivals - Easterly	59	8.1%
Go - Arounds	45	6.1%
Arrivals - Westerly	30	4.1%
Helicopters	10	1.4%
Engine Ground Runs	3	0.4%
Test/Training	3	0.4%
Ground Noise	2	0.3%
Alleged Air Prox*	1	0.1%
Total	**732**	**100%**

** Upon investigation the aircraft involved were found to have maintained sufficient separation distance and safety was not compromised at any time.*

During the year 117 individuals reported a total of 229 complaints concerning night noise disturbance from LLA operations (on average less than 1 complaint per night). This amounts to 31% of all complaints received in 2011, compared to 236 night noise complaints during 2010 (from 101 individuals), a decrease of 3%. It should be noted that 29% of the reported night disturbance reports during 2011 originated from just 3 individuals, in Harpenden, Hemel Hempstead & Pepperstock. A further 24 complaints reported disturbance relating to overflights to or from other airports during the night period.

Within the 422 complaints concerning westerly departures 137 were of a general nature, 281 to specific aircraft following the Clacton/Dover/Detling route and 1 to an aircraft on the Compton route. Three other complaints involved positioning flights following off-airways flight routes.

Of the 97 complaints attributed to easterly departures 12 were of a general nature, 74 to specific aircraft following the Compton heading, 8 to aircraft on the Olney flight route and 1 related to an aircraft on the Clacton/Dover/Detling heading. One other complaint related to a positioning flight following an off-airways flight route.

Whilst 29 of the 59 complaints concerning easterly arrivals reported general disturbance, 30 related specifically to aircraft on approach to land from the Lorel Reporting Point.

7.6. Nature of Disturbance

Noise was cited as a main disturbance in 87% of complaints and 38% of complaints involved aircraft being perceived as **off-track.** In 14% of complaints the **frequency** of operations was reported and concerns of aircraft flying **low** were reported in 27% of complaints. It should be noted that complaints received may relate to more than one type of disturbance (i.e. noisy, low and off-track).

Of the 733 complaints relating to LLA aircraft operations registered during the year 423 complaints (58%) were clearly correlated to a specific aircraft type although many complaints were of a general nature.

7.7. Complaints by Aircraft Type

Aircraft Type*	No. of correlated complaints	% of Total complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per correlated complaint**
A320/A321 (Monarch/Wizzair/easyJet/GA	109	14.9%	23,704	217
A300 (MNG Cargo/DHL)	89	12.1%	1,036	12
A319 (easyJet)	50	6.8%	26,062	521
B737-800 (Ryanair/Thomsonfly/GA)	28	3.8%	10,843	387
B737-400 (MNG Cargo/Blue Air)	24	3.3%	726	30
GLF2/GLF3 (GA)	18	2.5%	108	6
B757 (El Al/Thomsonfly/DHL)	16	2.2%	1,315	82
GLF4/5 (GA)	15	2.0%	5,137	342
B737-200 (GA)	11	1.5%	42	4
Helicopter	10	1.4%	642	64
B737-700 (easyJet)	7	1.0%	4,676	668
MD82/83 (Blue Air/GA)	7	1.0%	44	6
B767 (El Al/Thomsonfly)	5	0.7%	460	92
ATP (Atlantic Airlines)	3	0.4%	584	195
Other Private Aircraft	*27*	3.7%	*22,440*	*831*
Other Passenger Operations	*3*	0.4%	*1,382*	*461*
Other Cargo Operations	*1*	0.1%	*98*	*98*
Total	**423**	57.7%	**99,299**	**235**

* Operators in brackets refer to the predominant operator(s) of aircraft type.

** This is the total number of aircraft movements per correlated complaint
i.e. 99,299 movements / 423 correlated complaints = 235

7.8. Origin of Complaints

The chart below identifies the areas around the Airport from which complaints were received:

Location	Complaints	Events* (eliciting a complaint)	Complainants	*Average complaints per complainant*	*Average Events per Complainant*
Arlesey	1	0	1	1.0	0.0
Ashwell, Baldock	2	10	2	1.0	5.0
Ayot St Lawrence	14	2	1	14.0	2.0
Bendish	2	2	2	1.0	1.0
Benington	2	0	1	2.0	0.0
Blackmore End	2	4	1	2.0	4.0
Breachwood Green	10	8	5	2.0	1.6
Buntingford	1	0	1	1.0	0.0
Caddington	28	30	16	1.8	1.9
Chesham	1	1	1	1.0	1.0
Codicote	2	1	2	1.0	0.5
Digswell	1	0	1	1.0	0.0
Dunsmore, Wendover	2	4	1	2.0	4.0
Eaton Bray	3	2	1	3.0	2.0
Edlesborough	3	3	1	3.0	3.0
Flamstead**	29	57	14	2.1	4.1
Gamlingay	1	1	1	1.0	1.0
Harpenden #	233	931	52	4.5	17.9
Hastoe	1	1	1	1.0	1.0
Heath & Reach	1	0	1	1.0	0.0
Hemel Hempstead #	39	126	8	4.9	15.8
Hitchin	15	19	1	15.0	19.0
Houghton Regis	1	1	1	1.0	1.0
Kensworth	1	1	1	1.0	1.0
Kimpton	4	6	3	1.3	2.0
King's Walden	1	1	1	1.0	1.0
Kinsbourne Green	1	1	1	1.0	1.0
Knebworth	1	0	1	1.0	0.0

Location	Complaints	Events* (eliciting a complaint)	Complainants	*Average complaints per complainant*	*Average Events per Complainant*
Leighton Buzzard	3	2	1	3.0	2.0
Letchworth	1	3	1	1.0	3.0
Little Gaddesden	2	0	2	1.0	0.0
Long Marston	1	2	1	1.0	2.0
Luton	39	36	24	1.6	1.5
Markyate	24	20	15	1.6	1.3
Melbourn	1	0	1	1.0	0.0
Mentmore	9	74	2	4.5	37.0
Pepperstock #	29	76	4	7.3	19.0
Pitstone	1	1	1	1.0	1.0
Redbourn**	75	133	60	1.3	2.2
Sandon	1	0	1	1.0	0.0
Sandridge	5	4	2	2.5	2.0
Slapton	5	8	2	2.5	4.0
Slip End	16	14	6	2.7	2.3
St Albans	33	45	17	1.9	2.6
Stevenage	10	2	8	1.3	0.3
Stewkley	1	0	1	1.0	0.0
Tebworth	1	1	1	1.0	1.0
Tring	9	45	2	4.5	22.5
Walkern	5	16	4	1.3	4.0
Wheathampstead	44	62	15	2.9	4.1
Whitwell	8	8	4	2.0	2.0
Wilstone	1	0	1	1.0	0.0
Wing	1	0	1	1.0	0.0
Woodside	6	6	5	1.2	1.2
Totals	**733**	**1,770**	**305**	***2.4***	***5.8***

*Where complaints are of a general nature (i.e. frequency or general disturbance), individual events may not have been specified.

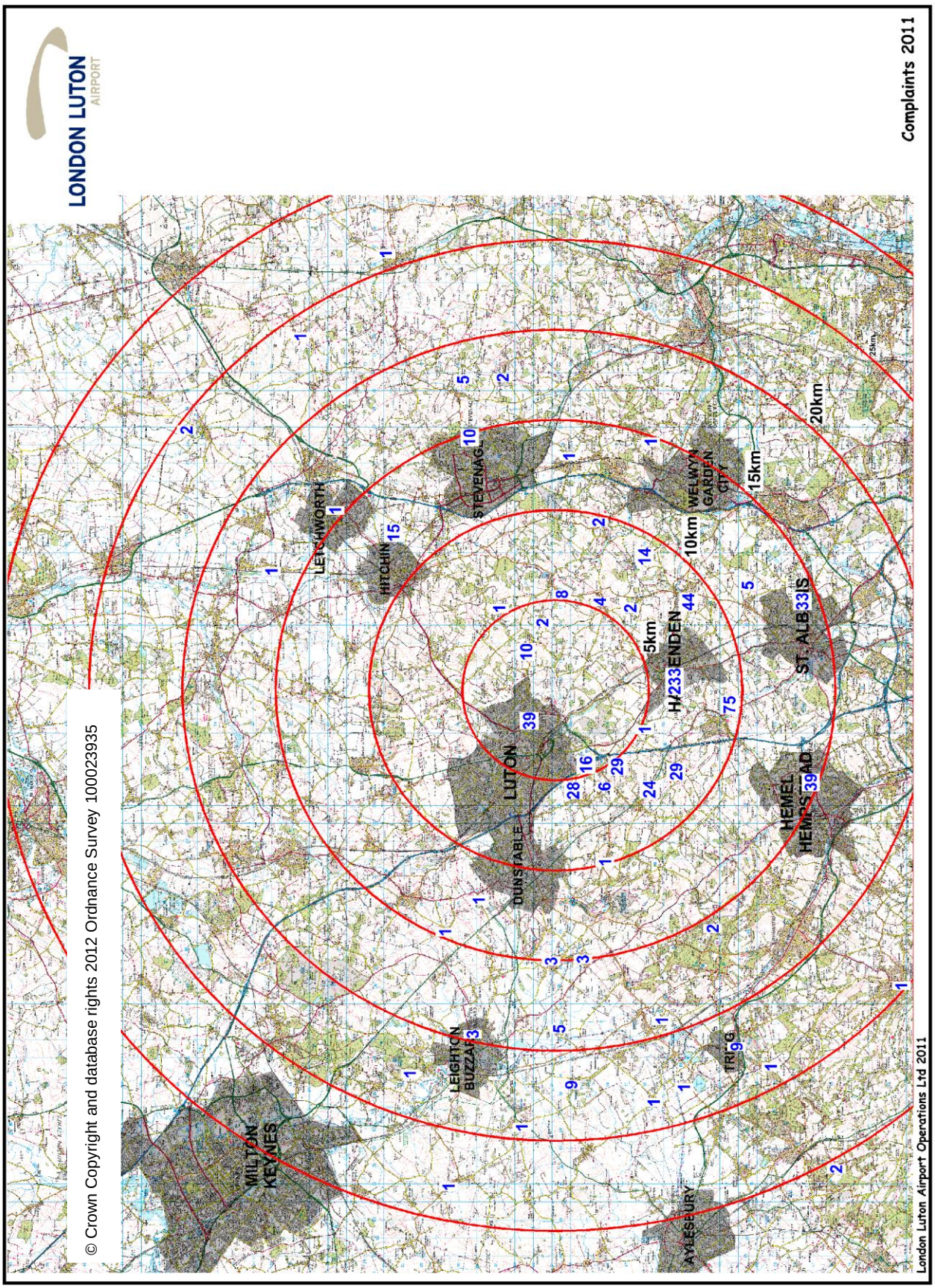
A total of 141 complaints (826 events) from the Harpenden area were reported by just five individuals.

Furthermore one individual in Harpenden has continued to report a large number of events throughout the year. Whilst these events (1,626) are no longer included in statistics (in agreement with the LLACC) the complaints received from this individual (reporting general disturbance and frequency) are still included in the complaints total and this individual is included in the complainants total.

** In addition to those complaints outlined in the above table, the Airfield Environment Office received in excess of 7,500 e-mails/telephone calls from over 350 households in Flamstead and Redbourn from 19th August 2011 onwards. These all reported increased disturbance from westerly departures as a result of the easyJet trial to help bring aircraft back onto their prescribed flightpaths, where historically they have been flying outside the existing Noise Preferential Route (NPR) corridor. A small number of residents from both villages continued to report ongoing disturbance from westerly departures after the 6 month trial ended on 6th November 2011. These concerns have been logged for statistical purposes only.

The above table includes a total of 275 complaints that specifically referred to the easyJet trial, when reporting disturbance from westerly departures. These originated from individuals in Flamstead, Harpenden, Hemel Hempstead, Markyate, Redbourn and St Albans.

7.9. Location of Complaints 2011



7.10. Method of Complaint Receipt

How Received	% of Total Complaints
E-mail	70%
Telephone	26%
Fax	3%
Letter	1%

Any concerns relating to LLA aircraft operations can be reported to the Airfield Environment Office by the following means:

Postal Address: **Airfield Environment Office**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY

Direct Telephone: **(** [redacted] **(24 hours)**

Direct Fax: **(** [redacted]

Direct email*: noise@ltn.aero

***** A link also exists on the www.london-luton.co.uk website, providing a template for reporting concerns relating to aircraft activity, which is then sent directly to the Airfield Environment Office for logging, investigation and response.

7.11. Community Relations

In December 2011, the Airfield Environment Office published the first edition of its **IN TOUCH** Community Newsletter, available to view online on the airport website. This was designed to give information to the general public on noise related issues at London Luton Airport and to give some clarity to concerns relating to airport operations. This first newsletter included details regarding the easyJet track-keeping trial and also introduced **TraVis**, the Airport's new online flight tracking tool, which was launched in January 2012. This is available to view on the Airport website at the following link: http://www.london-luton.co.uk/en/flighttracking/ .

Community Visits to the Airport

Invitations are often extended to local residents and LLACC members to visit the Airfield Environment Office for a demonstration of the Aircraft Noise & Track Monitoring System, to discuss specific concerns and to view for themselves flight tracks of LLA aircraft operations in their area.

In August 2011 the Airport hosted a visit for a delegation of representatives from Flamstead to discuss Luton westerly departures flight tracks in relation to the trial to help contain departure flightpaths within the existing Noise Preferential Route (NPR) corridor for the 26 Clacton/Dover/Detling flight route.

A further delegation, representing Redbourn, was welcomed to the Airport at the beginning of September 2011 to discuss the background and progress of the trial.

At the end of November 2011 the Airport hosted a second visit for a delegation of representatives from Flamstead to provide a further progress update in relation to the easyJet trial.

Airport Visits to the Community

Towards the end of August 2011 Airport representatives visited a Flamstead resident at his property to verify the actual flown tracks of Luton departures in relation to the village.

The Airport also attended a Flamstead Parish Council meeting on 12th September 2011 to discuss the impact of the easyJet trial for those living in Flamstead.

Airport representatives attended a Public Meeting in Redbourn, arranged by Redbourn Parish Council on 3rd October 2011, to provide a progress update on the easyJet trial and to answer questions from local residents.

Towards the end of October 2011, Airport representatives accepted an invitation to return to Flamstead and met with a group of local residents to verify the actual flown tracks of Luton westerly departures in relation to the village.

8. Employment

8.1. Introduction

Employment at and surrounding London Luton Airport (LLA) contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the Airport. Thus, any analysis of the Airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the Airport boundary has been conducted, the results of which are summarised below.

8.2. Methodology

The methodology for this year's analysis is the same as for the previous year. Administrative data sources were used to conduct the survey, instead of sending out questionnaires as was the case in up to the 2009 survey. The Inter Departmental Business Register was used as the main data source, this Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes.

It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted. (source: ONS website www.statistics.gov.uk).

The methodology was changed from previous years to be more cost and time efficient in the use of data which was both already purchased and covered the majority of the same information which the survey had historically asked for. The other major advantage was that the Standard Industrial Classification was already listed on the data source, thus eliminating the need for businesses to self-classify.

An initial list was received from London Luton Airport of companies within its boundary. The listing was matched against the IDBR. Companies outside the Airport boundary were identified by the street names/areas as follows:

- Spittlesea Road
- Part of Frank Lester Way
- President Way
- Wigmore House
- Part of Airport Way
- Barratt Industrial Park
- Airport Executive Park

Nine companies who appeared on the list but not the IDBR had figures imputed from their records for previous years, and nineteen were removed either due to not being present at the Airport (in July of 2011), being part of another company or not having any permanent staff based at the Airport.

The industrial classification used has been updated to the SIC 2007 coding framework devised by Office for National Statistics. This means that the coding will have changed from that found up to the 2009 report. Revision is necessary due to "the need to adapt the classifications to changes in the world economy. The revised classifications reflect the growing importance of service activities in the economy over the last 15 years, mainly due to the developments in information and communication technologies (ICT)". (Source: UK Standard Industrial Classification of Economic Activities 2007 (SIC 2007) Structure and explanatory notes, http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html).

8.3. Total Employment in and around the Airport

Using main section headings from the Standard Industrial Classification 2007 (SIC 2007), the following was found. Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	400
Administrative and Support Service Activities	1800
Financial and Insurance Activities	#
Human Health and Social Work Activities	#
Information and Communication	#
Manufacturing	1300
Professional, Scientific and Technical Activities	#
Public Administration & Defence; Compulsory Social Security	#
Real Estate Activities	#
Transportation and Storage	3900
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	400
Grand Total	**8,100**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100

Due to confidentiality issues we are bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

For the purposes of full interpretation of the results, it should be noted that the sections used in the pre-2010 report map to the new sections as follows:

Previous Codes		New Codes
Forwarding of Freight	⇨	Transportation and Storage
General Public Service Activities	⇨	Public Admin & Defence etc Compulsory Social Security
Hotels and Restaurants	⇨	Accommodation & Food Service Activities
Non Scheduled Passenger Air Transport	⇨	Transportation and Storage
Other Supporting Air Transport Activities	⇨	Transportation and Storage
Public (Scheduled) Passenger Air Transport	⇨	Transportation and Storage
Renting of Automobiles	⇨	Administrative and Support Service Activities
Retail Trade	⇨	Wholesale and Retail Trade etc
Tour Operators	⇨	Administrative and Support Service etc etActivities
Travel Agencies	⇨	Administrative and Support Service etc Activities
Wholesale of Petroleum Products	⇨	Wholesale and Retail Trade etc
Miscellaneous (Airline/Aviation Related)	⇨	Not Used
Miscellaneous (Non Airline/Aviation Related)	⇨	Not Used

Note: Individual companies may have moved within the coding structure

8.4. Employment By Working Pattern

The IDBR provides employment figures by full and part time working pattern. The following is found:

Standard Industrial Classification 2007, Section Names	Full Time Employees
Accommodation and Food Service Activities	100
Administrative and Support Service Activities	1500
Financial and Insurance Activities	#
Human Health and Social Work Activities	#
Information and Communication	#
Manufacturing	1200
Professional, Scientific and Technical Activities	#
Public Administration & Defence; Compulsory Social Security	#
Real Estate Activities	#
Transportation and Storage	3300
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	200
Grand Total	**6500**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100

Standard Industrial Classification 2007, Section Names	Part Time Employees
Accommodation and Food Service Activities	200
Administrative and Support Service Activities	100
Financial and Insurance Activities	#
Human Health and Social Work Activities	#
Information and Communication	0
Manufacturing	100
Professional, Scientific and Technical Activities	#
Public Administration & Defence; Compulsory Social Security	#
Real Estate Activities	#
Transportation and Storage	400
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	100
Grand Total	**900**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100.

There were several companies who did not state their full/part time working split on the IDBR therefore the figures above do not add to the total employment figures.

The percentage split of full/part time employees found at the Airport, compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of Luton Airport	88.3%	11.7%
Luton UA	78.0% (confidence limit 3.4)	22.0% (confidence limit 3.4)

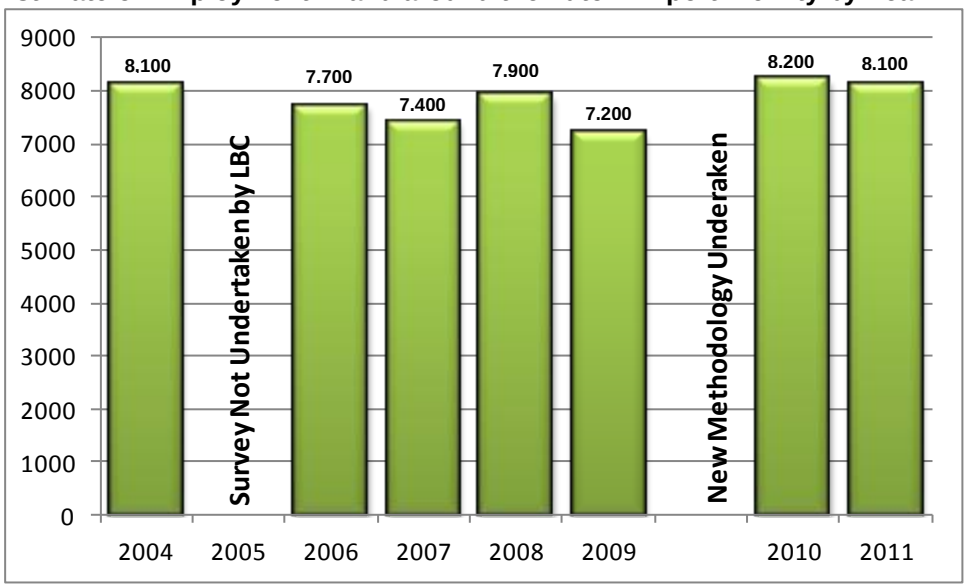
Source for Luton UA Figures: Annual Population Survey, Office for National Statistics July 2010 – June 2011, latest data.

Therefore, the full and part time working pattern differs from that found within Luton as a whole, with considerably less part time working and more full time workers found overall. This may, however, change if looked at per industry sector but the figures are too small to make any meaningful comparison at this level.

8.5. Time Series

As previously stated, due to the methodological differences employed between last year's estimate and previous years, it is not possible to directly compare the total employment figures over time. However, in the interest of completeness, the following figures from previous years can be used as a proxy measure of changing patterns.

Estimate of Employment in and around the Luton Airport Vicinity by Year



Source: AMR Employment Surveys 2004 and 2006-2011

8.6. Conclusion

In conclusion, there are around 8,100 employees working in the vicinity of the Airport which is slightly less than the 2010 estimate. Whether this pattern is set to continue will be seen in future estimates. Please note that due to confidentiality issues we are bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

9. Surface Access

9.1. Road Traffic

This is the Summer 2011 traffic count conducted between 12th–19th September 2011. It is important to note that there is a slight departure from the normal observation dates (late August) for previous summer traffic counts. However, these data are used to compare previous summer traffic counts in order to maintain the traffic count time series for 5 years.

However, Figures **9.1,1** and **9.1.2** show an increase in 12hr/5day traffic flows on 7 of the 8 monitored roads, the highest increase in traffic count is +1109 (+24.2%) on Vauxhall Way South. The most significant decrease in traffic count is -126 (-1.8%) on A1081 London Road. The overall marginal traffic flow compared with last year in these observation points is +3774 (+7.6%).

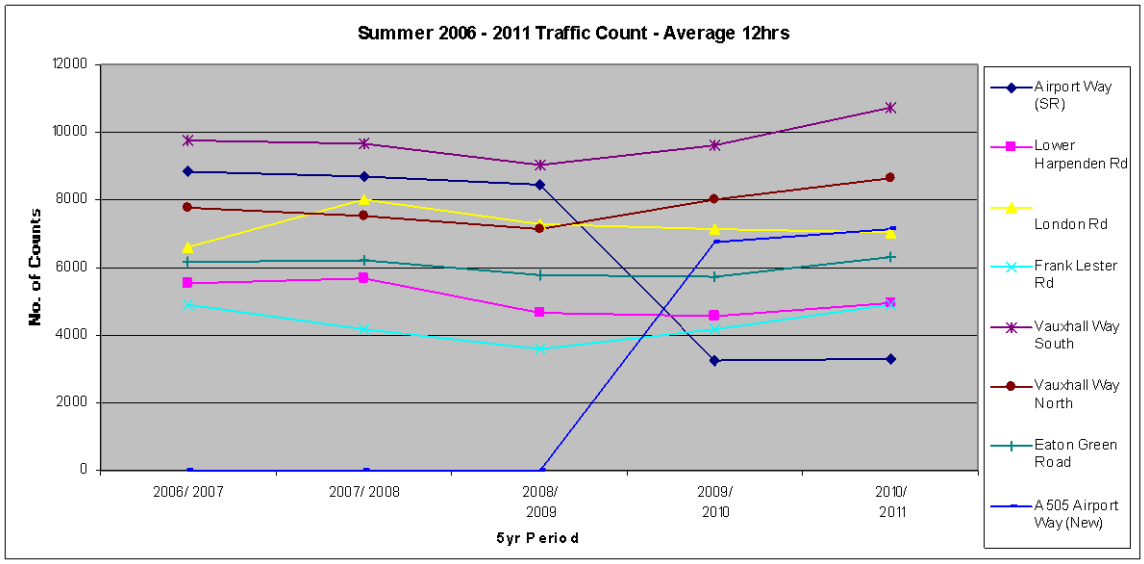
Figure 9.1.1

Summer 2006 – 2011 Traffic Count (Average 12hrs)

	MAP REF	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011
Airport Way (SR)	*599*	8,820	8,685	8,443	3,237	3,323
Lower Harpenden Rd	*106*	5,563	5,676	4,666	4,576	4,942
London Rd	*393*	6,607	8,038	7,277	7,163	7,037
Frank Lester Way	*445*	4,930	4,158	3,606	4,170	4,908
Vauxhall Way South	*520*	9,769	9,670	9,055	9,638	10,746
Vauxhall Way North	*603*	7,758	7,516	7,164	8,005	8,652
Eaton Green Road	*677*	6,160	6,234	5,780	5,755	6,317
A505 Airport Way (New)	*925*	0*	0*	0*	6,735	7,127

** Road not open*

Figure 9.1.2



For the 24-hour week (24/7), Figures 9.1.3 and 9.1.4 reveal different patterns to the 12hr/5day traffic count. The highest increase in traffic count is 2154 (24.1%) on Vauxhall Way North, while the most significant decrease in traffic count is -437 (-4.7%) on A1081 London Road. The overall marginal traffic flow compared with last year in these observation points is +5770 (+9.2%).

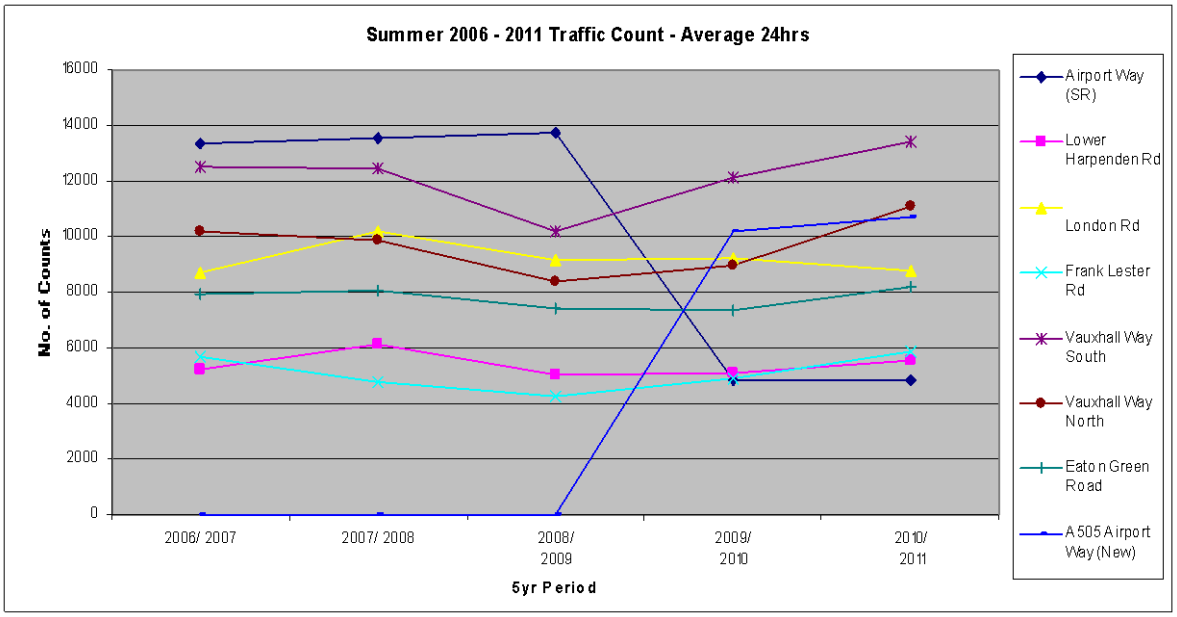
Figure 9.1.3

Traffic Count – Average 24hrs

	Map Ref	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011
Airport Way (SR)	*599*	13,354	13,533	13,721	4,818	4,840
Lower Harpenden Rd	*106*	5,256	6,154	5,040	5,104	5,555
London Rd	*393*	8,718	10,183	9,181	9,225	8,788
Frank Lester Rd	*445*	5,676	4,742	4,275	4,925	5,842
Vauxhall Way South	*520*	12,517	12,461	10,217	12,131	13,421
Vauxhall Way North	*603*	10,177	9,872	8,380	8,939	11,093
Eaton Green Road	*677*	7,906	8,091	7,431	7,383	8,226
A505 Airport Way (New)	*925*	0*	0*	0*	10,185	10,714

* Road not open

Figure 9.1.4

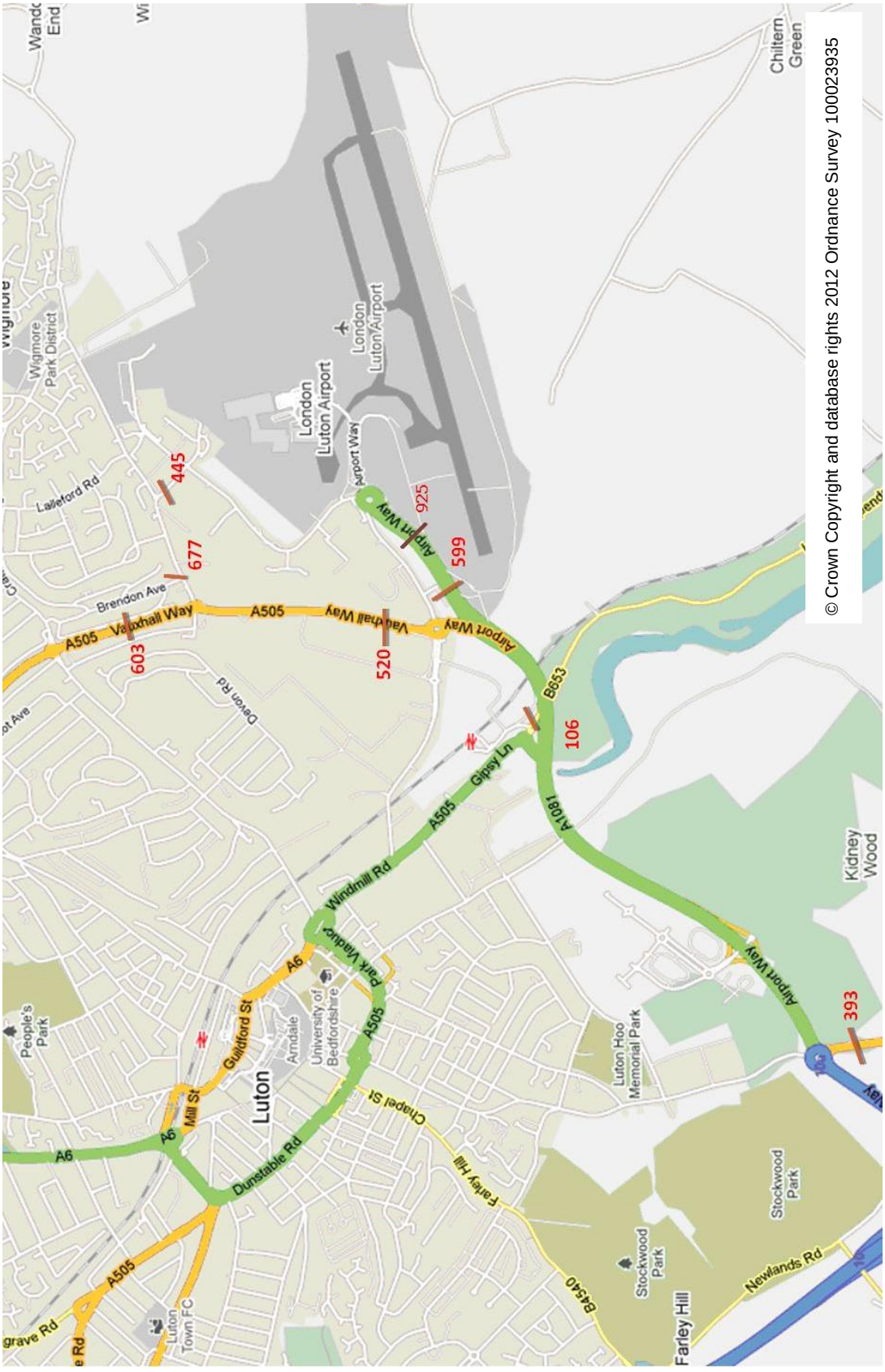


Traffic flow along Airport Way (SR) has consistently decreased over the last four years with a slight increase this year. This data indicates that Vauxhall Way axis accommodates the highest traffic volume in this vicinity. This is due to its strategic location and connectivity to other district and arterial roads into and out of Luton. It is likely that the completion of East Luton Corridor engineering operations and increased activities in and around London Luton Airport have resulted in significant redistribution of

traffic flow in the area. Suffice to say that, this pattern may continue and increase as a build-up to the London 2012 Olympics.

Traffic count on New Airport Way (CP 925) was conducted 12th–18th September 2011 while, traffic counts at other points were conducted 13th–19th September 2011. There was neither scheduled closure of the road nor a closure for any urgent or emergency works by any of the statutory undertakers. See Figure 9.1.5 for indicative location of these observation points.

Figure 9.1.5 Local Highway Network



9.2. Public Transport Services

Table 9.2.1 shows the number of scheduled train services per week from Luton Airport Parkway Station have increased above that of 2010.

The winter timetable for 2011/12 covers the period leading up to the Jubilee and Olympics, which may account for an increase in the number of First Capital services in the Winter timetable.

Table 9.2.1: SCHEDULED TRAIN SERVICES FROM LUTON AIRPORT PARKWAY STATION

Number of services per week 7 days	Summer 10	Winter 10/11	Summer 11	Winter 11/12
Direction				
Northbound	920	906	892	1063
Southbound	869	871	891	1032
TOTAL	**1,789**	**1,777**	**1,783**	**2,095**

Most National Express services make scheduled stops within the Town Centre, also allowing for patronage between the Town Centre and the Airport.

Local bus services show a significant increase over the summer period. This in due to the seasonal variation in services by the Shuttle bus 888 from Luton Airport to Parkway which is operated by First Capital and Airparks SHUTTLE from Luton Airport to Slip End.

Links with Heathrow airport also saw an increase in the winter 2011/12 period, with services increasing from 133 per week to 154.

The rise in services calling at the Airport is helping to promote public transport as a means of getting to and from the airport from either local destinations or destinations a little further afield.

Table 9.2.2 : BUS AND COACH SERVICES FROM LONDON LUTON AIRPORT

Number of Services per Week	Summer 2010	Winter 2010/11	Summer 2011	Winter 2011/12
Destination				
LOCAL				
Luton Railway Station	302	297	302	319
Others	1,706	1,571	1,706	1,498
National				
Central London	420	420	420	454
Others	525	637	637	700
TOTAL	2,953	2,925	3,065	2,971

Number of Services per Week	Summer 2010	Winter 2010/11	Summer 2011	Winter 2011/12
AIRPORT- AIRPORT LINK				
Birmingham	77	77	77	91
London Gatwick	70	70	70	70
London Heathrow	133	133	133	154
London Stansted	182	182	182	182
Manchester	7	7	7	7
TOTAL*	469	469	469	504

**As some services call at more than one airport, the total number of actual departures will be less than the sum of the disaggregated services to each airport.*
This information represents a general guide to the number of services based on the information available from the various bus operators.

9.3. Additional Information

LLAOL published its first Airport Surface Access Strategy (ASAS) in 2000, in line with the recommendations of the 1998 Integrated Transport White Paper. This strategy set targets to encourage air passengers and employees to access the Airport using more sustainable modes. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework.

In June 2009, LLAOL published an Interim ASAS (2009-2011). This document included short-term targets in order that the ASAS could realign with the Local Transport Plan timetable, in accordance with Department for Transport Guidance on Air Transport Forums and Airport Surface Access Strategies (1999).

In 2012 LLAOL intends to publish a full ASAS, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees. This is intended to cover the period 2012-2017.

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLAOL uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table below shows the weighted CAA data for 2005 to 2010. The CAA statistics suggest that 32% of airport passengers now choose to use public transport.

Table 9.3.1: Passengers travelling to the Airport by various modes (CAA Data)

%	2005	2006	2007	2008	2009	2010
Private Car – Drop Off	29	28	25	26	28	27
Private Car – Park	31	29	21	27	27	24
Rail	18	17	17	19	17	17
Bus/Coach	10	12	12	14	14	15
Taxi	13	14	15	14	14	16

9.4. Car Parking

Whilst the Surface Access Strategy seeks to encourage passengers and staff to travel to LLA by sustainable means, there will always be some passengers and staff who have no option but to travel by car. Policies LLA1 and LLA2 of the Borough of Luton Local Plan set out the criteria for airport car parking, both on and off site.

Staff car parking spaces have increased during 2011 whilst passenger car parking capacity has remained unchanged.

On site Car Parks or Car Parks within the airport boundary

Passenger	Spaces	Area m²
Short Term	1,556	39,373
Mid Term	2,780	65,000
Long Term	3,400	72,150
Passenger Total	***7,736***	***176,523***
Staff Total	***4,730***	***97,270***
Total	**12,466**	**273,793**

Policy LLA2 seeks to resist off site airport related parking, unless in exceptional circumstances. However, the existence of these sites should be acknowledged and monitored. Only authorised car parks are noted in the following table, although others may occur around the airport boundary.

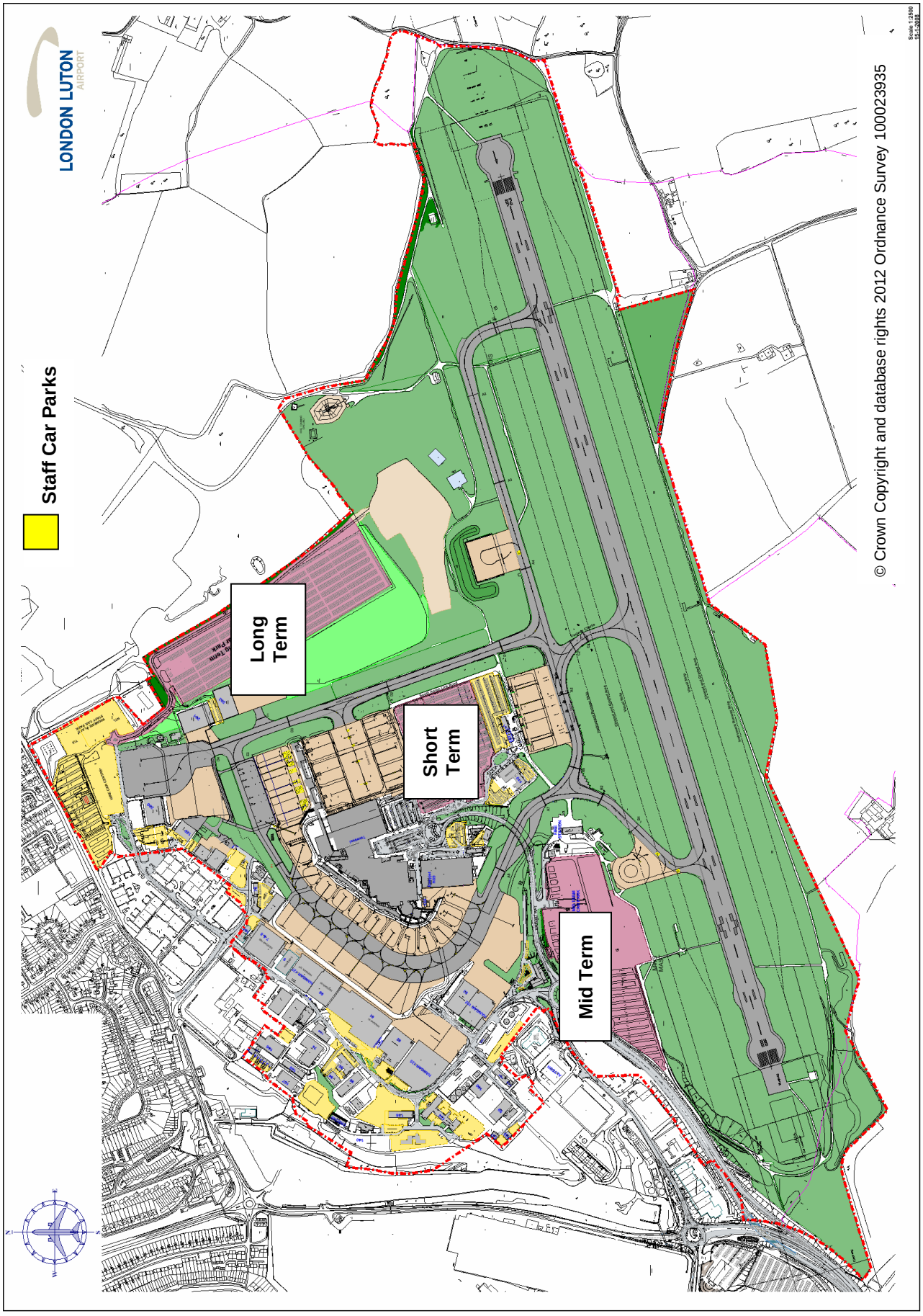
Off site Car Parks or Car Parks outside the airport boundary

Operator	Spaces*	Area ha
Airparks (Slip End)	3,510*	5.97
Central Car Storage	216*	0.56
Airport Carparkz (temporary consent expires February 2012)**	425	2.49
Total	**4,151**	**9.02**

* Numbers of spaces given relates to the number approved as part of planning conditions imposed at the time of determination of the application.

** This site was operated as an unauthorised facility following the refusal of planning permission and the serving of an Enforcement Notice by Luton Borough Council. At a subsequent appeal, the Inspector dismissed the appeal, but granted an extension to the period of compliance with the Enforcement Notice.

Figure 9.4.1: Location of Passenger and Staff Car Parking



10. Planning

10.1. National Aviation Policy

The Government's White Paper "The Future of Air Transport" which was published in December 2003, remains the strategic framework document for the development of national airport capacity. This it is expected to be replaced in 2013 as part of the National Aviation Policy Review. Prior to this a consultation document will be published in summer 2012.

It is understood that unlike the White Paper, the review will be a high level document rather than a specific reference to individual airports.

For further information regarding National Aviation Policy prior to 2003, please refer to previous editions of the AMR.

10.2. Strategic Planning Policy

Regional Spatial Strategies (RSS) to replaced strategic policies in Structure Plans. Bedfordshire and Luton reside within the East of England Region. RSS14 for the East of England known as the 'East of England Plan' and covered the period to 2021. RSS14 was adopted in May 2008 and reflects national aviation policy (section 10.1 above), which sets a framework for growth at the region's airports including LLA to 2030. RSS14 specifically focuses on Economic Policy E8 and Transport policy T12 which respectively cover economic objectives of aviation, integrating surface access, modal shift and the environmental safeguards to be addressed within Local Development Frameworks (as informed by development proposals within a MP).

Following the General Election in 2010 and the forming of a coalition Government, the Secretary of State signalled the end for Regional Plans and targets. The impending Localism Bill was cited as a material consideration in determining planning applications until the new legislation had been introduced as part of the 'Localism' approach to planning.

In November 2010 the High Court overturned the Secretary of State's revocation of the regional planning framework, as it went beyond his legal powers under the 2004 Planning & Compulsory Purchase Act. The Government's subsequent advice to local government is that the mere intention to abolish Regionalism under the Localism Bill, is nevertheless a material consideration in determining planning applications.

However, the High Court has also 'stayed' this guidance (i.e. temporarily blocked it, pending a full hearing into the legality, in January 2011). While the Government is now challenging these High Court rulings, the effect is to reinstate the policies of the adopted East of England Plan which provides strategic guidance on aviation (e.g. any expansion making provision for sustainable surface access and environmental safeguards) while deferring to national aviation policy.

The Regional Strategy therefore continues to form part of the Development Plan for the joint planning area (which includes the Airport) and local policies must be in general conformity with the plan. In 2011 the Localism Act was given Royal Assent. This provides enabling powers to the Secretary of State to abolish regional plans, but this is yet to happen by separate orders. The regional plan remains part of the development plan until revoked.

10.3. Local Planning Policy

The Joint Committee discussed the emerging Core Strategy on 24th June 2011 and voted to withdraw it. Luton Borough Council Members of the Joint Committee did not support the core strategy document. However, Central Bedfordshire Council wishes to separately continue to adopt the Core Strategy, as interim guidance for development management purposes until a local plan can be prepared. Consequently work commenced on a Local Plan for Luton in the form to be determined by the National Planning Policy Framework (NPPF), when that is finally agreed. However, in the interim, under the old system, the Borough Council's adopted Luton Local Plan

(March 2006) remains part of the statutory development plan until replaced when the new local plan is prepared.

The Local Plan (March 2006) must be taken together with sub regional and regional policy. Furthermore, the LLA Development Brief (February 2000) sets out detailed proposals for further development at LLA and is adopted by Luton Borough Council as Supplementary Planning Guidance (in September 2001).

Following consultation the NPPF was published in March 2012 and resulted in Local Plans being the all encompassing document, which no longer supported Planning Policy Guidance, as with the current form of local plans. It also supported the aspiration under Localism, which requires local authorities to adopt an approach of a duty to cooperate on cross boundary schemes and policies.

The publication of the Localism Act on 15th November 2011, signalled an overhaul of the planning system with more emphasis on a national policy framework and local neighbourhood plans.

10.4. Luton and Dunstable Local Transport Plan 2001-2006 (LTP1)

The Local Transport Plan (LTP1) was first submitted to central Government in July 2000. It contained two major transport schemes proposed to serve the south east of Luton, including the Airport: the Luton Dunstable Busway (LDB) and road and junction improvements in the East Luton corridor. The latter received Government approval following a Public Inquiry in 2005 and construction began in July 2006, funded through the Communities Infrastructure Fund and the second round of the Growth Areas Fund.

The LDB received provisional funding though the LTP capital programme in December 2003 and a Public Inquiry reported favourably upon the scheme in late 2006. A final business case was submitted in December 2009 and construction began in 2010. Completion is expected in Spring 2013.

10.5. Luton-Dunstable-Houghton Regis Local Transport Plan 2006-2011 (LTP2)

The second Luton-Dunstable-Houghton Regis Local Transport Plan was submitted to central Government in March 2006. It includes a long-term strategy, for the period up to 2020. One of the objectives of this strategy is to achieve planned growth at the Airport. Over the period up to 2011 the Plan is structured around a series of 'Shared Priorities', which have been agreed between Central and Local Government: accessibility, air quality, congestion and safety. Of these, accessibility is the most relevant to surface transport serving the Airport and under this heading the LTP proposes improvements at Luton Airport Parkway station (for example, providing a new entrance from Kimpton Road) a development that is consistent with the routeing of the LDB along Kimpton Road. The LTP sets out a range of other measures to give better access to the Airport, particularly for employees. In other respects the new LTP updates the first LTP, retaining many of the schemes in it (including the LDB and East Luton Corridor schemes).

10.6. Local Transport Plan for Luton 2011-2026 (LTP3)

The Council has submitted the third Local Transport Plan (LTP3) for Luton to Government. This sets out how we will deal with transport matters in and around the town. Whereas the first and second LTPs covered Luton, Dunstable and Houghton Regis, the third plan only covers Luton. The LTP3 comprises two main parts.

The first sets out the long-term Transport Strategy covering the period up to 2026; consistent with the emerging Local Development Framework and the Sustainable Communities Strategy. The Council consulted a wide range of partners and stakeholders, including London Luton Airport Operations Limited, in developing this part of the Plan.

Based on recent trends in both passenger throughput and airport employees at Luton, and taking account of recent changes in government policy relating to other London airports, the LTP3 strategy sets out anticipated passenger numbers of between 15.5 and 18 mppa by 2026, together with an additional 3000 employees over the same period.

The Interim *Airport Surface Access Strategy* (*ASAS*) was published by the Airport in 2009 and is due to be reviewed in 2012. It is the Airport operator's intention to include longer term targets to encourage sustainable travel to the Airport and this review will cover the period to 2016. The Council will work with the Airport operator to achieve this.

The second part is the LTP3 Implementation Plan which sets out local transport schemes and initiatives we propose to introduce over the next 4 years. Key elements of the Implementation Plan of relevance to the airport include:

- a focus on smarter choices and travel by more sustainable modes (walking, cycling , public transport) supported by employee travel plan initiatives (e.g. car share database)
- implementation of a new northern entrance to Luton Airport Parkway Station
- improvement of M1 Junction 10a
- extension of Airport Way to serve planned employment sites east of the Airport

Community and Stakeholder consultation on the whole of the Plan and accompanying Strategic Environmental Assessment (SEA) commenced on 24th December 2010 and ended on Monday 14 February. The finalised LTP3 was presented to the Council's Executive and finally adopted in March 2011.

10.7. Developments in and around London Luton Airport

Background

Policy 48 of the Structure Plan 2011 required the long-term growth strategy for the Airport to be subject to a Development Brief. The Development Brief was produced by LLAOL for consultation in February 2000 and subsequently approved as Supplementary Planning Guidance by LBC in September 2001.

The adopted Development Brief is the current framework for planning applications, although the Surface Access Strategy has since been reviewed and a further review was undertaken and the Interim Airport Surface Access Strategy 2009-2011 was published in August 2009. This document is also subject to review in 2012.

Eventually the new planning system and the provisions of the Aviation White Paper will supersede current policy. Until that time the existing policies have been saved through the process described above.

Under the Town and Country Planning (General Permitted Development) Order 1995, Schedule 2 Part 18 Class A, LLAOL is able to undertake works within the designated "operational area" of LLA, without the need for formal planning consent. Under this legislation, permitted development includes:

"The carrying out on operational land by a relevant airport operator or its agent of development (including the erection or alteration of an operational building) in connection with the provision of services or facilities at a relevant airport"

An operational building is defined as:

"A building, other than an hotel, required in connection with the movement or maintenance of aircraft, or with the embarking, disembarking, loading, discharge or transport or passengers, livestock or goods at a relevant airport."

Development is not permitted if it involves:

- *The construction or extension of a runway;*
- *The construction of a passenger terminal the floor space of which would exceed 500 square metres;*
- *The extension or alteration of a passenger terminal, where the floor space of the building as existing at 5th December 1988 or, if built after that date, would be exceeded by more than 15%;*
- *The erection of a building other than an operational building*
- *The alteration or reconstruction of a building other than an operational building, where its design or external appearance would be materially affected.*

Planning Applications

There were no notable physical developments undertaken or commenced by LLAOL within the Airport boundary during 2011.

Other developments on or adjacent to the site, but carried out by third parties include:-

- Construction of car valeting and refuelling facility – Hangar 22, Percival Way
- Construction of sprinkler tanks, substation and advertisements – Hangar 125, Percival Way
- Siting of a pre-fabricated modular security building to allow airside access – Monarch, Hangar 9, Percival Way
- Construction of new access ramp and entrance to relocated reception area – Monarch Aircraft Engineering, 60 Percival Way

Hotel developments

The Good Practice Guide on Planning for Tourism, which replaced PPG21 (Tourism) in 2006, states: "*Tourism is of crucial importance to this Country. It generates significant revenues, provides millions of jobs, supports communities and helps maintain and improve important national assets".*

The area around the Airport proves to be attractive to hotel developers and operators. The following sites have valid planning permissions for such development –

Site address	Application approved	Number of bedrooms
Express by Holiday Inn	Implemented	147
Hotel Ibis	Implemented	162
Premier Inn (The Brache)	Implemented	131
Napier Park	19.10.2006	200
42-50 Kimpton Road	Under construction	188
Vauxhall Trailer Park	Subject to a S106 legal agreement. Not yet issued	250
Blush House, Airport Way	Under construction	124
Airport Way/ELC	Approved 16.02.2011	171
	Total rooms	**1373**

It is envisaged that the demand for hotel accommodation in Luton over the next 5-10 years will grow substantially, particularly attracted during the period of the Olympics.

Planning Appeals

An appeal for an off airport car park at Vauxhall Trailer Park was lodged with the Planning Inspectorate in 2010; this appeal was dismissed on 14 February 2011. The appellant has a period of 12 months in which to cease the use of the site for off airport car parking, following a variation of the enforcement notice by the Inspector.

An Enforcement Notice was served in respect of an off airport car park operator for a site in Park Street, Luton. The site was a former garage site, which had been cleared and vacant for a few years. The site is close to residential properties and the occupants were experiencing noise and disturbance at unreasonable hours. The use also raised highway safety issues as well as compliance with Policy LLA2. An appeal against the notice was lodged with the Planning Inspectorate in December 2011 and the decision expected in early 2012.

11. Glossary and Definitions

A-weighting	A frequency response used in sound measurement devices to take account of the way the sensitivity of the human ear varies with frequency.
Aircraft Movement	A landing or take-off of any aircraft from the Airport.
Cargo Aircraft	Aircraft movements which are solely for freight. It should be noted that freight can also be carried in the hold of passenger aircraft.
Complaint	A complaint is the reporting of disturbance caused by actual aircraft operations affecting the reporter of the complaint to the Airfield Environment Office, hereafter called the 'complainant'. It reflects discontent and is triggered by or attributed to either a specific aircraft event outstanding in its impact or, by general patterns such as frequency, volume, aircraft fleet mix, runway split, operating hours, etc. One complaint may contain a number of incidences of disturbance referred to as 'events'. All other comments received are logged and reported separately if they do not meet the above criteria.
Decibel (dB)	The logarithmic ratio of a sound pressure compared to a reference sound pressure in decibels, dB. For audible sound A-weighted decibels are commonly used, dB(A).
dB(A)	The unit of sound pressure level, weighted according to the A scale, which takes into account the increased sensitivity of the human ear at some frequencies.
General Aviation	Private Aircraft, Helicopters and Business Jets
ICAO	International Civil Aviation Organisation.
INM	Integrated Noise Model. A method of noise contour modelling which uses a wide range of different aircraft types and can be adjusted according to operating procedures.
LAeq,T	The notional A-weighted equivalent continuous sound level which, if it occurred over the same time period, would give the same noise level as the continuously varying sound level. The T denotes the time period over which the average is taken, for example LAeq,16h is the equivalent continuous noise level over a 16 hour period.
Military	Flights by British or foreign military aircraft exclusively for military purposes.
Noise Certificated	An aircraft conforming to the requirements of ICAO Annex 16 which lays down specific levels of noise not to be exceeded at specific points on an aircraft's departure. An aircraft must be noise certificated in order to operate at United Kingdom Airports after 1 January 1988 unless exempted by the Civil Aviation Authority.

Noise Preferential Route (NPR)	Noise Preferential Routes are established to ensure that departing aircraft avoid overflying densely populated areas in the vicinity of an Airport, as far as practicable. NPRs are valid until the aircraft has reached an altitude (above mean sea level) of 3,000ft during the daytime or 4,000ft at night, depending on the flight route. Once an aircraft has achieved this altitude Air Traffic Control may tactically vector the aircraft, taking into account any other airspace constraints, in order to integrate it into the overall flow of national traffic.
Official	Flights solely for official purposes by British or foreign civil government departments.
Positioning Flights	Flights by air transport operators for the sole purpose of moving their own aircraft, personnel or stores from one place to another and air transport flights forced to return to base by bad weather, engine failure or other causes.
Runway Usage	For operational and safety reasons, aircraft generally take-off and land into the wind. When winds come from the west (westerly operations), aircraft will take-off and land towards the west and when winds come from the east (easterly operations) aircraft will depart and land towards the east.
Test & Training	Flights for the purpose of testing aircraft/Airports or for training flying crew or ground personnel. Also included in this category are demonstration flights by makers or sellers of aircraft and aviation equipment. N.B. Flying Club instructional flights are excluded from this category.

12. Useful Links

London Luton Airport	www.london-luton.co.uk
Luton Borough Council	www.luton.gov.uk
The Civil Aviation Authority	www.caa.co.uk
NATS (National Air Traffic Services)	www.nats.co.uk
The Department for Transport (Aviation)	www.dft.gov.uk/aviation
Hertfordshire & Bedfordshire Air Quality Monitoring Network	www.hertsbedsair.org.uk
London Luton Airport Consultative Committee	www.llacc.com

Appendix A – Night Noise Policy

NIGHT NOISE POLICY (ISSUE 8)

Department:
Airfield Operations

Authority:
Airport Operations Director

Distribution:
Aircraft Operators

UK Aeronautical Information Publication (UK AIP)
Luton Based Handling Agents,
Airport Operations, London Luton Airport, Consultative Committee,
London Luton Airport Noise and Track Sub-Committee Upon Request

Effective Date:
1st April 2010 to 31st March 2015

Review Status:
Amended 1st February 2010

Issue	Date	Description
1	28th March 2002	First issue
2	5th April 2002	Insertion on policy for departing aircraft below 34,000 kg
3	26th April 2002	Amendments following Night Jet Working Group Consultation
4	13th May 2003	Authority title changed to Airport Services Director
5	1st October 2003	Amendment to Aerodrome Flying Training Restrictions at night
6	4th September 2006	Amendments incorporating review of Night Noise Working Group
7	21st February 2007	Amendments incorporating review of Night Noise Working Group
7	1st December 2008	Policy extended to March 31st March 2010 without amendment
8	1st February 2010	New policy incorporating NTSC review and Noise Action Plan objectives

1. Purpose

1.1 London Luton Airport Operations Limited (LLAOL), operator of London Luton Airport, is licensed by the Civil Aviation Authority (CAA) for 24-hour operations under its Public Use Aerodrome License issued in accordance with the Air Navigation Order (1995).

1.2 LLAOL's commitment is to voluntarily minimise the effect of night noise on the surrounding community, whilst balancing the economic and social benefits of its night operations with the consequential noise impact. The Night Noise Policy seeks to set out those controls and procedures implemented to minimise night noise impact, as well as detailing monitoring activities and how this information will be shared and communicated.

1.3 For the purpose of the Night Noise Policy night is defined as:

2300 - 0559 Local Time (Monday to Saturday)

2300 - 0659 Local Time (Sunday)

Additional controls are in place for an 8 hour night noise contour period (2300 – 0700) and flying training restrictions apply between 2000 and 0800.

2. Background

2.1 LLAOL originally published its Night Jet Policy with the specific aim of accelerating the removal of Chapter 2 aircraft from its night operations. This objective was successfully achieved and that policy expired to coincide with the implementation of national regulations regarding Chapter 2 aircraft from the 1st April 2002. Since 2002, LLAOL has published further versions of the Night Noise Policy.

2.2 This Night Noise Policy (Issue 8) seeks to build on this approach, taking into consideration the views of community and aviation stakeholders, as well as forming an important component of the London Luton Airport Draft Noise Action Plan.

2.3 With regards to night noise, LLAOL operates within Condition 11 associated with the planning consent granted in 1998. This

requires the airport to operate in such a manner that the night noise contours do not exceed the impact, which occurred in 1984 in terms of land area affected. In particular, the area within the 48 dB(A), LAeq,8h contour for an average summer's night shall not exceed 85 km2. If results show that the 1999 predicted values have been exceeded, an action plan will be implemented to avoid the possibility of exceeding the 1984 values.

2.4 LLAOL will continue to comply with the planning conditions and, in particular in the context of this Policy, Condition 11.

2.5 In September 2009, LLAOL published its first Draft Noise Action Plan (2010-2015) for public consultation, which was prepared in response to the Environmental Noise Directive (2002/49/EC), transposed into UK law under the Environmental Noise (England) Regulations 2006 (as amended). The final Draft Noise Action Plan was submitted to the Department for Environment, Food and Rural Affairs (DEFRA) and the Department for Transport in late January 2010. Subject to formal adoption by DEFRA, London Luton Airport will publish the final Noise Action Plan shortly thereafter. Once published, the Noise Action Plan will set out London Luton Airport's noise management strategy. This Night Noise Policy forms part of the Noise Action Plan and will be appended to it.

3. Monitoring

3.1 LLAOL has developed a programme of noise monitoring to understand further the impact of its operations on the local community and is committed to report the results to the London Luton Airport Consultative Committee (LLACC) and/or its Noise and Track Sub Committee (NTSC), as well as to other interested parties, in an agreed and recognised format.

3.2 LLAOL will continue to maintain a noise and track-keeping system to monitor aircraft operations.

3.3 LLAOL will continue to monitor the noise of departing aircraft at fixed monitors at each end of the airport runway and report the results quarterly to the LLACC and/or NTSC.

3.4 LLAOL will continue to monitor the number of aircraft movements at night and report them quarterly to the LLACC and/or NTSC, and on an annual basis in the Annual Monitoring Report, produced in collaboration with Luton Borough Council.

3.5 LLAOL will continue to monitor and respond to any complaints made to the airport about its night operations and report details of these complaints, quarterly, to the LLACC and/or NTSC.

3.6 LLAOL will prepare LAeq,8h noise exposure contours for an average night in each quarter (Jan-Mar; Apr-Jun; Jul-Sep; and Oct-Dec) for the night contour period (2300-0700). These contours will commence at 48 dB(A) and show increasing values in 3 dB(A) steps, and will be reported to the LLACC and/or NTSC.

3.7 LLAOL will continue to produce annually noise contours for the average summer's night (mid-June to mid-September) based on actual movements and similar contours predicted for the forthcoming summer in accordance with Condition 11 attached to the 1998 planning consent.

3.8 LLAOL will monitor and report night time Continuous Descent Approach (CDA) performance quarterly to the NTSC and work with operators and National Air Traffic Services (NATS), through the Flight Operations Committee (FLOPC), to improve compliance rates. LLAOL will agree a night time CDA target with NATS and monitor progress with the support of FLOPC and report to NTSC.

3.9 LLAOL will provide its aircraft operators and pilots with noise and track keeping data at the quarterly FLOPC meetings in order to monitor trend data, with a view to improving track-keeping performance, particularly at night.

4. Control Measures & Procedures

4.1 LLAOL will develop and implement policies, procedures and control measures to minimise the effects of aircraft noise and encourage improvements from airline and other operators.

Night Operating Charges

4.2 LLAOL will continue to encourage daytime operations through levying higher night operating charges. These will be published in the London Luton Airport Charges and Conditions of Use document (available at http://www.london-luton.co.uk/en/content/8/160/operations.html).

NIGHT NOISE POLICY (ISSUE 8)

Noise Violation Limits

4.3 LLAOL will continue to apply surcharges on the Landing and Navigation Service Charge in respect of any landing immediately prior to a take-off. From 1st April 2010, the night noise violation limits will be lowered. The following surcharges will be levied if maximum noise levels are recorded at any of the monitors during the night period:

2300 - 0559 Monday to Saturday & 2300 - 0659 on Sunday:

>82 - 85 dB(A)	- 300% surcharge
>85 - 88 dB(A)	- 500% surcharge
>88 dB(A)	- 600% surcharge

Operational Controls - Chapter 2 Aircraft

4.4 LLAOL will comply with the Aeroplane Noise Regulations 1999, which state that 'with effect from 1st April 2002, all subsonic jet aircraft with a maximum take off weight of more than 34,000 kg and a capacity of more than 19 seats operating to airports in the EEA must comply with Chapter 3 noise standards regardless of the age of the aircraft'. Aircraft hushkitted or modified to Chapter 3 standards comply with these requirements.

4.5 There are special agreed EC Provisions, which LLAOL will have to comply with and these provide exemptions to certain aircraft registered in developing nations and meeting specified criteria. The UK is also obliged by the EC Directive to recognise exemptions granted by other states in respect of Chapter 2 aircraft registered in those states Details of exempted aircraft are available from the CAA's Economic Regulation Group, CAA House, 45-59 Kingsway, London, United Kingdom.

4.6 Additionally the CAA would normally be prepared to grant exemptions in respect of Chapter 2 aircraft visiting the UK solely for the purposes of maintenance provided that the aircraft operates empty on both inbound and outbound sectors. Chapter 2 aircraft under such exemptions may be permitted to operate into Luton.

4.7 In addition, LLAOL extended the restriction described above to aircraft with a maximum take-off weight of more than 11,600 kg between the hours of 2300 to 0559 Monday to Saturday and from 2300 to 0659 on Sunday for departure movements only. Arrival movements remain unrestricted 24-hours per day.

4.8 LLAOL will work with operators to encourage the voluntary phase out of the noisiest aircraft.

4.9 Exemptions to the restrictions set out in Paragraphs 4.4 and 4.7 above are:

- delayed departures of any aircraft exempted by the CAA from the requirements of the Aeroplane Noise Regulations;
- departures permitted in emergency situations;
- relief flights where urgent need exists;
- military and support aircraft for military operational reasons;
- delays to aircraft which are likely to lead to serious congestion at the aerodrome or serious hardship or suffering to passengers and/or animals;
- off schedule movements from major disruption of air traffic; and
- VIP flights, which include flights by members of the Royal Family, UK Government Ministers and Service Chiefs of Staff, and members of foreign Royal Families, Heads of State and senior ministers, but excludes show business and sports personalities.

4.10 Details of any such exemptions will be reported quarterly to the LLACC, although for security reasons LLAOL may be unable to supply full details.

Operational Controls - Flying Training[1]

4.11 Flying Training will not be permitted between the hours of 2000 and 0800. This means no jet aircraft training or air testing can be undertaken between these hours. All aircraft movements to and from London Luton Airport between these hours will be expected to be associated with an arrival and/or a departure. NPR exempt aircraft will not be subject to this restriction.

4.12 In exceptional circumstances Operators can apply to LLAOL for permission to carry out Flying Training or Air Tests. The conditions under which LLAOL may grant exceptional permission for Flying Training or Air Tests are;

- Delays to aircraft which are likely to lead to serious congestion at the aerodrome or serious hardship or suffering to passengers and/or animals where an Air Test is required to enable a planned flight to operate a service.
- Unplanned technical repair of an aircraft scheduled to operate a passenger or cargo revenue service.
- VIP flights, which include flights by members of the Royal Family, UK Government Ministers and Service Chiefs of Staff, and members of foreign Royal Families, Heads of State and senior ministers, but exclude show business and sports personalities.

Operational Controls - Noise Scheduling Ban

4.13 Effective 1st April 2010, LLAOL will extend its scheduling ban to include QC4/QCB/QC 16 type aircraft, with no aircraft scheduled to arrive or depart between the hours of 2300 to 0559 Monday to Saturday and 2300 to 0659 on a Sunday, with the exception of those exemptions listed in Paragraph 4.9 above.

Operational Controls - Engine Ground Running

4.14 The use of the term 'engine run' is a generic term that applies to any combination of the following:

- Aircraft Engine Ground Run - any engines start up not followed immediately by the departure of the aircraft concerned (including engine dry running and cross bleed starts).
- Auxiliary Power Unit (APU) Run - any APU start up that is not immediately connected with the pre-flight or post flights sequence for an aircraft.
- Ground Power Unit (GPU) Run - any GPU start up that is not immediately concerned with the pre-flight sequence for an aircraft departure or post flights sequence, this includes GPU maintenance runs of greater than two hours.

4.15 Engine ground running and the testing of engines will not normally be permitted during the night period as shown below, unless the aircraft concerned is required for a London Luton Airport service departing during the first wave of flights of the day. Positioning flights are not included within this category.

- Weekdays - between 2300-0559 hours local
- Saturdays, Sundays and local Public Holidays - between 2300-0659 local

4.16 Applications for engine runs are required to be submitted to the airport through the Airport Operations Centre with a minimum of 1 (one) hours prior notice being given before the planned commencement of the engine run. Applications submitted with less than 1 hours notice will only be considered if the engine run is safety critical.

4.17 Approved ground running operations will be monitored by ATC and LLAOL. If the parameters contained within the Approval detail are not adhered to, the operation will be terminated by LLAOL through ATC.

5. Communication

5.1 LLAOL will circulate this Policy to the distribution list set out above, publish on its website and amend the London Luton Airport Charges and Conditions of Use document accordingly.

6. Notes

6.1 Any changes in legislation or regulation by the Government or other national authority shall take precedence over the clauses within this Policy. LLAOL will amend this Policy in light of new legislation and regulations.

6.2 This Policy shall apply from 1st April 2010 to 31st March 2015, with an interim review in October 2012.

[1] *The definition of flying training also includes air testing where aircraft under maintenance are technically required to conduct an actual flight, which may involve circuits at approved altitudes.*

LTN

This document can be made available in a range of languages, large print, Braille, on tape, electronic and accessible formats from Kevin Owen. Tel: [redacted]

Informacje te moga być dostępne w innym formacie. Jeżeli wymagana jest kopia napisana większym drukiem, na kasecie lub w języku innym niż angielski prosimy o kontakt telefoniczny pod numerem: [redacted]

[illegible] 01582 547 087 [illegible]

[illegible] 01582 547 087 [illegible]

[illegible] 01582 547 087 [illegible]

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LUTON BOROUGH COUNCIL

LONDON LUTON AIRPORT

ANNEX C - AIRPORT ANNUAL MONITORING REPORT 2012

LTN

Annual Monitoring Report 2012

LUTON BOROUGH COUNCIL

LONDON LUTON AIRPORT

Executive Summary

Activity

London Luton Airport (LLA) served just over 9.6 million passengers in 2012, an increase of 1% year on year. The services included 11 new routes resulting in a total of 99 destinations in 2012, compared to 95 in 2011.

There were a total of 98,763 aircraft movements during 2012, a decrease of less than 1% compared to 2011. These aircraft movements consisted of 74,976 passenger flights, including commercial flights by executive aircraft. The most common aircraft types used for passenger aircraft movements during 2012 were the Airbus A319 (28%), Airbus A320/321 aircraft (27%) and the Boeing 737 (13%).

General Aviation and non-commercial executive aircraft movements decreased by 3% year on year but the cargo handled at the Airport increased from 27,942 tonnes in 2011 to 29,663 tonnes during 2012. Most of this cargo was carried by the Airbus A300 freighter, the movements of which were similar to last year, increasing just slightly from 1,036 in 2011 to 1,075 in 2012, with the majority (72%) involving newer series A306 aircraft types, as the cargo operators continue to upgrade their fleets.

Operational Matters

The mode of operation at the Airport consisted, as usual, of a predominance of westerly operations, with landings from the direction of Stevenage and departures towards the M1 for 73% of the time. The day/night ratio of total aircraft movements during 2012 was 92% day / 8% night, compared to 91% day / 9% night in 2011. No permanent changes to any flight routes occurred during 2012, with the busiest departure routes being Clacton/Dover/Detling, towards the Brookmans Park beacon and Compton, towards the Tring area.

The Airport continued to monitor the use of Continuous Descent Approaches (CDAs) and has provided the London Luton Airport Consultative Committee (LLACC), via the Noise & Track Sub-committee, with detailed statistics on CDA achievement on a regular basis. The overall achievement rate during 2012 was 86%, compared to 87% in 2011.

Developments

There were no notable physical developments undertaken or commenced by LLAOL within the airport boundary during 2012.

Other developments on or adjacent to the site, but carried out by third parties include:-

- Change of use and extension to ground floor of Building 135 to accommodate a Fixed Base Operation (FBO), including a revised access, car parking and landscaping arrangements. The scheme included the demolition of Hangar 55 and Office Building 72,
- Demolition of existing structures and erection of a replacement two storey Fixed Base Operation building together with associated apronage and car parking, landscaping and access works including new vehicular access onto Percival Way for Signature (Hangar 63 and 102, 63-1-2 Percival Way);
- Demolition of existing structures and construction of replacement hangar together with provision of associated apronage and car parking and replacement cargo centre compound. Relocation of the existing cargo compound area and cargo aircraft stands along with alterations to existing Gate 9 security access, also for Signature.
- Refurbishments to existing building to include new main entrance with disabled ramp under new external canopy and new windows on front elevation at Monarch Airways, Building 136
- Installation of eight new windows into existing building at Monarch Airways, Building 134.
- Erection of entrance porch at easyJet (Hangar 89)
- New advertisements for Thomson Airways (Hangar 61)

Planning

The Luton and Southern Central Bedfordshire Joint Committee was disbanded in March 2012 following the Secretary of State withdrawing the pre-submission Core Strategy in September 2011. Luton Borough Council Members of the Joint Committee did not support the core strategy document. However, Central Bedfordshire Council have prepared a new Development Strategy largely founded on the approach of the previous joint core strategy as far as it relates to Central Bedfordshire, and this plan has undergone a pre-submission consultation although its progress is halted pending new work on objective housing evidence via a joint Strategic Housing Market Assessment with Luton and other partners within the housing market area. Consequently work commenced on a Local Plan for Luton under the requirements set out within the NPPF. However, in the interim, the Borough Council's adopted Luton Local Plan (March 2006) remains part of the statutory development plan until replaced when the new local plan is prepared.

Furthermore, the LLA Development Brief (February 2000) sets out detailed proposals for further development at LLA and is adopted by Luton Borough Council as Supplementary Planning Guidance (in September 2001).

The NPPF was published in March 2012 and requires plans to be soundly prepared i.e. positively prepared (evidenced based on objective needs); justified (against reasonable alternatives); effective (deliverable which requires local authorities to adopt an approach under the duty to cooperate on cross boundary matters); and consistent (with national policy).

The publication of the Localism Act in November 2011 signalled an overhaul of the planning system with more emphasis on a national policy framework and local neighbourhood plans.

A work programme for the new Local Plan (Local Development Scheme or LDS) to replace the existing Luton Local Plan was approved by the Council's Executive on 23 January 2012, commencing with evidence gathering. Throughout the process, negotiations are required under the 'duty to cooperate' to achieve a satisfactory understanding with neighbouring authorities. This is critical to the soundness of respective local plans.

A six week consultation took place from 25th June to 3rd August 2012 inviting representations on the content of the new local plan. A separate development plan document relating to the Community Infrastructure Levy (CIL) was also to be progressed in parallel with the new local plan.

Noise

Aircraft noise in 2012 has been monitored continuously at the three fixed noise monitors and the Airport's noise contours regularly updated. The individual noise of each departure has been compared to noise violation limits of 94dB(A) during the daytime and 82dB(A) at night. There were no daytime violations during 2012 and just 3 violations at night (two A30B cargo jets and one ad hoc, older generation business jet), compared to 12 night violations during 2011. Continuous monitoring indicates that the vast majority of aircraft operated well below the current violation limits, with 99% of daytime departures and 97% of night departures registering maximum noise levels less than 79dB(A) and 86% of daytime departures and 84% of night departures registering maximum noise levels less than 76dB(A).

The Airport has to operate within limits on the area of the day and night contours, set by planning conditions in 1998 when the new terminal was approved.

	Daytime (57dB $L_{Aeq,16h}$) in km^2	Night-time (48 dB $L_{Aeq,8h}$) in km^2
NOT TO BE EXCEEDED	31.5	85.0
NOISE REDUCTION ACTION PLAN TO BE IMPLEMENTED	19.6	60.6
ACTUAL 2012	14.7	36.0

The contours for 2012 have been produced using the most recent version of aircraft noise modelling software, INM 7.0c, compared to version 7.0b in 2011. For this reason contour data from 2011 (as published in the AMR 2011) has been recalculated using the updated methodology, to provide a direct comparison, resulting in just a small increase in the contour areas year on year (+0.2% daytime and +0.1% night-time).

The areas within the 57dB(A) daytime contour (14.7 km^2) and the 48 dB(A) night-time contour (36.0 km^2) identify that the Airport is operating well within its planning limits. The 2012 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

The population counts for this year were calculated using the CACI Ltd, 2012 postcode database. Each postcode in the database is described by a single geographical point and if this point is within a contour then all of the dwellings and population in the postcode are counted. Counts for 2011 have been presented based on both contour methodologies (INM 7.0b and INM 7.0c), to enable direct comparison year on year.

As with the contour areas, increased population count figures year on year (based on figures published in the AMR 2011) were due largely to the change in contour methodology. When comparing the 2012 contour results with the 2011 contour results prepared using the same updated methodology (INM version 7.0c), much smaller changes to the dwelling counts and population figures are observed. For example, the daytime 57dB(A) contour shows an increase of around 8% for dwellings and 5% for population and the night-time 48dB(A) contour shows a decrease of around 2% for dwellings and 4% for population. The reduction at night-time is partly due to the updated postcode database.

In response to the Environmental Noise Directive (2002/49/EC) and corresponding regulations a Draft Noise Action Plan was prepared by the Airport during 2009, in partnership with LLACC, the Air Traffic Control provider and airline partners. A 16 week consultation period on this document was launched on 28th September 2009 and following consideration of consultation responses a final Draft Noise Action Plan was submitted to the Department for Environment, Food and Rural Affairs (DEFRA), for approval, at the end of January 2010. London Luton Airport published the final Noise Action Plan in January 2012, following formal adoption by the Secretary of State for Environment, Food and Rural Affairs. This document is available to view on the airport website, at the following link: http://www.london-lutoninthecommunity.co.uk/noise-action-plan

A progress update on the specific actions within the Noise Action Plan is outlined under Section 7 of this report.

Complaints

During 2012 a total of 938 complaints relating to LLA aircraft operations were received, compared to 733 in 2011, an increase of 28% year on year. This was due in part to heightened awareness concerning the Airport's Master Plan for future development, published in March 2012.

The number of complainants reporting concerns throughout the year increased from 305 in 2011 to 355 during 2012. These individuals were located in a wide area around the Airport, with the highest number of complainants originating from Flamstead, Harpenden and Redbourn.

The number of specific aircraft events reported by complainants increased from 1,770 in 2011 to 3,079 in 2012. However, 1,485 of these events (48% of total events) were reported by just four individuals, two residents in Harpenden and two individuals from the same household in Redbourn.

It should be noted that a number of residents from both Flamstead and Redbourn continued to report ongoing disturbance from westerly departures, after the six month easyJet trial to help tighten track-keeping on the 26 Clacton/Dover/Detling flight route ended on 6th November 2011. These concerns were all logged separately for statistical purposes only, up until the end of June 2012 (a total of 550 complaints from both villages). As from 1st July 2012 all complaints from Flamstead and Redbourn were included in the general complaint statistics (in agreement with LLACC).

During the year 144 individuals reported a total of 286 complaints concerning night noise disturbance from LLA operations, compared to 229 night noise complaints during 2011 (from 117 individuals). This amounts to 30% of all complaints received in 2012 although it should be noted that 26% of the reported night disturbance reports during 2012 originated from just four individuals, two in Harpenden, one in Hemel Hempstead and one in Pepperstock. A further 26 complaints received by the Airfield Environment Office during 2012 reported disturbance relating to overflights to or from other airports during the night period.

Employment

The methodology for this year's analysis is the same as for the previous year. Administrative data sources were used to conduct the survey, instead of sending out questionnaires as was the case up to the 2009 survey. The Inter Departmental Business Register was used as the main data source. This Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

It has been assessed that during 2012 around 8,200 people work at or around the Airport site. It is estimated that just over 85% of the jobs are full time positions.

Surface Access

The annual summer road count for 2012 shows an increase in 12hr/5day traffic flows on 2 of the 8 monitored roads. The highest increase in traffic count is +734 (+13%) on Frank Lester Way. The most significant decrease in traffic count is -468 (-8%) on Eaton Green Road. The overall marginal traffic flow compared with last year in these observation points is -431 (0.8%).

The number of staff car parking spaces remained unchanged during 2012, whilst passenger car parking capacity decreased slightly. Priority parking spaces were, however, introduced. The total car parking spaces on site now stand at 11,649, with around 7,900 spaces in off-site parks, a figure which has risen by about 90% since last year.

Conclusion

In 2012 London Luton Airport achieved a 1% increase in passengers, with a 1% reduction in total aircraft movements, incorporating a 3% decrease in the number of General Aviation and non commercial executive movements year on year. With a total of 98,763 annual movements the Airport served just over 9.6 million passengers and carried just below 30,000 tonnes of cargo (compared to just under 28,000 tonnes during 2011). During the year there were a total of 11 new routes served (nett total of 9 as two routes ended during 2012). The Airport has continued to provide major employment for the area and around 8,200 people are estimated to work at or around the Airport site.

During 2012 there was an increase in the number of complaints reporting disturbance from aircraft operations and in the number of aircraft events eliciting a complaint, due in part to heightened awareness following the publication of the Airport's Master Plan for future development in March 2012. There was also a 16% increase in the number of individuals reporting concerns to the Airport.

The contours for 2012 were produced using the most recent aircraft noise modelling software, INM 7.0c. When comparing the 2012 contour with the 2011 contour prepared using the same updated methodology, only marginal increases were identified in the contour areas year on year (+0.2% daytime and +0.1% night-time). The areas within the 57dB(A) daytime contour (14.7 km^2) and the 48 dB(A) night-time contour (36.0 km^2) identify that the Airport is operating well within its planning limits. The 2012 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

As with the contour areas, increased population count figures year on year (based on figures published in the AMR 2011) were due largely to the change in contour methodology. When comparing the 2012 contour results with the 2011 contour results prepared using the same updated methodology (INM version 7.0c), much smaller changes to the dwelling counts and population figures are observed. For example for the daytime 57dB(A) contour there is an increase of around 8% for dwellings and 5% for population and for the night-time 48dB(A) contour there is a decrease of around 2% for dwellings and 4% for population. The reduction at night-time is partly due to the updated postcode database.

The population affected has increased to just above 7,300 people during the daytime and to around 15,800 people at night. However, the Airport is still operating well within the limits set by the planning permission for the terminal resolved in February 1998.

1. Background

As a result of the Airport Act 1986, Luton Borough Council (LBC) formed a Limited Company, London Luton Airport Ltd, as freeholders and operators of the Airport in April 1987. In August of 1998, LLA Ltd then granted a 30 year agreement to a private consortium, known as London Luton Airport Operations Ltd (LLAOL), as the licensed managers and operators. An extension to this agreement between LLA Ltd and LLAOL was granted in August 2012, taking the concession period up to 2031.

This report is the 34th Annual Monitoring Report (AMR) and unless otherwise stated, looks at the calendar year 2012. It has been produced jointly by LBC and LLAOL.

In 1978, LBC in accepting the conclusions of the report of the Council's Chief Executive, entitled "Luton Airport, A Plan for the Future", affirmed the importance of monitoring in connection with noise levels, employment, housing and the effect on the highway system. They placed on record their willingness to discuss the results of such monitoring with interested bodies and in particular with the London Luton Airport Consultative Committee (LLACC). The arrangements for monitoring were approved in June 1979 and were reaffirmed in the Borough Council's 1985 Policy Document "Towards 5 million Passengers".

The results are also used to monitor the performance of the Borough of Luton Local Plan approved in 1997 - now superseded by the adopted Borough of Luton Local Plan March 2006 - and constitute one of the material considerations when the Borough Council considers development proposals or determines planning applications for further development of the Airport.

Any monitoring system of this nature will have minor inaccuracies that can only be resolved as the monitoring arrangements evolve. Where more accurate figures for previous years have become available, these have been incorporated in the Report. Where additional information for previous years has become available this has also been included in the Report. Where data is no longer available then this is also identified with reasons.

The Leq contours are produced by Bickerdike Allen Partners for LLAOL using the FAA INM (Integrated Noise Model) model and LLAOL provides the contour outputs to LBC.

This is the 26th Annual Monitoring Report to be prepared since LLA became a Limited Company. All operational statistics are saved directly from the Airport's electronic monitoring systems unless otherwise stated. Employment and surface access data is compiled from LBC's monitoring systems.

The INM model for calculating the Leq noise contours was proposed by LLAOL after reporting the benefits of this model to the Noise & Track Sub-Committee of the LLACC on 15th November 1999. Subsequently the LLACC agreed the proposed move to the INM method on 13th December 1999.

Following extensive work between LBC and LLAOL the 2004 AMR radically improved the speed of information delivery, the format and content in accordance with the wishes of LLACC. Sections 2-7 have been produced exclusively by LLAOL. Sections 8-10 have been produced by LBC with data input on employment counts and car parking supplied by LLAOL.

Following validation the statistics contained within this report may differ to those presented in the Quarterly Airfield Environment Report.

Sections 2-8

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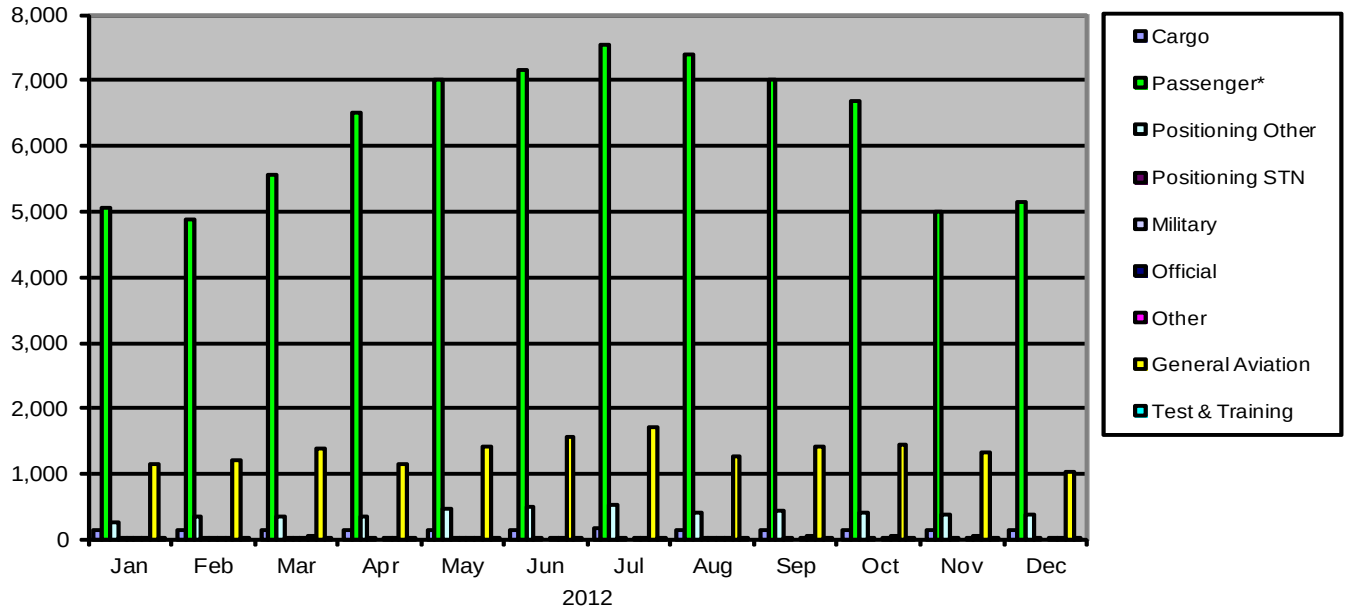
2. Aircraft Movements

2.1. Total Aircraft Movements

An aircraft movement is the take-off or landing of any aircraft from the Airport. There were a total of 98,763 aircraft movements during 2012 (compared with 99,299 in 2011), a slight decrease of less than 1%. This resulted in an average 271 movements per 24 hours (in comparison with 272 in 2011).

	Commercial					Non - Commercial						
	Cargo	Passenger*	Positioning		*Total*	Military	Official	Other	General Aviation	Test & Training	*Total*	**Total**
			Other	STN								
Jan	139	5,066	276	11	*5,492*	3	7	34	1,142	9	*1,195*	**6,687**
Feb	157	4,880	352	18	*5,407*	1	6	39	1,220	29	*1,295*	**6,702**
Mar	156	5,550	365	20	*6,091*	1	10	42	1,388	18	*1,459*	**7,550**
Apr	143	6,497	354	17	*7,011*	0	4	35	1,158	23	*1,220*	**8,231**
May	158	7,006	472	20	*7,656*	2	10	39	1,415	32	*1,498*	**9,154**
Jun	156	7,145	502	30	*7,833*	0	11	20	1,575	8	*1,614*	**9,447**
Jul	171	7,558	529	23	*8,281*	0	11	22	1,725	8	*1,766*	**10,047**
Aug	156	7,406	413	20	*7,995*	1	4	26	1,265	14	*1,310*	**9,305**
Sep	150	7,025	450	24	*7,649*	0	9	41	1,404	15	*1,469*	**9,118**
Oct	142	6,680	409	14	*7,245*	0	7	44	1,439	20	*1,510*	**8,755**
Nov	152	5,009	395	26	*5,582*	0	10	43	1,341	12	*1,406*	**6,988**
Dec	136	5,154	374	13	*5,677*	0	4	36	1,039	23	*1,102*	**6,779**
2012 Total	**1,816**	**74,976**	**4,891**	**236**	***81,919***	**8**	**93**	**421**	**16,111**	**211**	***16,844***	**98,763**
2011 Total	**1,722**	**75,278**	**4,739**	**220**	***81,959***	**6**	**134**	**457**	**16,480**	**263**	***17,340***	**99,299**

* includes commercial flights by executive aircraft



2.2. Movement Classifications

Commercial	Operating for hire or reward
Non-Commercial	Not operating for hire or reward
Cargo	Aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories.
General Aviation	Private Aircraft, Helicopters and Business Jets not operating for hire or reward
Passenger	Commercial passenger flights, including executive aircraft
Other Positioning	Positioning flights to/from other Airports
STN Positioning	Positioning flights to/from London-Stansted Airport
Military	Flights on Military business
Official	Flights solely for official purposes by British or foreign civil government departments.
Other	Other non-commercial movements e.g. a departing aircraft that has made an unscheduled return to base.
Test & Training	Training flights involving aircraft and also flights following or during aircraft maintenance

2.3. Aircraft Movements by Weight

Historically, aircraft operating at LLA have been classified in two groups, below or above 16 tonnes. Those below this weight were typically general aviation and executive aircraft although in recent years many general and executive aircraft can weigh in excess of 16 tonnes.

Aircraft Classifications (16 tonnes)

		2011	2012
Aircraft Over 16 Tonnes	Passenger	71,132	70,841
	Cargo	1,719	1,815
	Other	15,221	15,399
Aircraft Under 16 Tonnes	Passenger	4,143	4,135
	Cargo	3	1
	Other	7,081	6,572
TOTAL		**99,299**	**98,763**

2.4. Air Traffic Movements by Propulsion Type

Key – Jet, Propeller, Helicopter, Turbo-prop

AIRBUS A300-600 FREIGHTER	815	CANADAIR CHALLENGER 604	1,839
AIRBUS A300-600 PASSENGER	36	CANADAIR CHALLENGER 605	289
AIRBUS A300-B4/C4/F4 FREIGHTER	260	CANADAIR CHALLENGER 800 SRS (CRJ1/2)	117
AIRBUS A310-300	22	CANADAIR GLOBAL 5000	496
AIRBUS A318	76	CANADAIR GLOBAL EXPRESS	1,851
AIRBUS A319	27,416	CANADAIR GLOBAL EXPRESS (ALT)	6
AIRBUS A319 CJ (EXEC)	132	CANADAIR REGIONAL JET 100	10
AIRBUS A320	24,570	CANADAIR REGIONAL JET 200 /440	52
AIRBUS A321	2,207	CANADAIR REGIONAL JET 900	110
AIRBUS A330-200	8	CESSNA 500/501 CITATION I	4
AVRO RJ70	6	CESSNA 510 CITATION MUSTANG	666
AVRO RJ85	12	CESSNA 525 CITATIONJET	599
BAE 146-200 PASSENGER	76	CESSNA 525A CITATIONJET 2	909
BEECHCRAFT/RAYTHEON/HAWKER 400/450/XP	222	CESSNA 525B CITATIONJET 3	112
BOEING 717	2	CESSNA 525C CITATIONJET 4	17
BOEING 727-100 PASSENGER	4	CESSNA 550/551/552 CITATION 2/SP/BRAVO	788
BOEING 737-200 PASSENGER	80	CESSNA 560 CITATION 5/ULTRA	28
BOEING 737-300 FREIGHTER	100	CESSNA 560E CITATION ENCORE	10
BOEING 737-300 PASSENGER	60	CESSNA 560XL CITATION EXCEL/XLS	2,325
BOEING 737-300 WINGLETS	6	CESSNA 650 CITATION III/VI/VII	30
BOEING 737-400 FREIGHTER	88	CESSNA 680 CITATION SOVEREIGN	308
BOEING 737-400 PASSENGER	1,070	CESSNA 750 CITATION X	302
BOEING 737-500	6	CESSNA CITATION FAMILY	2
BOEING 737-700	135	DASSAULT FALCON (2 ENGINE) FAMILY	4
BOEING 737-700 WINGLETS	131	DASSAULT FALCON 10/100	14
BOEING 737-800	69	DASSAULT FALCON 20/200	22
BOEING 737-800 WINGLETS	10,896	DASSAULT FALCON 2000	965
BOEING 757-200 FREIGHTER	138	DASSAULT FALCON 2000 DX/EX	207
BOEING 757-200 PASSENGER	389	DASSAULT FALCON 2000 LX	392
BOEING 757-200 WINGLETS	646	DASSAULT FALCON 50	40
BOEING 757-300	6	DASSAULT FALCON 50EX	99
BOEING 767-200 PASSENGER	8	DASSAULT FALCON 7X	764
BOEING 767-200ER	98	DASSAULT FALCON 900	909
BOEING 767-300 PASSENGER	34	DASSAULT FALCON 900EX	17
BOEING 767-300 WINGLETS	70	EMBRAER 175	2
BOEING 767-300ER	92	EMBRAER 190	38
BOEING 777-200	18	EMBRAER 195	20
BOEING BBJ (737-700)	22	EMBRAER LEGACY 600	1,086
BOEING BBJ2 (737-800)	33	EMBRAER PHENOM 100	84
CANADAIR CHALLENGER 300	890	EMBRAER PHENOM 300	44
CANADAIR CHALLENGER 600	10	EMBRAER RJ135	47

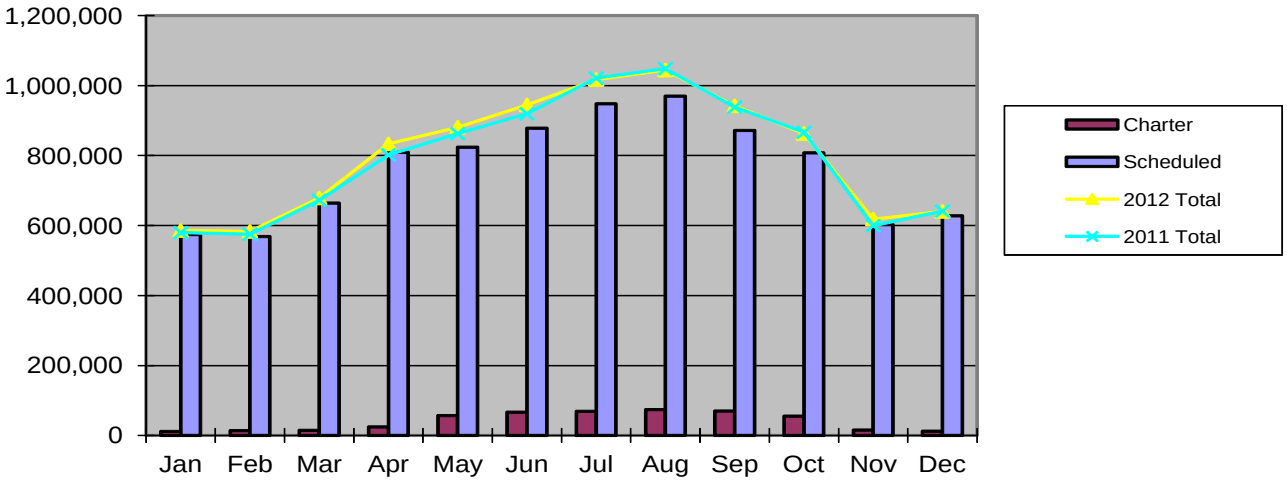
EMBRAER RJ140	2	BOEING-VERTOL 234/H47 CHINOOK	4
EMBRAER RJ145	64	EUROCOPTER EC130	4
FAIRCHILD DORNIER 328 JET	34	EUROCOPTER EC135/635	10
FOKKER 70	26	EUROCOPTER EC155	62
GATES LEARJET 31	8	ROBINSON R44	6
GATES LEARJET 35/36	128	ROBINSON R66	12
GATES LEARJET 40	42	SIKORSKY S-76	180
GATES LEARJET 45	420	**Total**	**598**
GATES LEARJET 55	14	AEROSPATIALE/ALENIA ATR42-200/300	572
GATES LEARJET 60	365	AEROSPATIALE/ALENIA ATR72	14
GULFSTREAM 100 / IAI 1125 ASTRA	12	AEROSPATIALE/ALENIA ATR72 FREIGHTER	2
GULFSTREAM 150	109	ANTONOV AN-12/ AVIC Y-8	4
GULFSTREAM 2	12	ANTONOV AN-26	2
GULFSTREAM 200 / IAI 1126 GALAXY	437	BAE ATP FREIGHTER	582
GULFSTREAM 3	33	BEECHCRAFT 1900D	6
GULFSTREAM 300	72	BEECHCRAFT 200 KING AIR	230
GULFSTREAM 4	1,220	BEECHCRAFT 300/350 KING AIR	40
GULFSTREAM 400	76	BEECHCRAFT A100 KING AIR	2
GULFSTREAM 450	1,033	BEECHCRAFT C90A/B/GT KING AIR	14
GULFSTREAM 5	613	BEECHCRAFT E90 KING AIR	2
GULFSTREAM 550	2,208	BEECHCRAFT TWIN TURBOPROP	10
HAWKER/RAYTHEON 4000 HORIZON	30	CASA/IPTN CN-235	2
HS125 FAMILY	4	CESSNA 441 CONQUEST 2	12
HS125-1000	29	DE HAVILLAND DHC-8 DASH 8-400	848
HS125-700/750	270	DE HAVILLAND DHC-8 DASH 8-400 FREIGHTER	4
HS125-800/850XP	962	EMBRAER EMB-120 BRASILIA	4
HS125-900/900XP	285	FAIRCHILD DORNIER 228	2
IAI 1124 WESTWIND	2	FAIRCHILD DORNIER 328	4
MCD DOUGLAS DC-8-72	2	FOKKER 50/60	8
MCD DOUGLAS MD-83	10	LOCKHEED L-100/182/382 HERCULES	10
MCD DOUGLAS MD-87	6	PARTENAVIA P.68	2
MCD DOUGLAS MD-90	4	PIAGGIO P180	60
RAYTHEON 390 PREMIER 1	271	PILATUS PC-12	82
YAKOVLEV YAK-42 & 142	2	PIPER PA31T TURBO NAVAJO/CHEYENNE I/II	8
Total	**95,509**	PIPER PA42 CHEYENNE 3/4	14
BEECHCRAFT 55/58 BARON	2	SAAB 2000	16
CIRRUS 20/22	2	SOCATA TBM 700/850	2
DIAMOND STAR DA-40/42	20	SW SA.26/226T/227TT/TP MERLIN II/III	2
PILATUS/BN BN-2A/B ISLANDER	22	SW SA-227CC/DC METRO 23	18
PIPER PA31 NAVAJO	26	**Total**	**2,578**
PIPER PA34 SENECA II/III	4		
PIPER PA46 (PISTON)	2		
Total	**78**		
AEROSPATIALE AS350/355 FAMILY	96		
AEROSPATIALE AS365/565	2		
AGUSTA A109	214		
AGUSTA A139	2		
BELL HELICOPTER FAMILY	6	**Grand Total**	**98,763**

2.5. Passenger Statistics

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 9,631,163 passengers were handled at LLA during 2012: 9,146,160 on scheduled flights (95%) and 485,003 on charter flights (5%). This represents a small overall increase in passengers of 1% compared with 2011.

	2011			2012		
	Charter	Scheduled	**Totals**	Charter	Scheduled	**Totals**
Jan	10,764	568,897	**579,661**	11,564	574,080	**585,644**
Feb	13,997	561,331	**575,328**	14,323	568,656	**582,979**
Mar	13,096	659,323	**672,419**	14,424	664,201	**678,625**
Apr	25,756	776,397	**802,153**	24,444	808,910	**833,354**
May	56,665	805,791	**862,456**	57,051	823,889	**880,940**
Jun	66,597	852,698	**919,295**	66,364	878,258	**944,622**
Jul	72,180	949,241	**1,021,421**	69,243	947,910	**1,017,153**
Aug	74,725	973,362	**1,048,087**	74,208	970,026	**1,044,234**
Sep	70,133	868,205	**938,338**	69,970	872,030	**942,000**
Oct	56,212	810,312	**866,524**	55,289	807,685	**862,974**
Nov	16,839	582,847	**599,686**	15,375	602,938	**618,313**
Dec	12,557	628,769	**641,326**	12,748	627,577	**640,325**
Totals	**489,521**	**9,037,173**	**9,526,694**	**485,003**	**9,146,160**	**9,631,163**



2.6. Average passenger load on public transport flights

Average Passengers on Scheduled and Charter Flights			
Year	Charter*	Scheduled	**Total**
2008	167	123	**125**
2009	169	125	**127**
2010	181	132	**134**
2011	181	132	**134**
2012	182	140	**142**

*including chartered executive aircraft

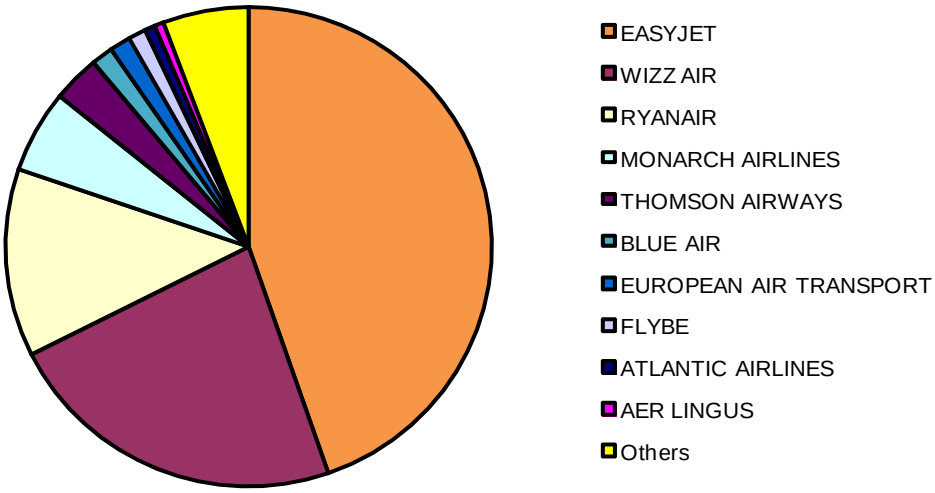
2.7 Passenger Breakdown by Region

	2011				2012			
	Domestic	EU	Non-EU	**Total**	Domestic	EU	Non-EU	**Total**
Jan	70,231	342,424	167,006	**579,661**	69,698	352,997	162,949	**585,644**
Feb	77,582	341,355	156,391	**575,328**	78,281	354,378	150,320	**582,979**
Mar	88,312	404,740	179,367	**672,419**	86,070	417,900	174,655	**678,625**
Apr	90,048	511,868	200,237	**802,153**	89,897	544,104	199,353	**833,354**
May	88,249	582,231	191,976	**862,456**	91,101	599,834	190,005	**880,940**
Jun	94,106	615,938	209,251	**919,295**	91,042	644,202	209,378	**944,622**
Jul	94,744	676,661	250,016	**1,021,421**	90,757	698,260	228,136	**1,017,153**
Aug	94,034	700,617	253,436	**1,048,087**	92,901	717,495	233,838	**1,044,234**
Sep	92,212	624,383	221,743	**938,338**	87,527	643,187	211,286	**942,000**
Oct	95,210	565,098	206,216	**866,524**	91,472	579,458	192,044	**862,974**
Nov	86,043	378,013	135,630	**599,686**	80,801	394,295	143,217	**618,313**
Dec	81,743	395,763	163,820	**641,326**	78,001	404,702	157,622	**640,325**
Totals	**1,052,514**	**6,139,091**	**2,335,089**	**9,526,694**	**1,027,548**	**6,350,812**	**2,252,803**	**9,631,163**

2.8. Movements by ten largest operators

Operator	**Movements**	**%**
EASYJET	32,520	45%
WIZZ AIR	16,661	23%
RYANAIR	9,217	13%
MONARCH AIRLINES	4,059	6%
THOMSON AIRWAYS	2,288	3%
BLUE AIR	1,054	1%
EUROPEAN AIR TRANSPORT	1,020	1%
FLYBE	852	1%
ATLANTIC AIRLINES	506	1%
AER LINGUS	446	1%
Others	*4,149*	*5%*
Total	**72,772**	**100%**

N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.



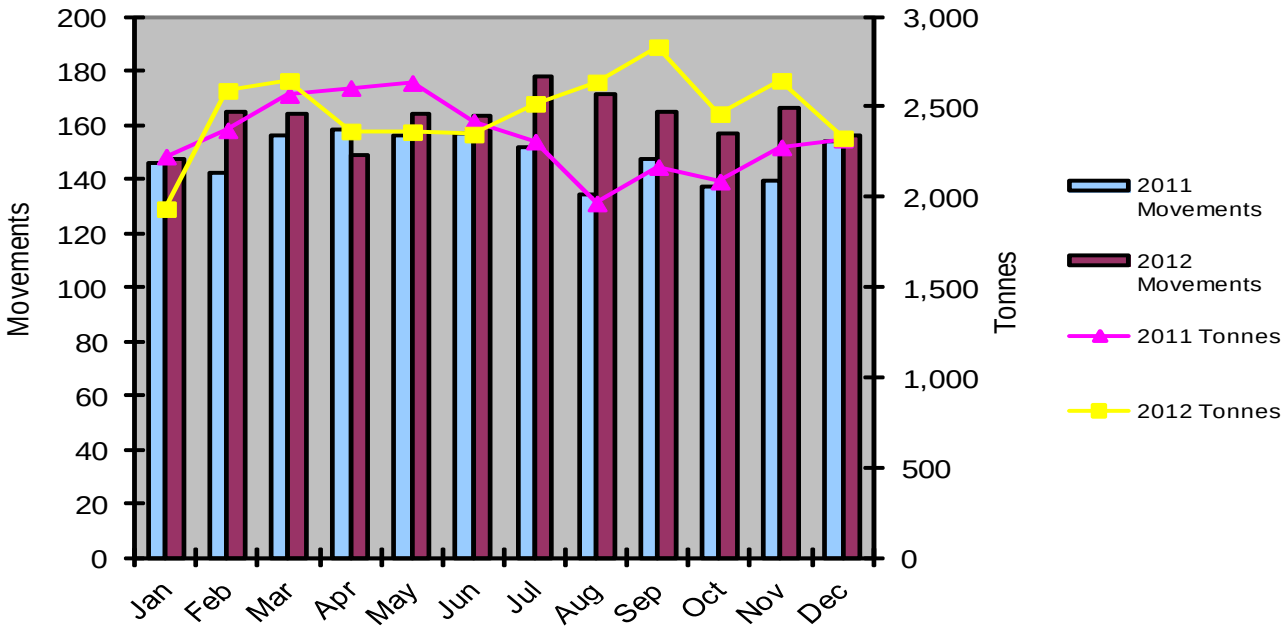
2.9. Movements and average seats by aircraft type

		Movements	Average Seats
EASYJET	AIRBUS A319	26,802	156
	AIRBUS A320	5,718	180
	Total	**32,520**	**161**
WIZZ AIR	AIRBUS A320	16,661	180
	Total	**16,661**	**180**
RYANAIR	BOEING 737-800 WINGLETS	9,217	189
	Total	**9,217**	**189**
MONARCH AIRLINES	AIRBUS A300-600 PASSENGER	4	361
	AIRBUS A320	1,910	174
	AIRBUS A321	2,121	214
	BOEING 757-200 PASSENGER	16	223
	McD DOUGLAS MD-83	8	167
	Total	**4,059**	**197**
THOMSON AIRWAYS	BOEING 737-300 PASSENGER	2	149
	BOEING 737-800	36	189
	BOEING 737-800 WINGLETS	1,467	189
	BOEING 757-200 PASSENGER	229	234
	BOEING 757-200 WINGLETS	554	234
	Total	**2,288**	**206**
BLUE AIR	BOEING 737-300 PASSENGER	6	136
	BOEING 737-400 PASSENGER	1,046	164
	BOEING 737-500	2	126
	Total	**1,054**	**164**
EURO AIR TRANSPORT	AIRBUS A300-600 FREIGHTER	655	N/A
	AIRBUS A300-B4/C4/F4 FREIGHTER	192	N/A
	BOEING 737-300 FREIGHTER	84	N/A
	BOEING 757-200 FREIGHTER	89	N/A
	Total	**1,020**	**N/A**
FLYBE	DE HAVILLAND DHC-8 DASH 8-400	837	78
	EMBRAER 175	2	88
	EMBRAER 195	13	118
	Total	**852**	**79**
ATLANTIC AIRLINES	BAE ATP FREIGHTER	506	N/A
	Total	**506**	**N/A**
AER LINGUS	AEROSPATIALE ATR42-200/300	438	49
	AEROSPATIALE ATR72	4	70
	AIRBUS A320	4	174
	Total	**446**	**54**
Others	**Total**	**4,149**	**99**
Total		***72,772***	***173***

2.10. Total Cargo Movements & Tonnage

	2011		2012	
	Tonnes	Movements	Tonnes	Movements
Jan	2,225	146	1,934	147
Feb	2,371	142	2,590	165
Mar	2,566	156	2,645	164
Apr	2,605	158	2,365	149
May	2,633	156	2,361	164
Jun	2,419	157	2,348	163
Jul	2,308	152	2,518	178
Aug	1,965	134	2,637	171
Sep	2,167	147	2,832	165
Oct	2,086	137	2,461	157
Nov	2,276	139	2,646	166
Dec	2,319	154	2,327	156
Total	**27,942**	**1,778**	**29,663**	**1,945**

N.B The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because a proportion of cargo tonnage is carried on passenger aircraft. Consequently the movement figures in Table 2.10 will differ from Table 2.1 which shows dedicated cargo movements.



3. Routes

Destination	Code	Country	Charter Operator	Scheduled Operator
Aberdeen	ABZ	UK		easyJet
Alghero	AHO	Sardinia		Ryanair
Alicante	ALC	Spain		easyJet/Monarch
Amsterdam	AMS	Netherlands		easyJet
Antalya	AYT	Turkey	Thomson	
Arrecife	ACE	Spain (Canaries)	Thomson/Monarch	Monarch / Ryanair
Bacau	BCM	Romania		Blue Air
Barcelona	BCN	Spain		easyJet
Belfast Intl	BFS	UK		easyJet
Belgrade	BEG	Serbia		Wizz Air
Berlin	SXF	Germany		easyJet
Beziers	BZR	France		Ryanair
Bodrum	BJV	Turkey	First Choice/Thomson	Monarch
Bordeaux	BOD	France		easyJet
Bourgas	BOJ	Bulgaria	Thomson	Wizz Air
Bratislava	BTS	Slovakia		Ryanair
Brno	BRQ	Czech Rep		Wizz Air
Bucharest	BBU	Romania		Wizz Air / Blue Air
Budapest	BUD	Hungary		Wizz Air/easyJet
Cluj-Napoca	CLJ	Romania		Wizz Air
Corfu	CFU	Greece	Thomson	Monarch / easyJet
Dalaman	DLM	Turkey	First Choice/Thomson	Monarch
Debrecen	DEB	Hungary		Wizz Air
Dortmund	DTM	Germany		easyJet
Dublin	DUB	Ireland		Ryanair
Edinburgh	EDI	UK		easyJet
Enontekio	ENF	Finland	Transun (operated by 3rd party)	
Faro	FAO	Portugal	First Choice/Thomson	easyJet/Monarch
Fuerteventura	FUE	Spain (Canaries)	First Choice/Thomson	Monarch/Ryanair
Funchal	FNC	Portugal (Madeira)	Thomson	
Gdansk	GDN	Poland		Wizz Air
Geneva	GVA	Switzerland		easyJet
Gerona	GRO	Spain		Ryanair
Gibraltar	GIB	Spain		Monarch
Glasgow	GLA	UK		easyJet
Grenoble	GNB	France		easyJet
Hamburg	HAM	Germany		easyJet
Heraklion	HER	Greece	Thomson	easyJet
Ibiza	IBZ	Spain (Balearics)	Thomson/First Choice	easyJet/Monarch
Inverness	INV	UK		easyJet
Isle of Man	IOM	UK		Flybe
Istanbul	SAW	Turkey		easyJet
Jersey	JER	UK		Flybe
Katowice	KTW	Poland		Wizz Air
Kefalonia	KEF	Greece	Thomson	
Kerry	KIR	Ireland		Ryanair
Kiev	IEV	Ukraine		Wizz Air
Kittila	KTT	Finland	Thomson	
Knock	NON	Ireland		Ryanair

Destination	Code	Country	Charter Operator	Scheduled Operator
Larnaca	LCA	Cyprus	First Choice/Thomson	Monarch
Las Palmas	LPA	Spain (Canaries)	First Choice/Thomson/Monarch	Monarch / Ryanair
Lisbon	LIS	Portugal		easyJet
Ljubljana	LJU	Slovenia		Adria Airways / Wizz Air
Lodz	LCJ	Poland		Wizz Air
Lublin	LUZ	Poland		Wizz Air
Madrid	MAD	Spain		easyJet
Mahon	MAH	Spain (Balearics)	First Choice/Thomson/Monarch	easyJet/Monarch
Malaga	AGP	Spain	Thomson	easyJet/Monarch
Malta	MLA	Malta	Thomson	Ryanair
Marrakech	RAK	Morocco		Ryanair
Milan	MXP	Italy		easyJet
Monastir	MIR	Tunisia	First Choice/Thomson	
Montpellier	MPL	France		easyJet
Munich	MUC	Germany		Monarch
Murcia	MJV	Spain		Ryanair
Nice	NCE	France		easyJet
Nimes	FNI	France		Ryanair
Ovda	OVD	Israel	Israir	
Palma	PMI	Spain (Balearics)	First Choice/Thomson/Monarch	easyJet/Monarch
Paphos	PFO	Cyprus	First Choice/Thomson	easyJet
Paris	CDG	France		easyJet
Pisa	PSA	Italy		easyJet
Poznan	POZ	Poland		Wizz Air
Prague	PRG	Czech Rep		Wizz Air
Reykjavik	RKV	Iceland		easyJet
Reus	REU	Spain	Thomson	Ryanair
Rhodes	RHO	Greece	Thomson	
Riga	RIX	Latvia		Wizz Air
Rome	FCO	Italy		Monarch
Rovaniemi	RVN	Finland	Thomson	
Rzeszów	RZZ	Poland		Ryanair
Salzburg	SZG	Austria	Thomson	easyJet
Sharm El Sheikh	SSH	Egypt	Thomson	easyJet
Sofia	SOF	Bulgaria		Wizz Air
Skopje	SKP	Macedonia		Wizz Air
Split	SPU	Croatia		Wizz Air
Tallinn	TLL	Estonia		Ryanair
Tel Aviv	TLV	Israel		El Al / easyJet
Tenerife	TFS	Spain (Canaries)	First Choice/Thomson/Monarch	Monarch / Ryanair
Thessalonika	SKG	Greece	Thomson	
Timisoara	TSR	Romania		Wizz Air
Tirgu Mures	TGM	Romania	Wizz Air	
Trapani	TPS	Italy (Sicily)		Ryanair
Varna	VAR	Bulgaria		Wizz Air
Vilnius	VNO	Lithuania	Wizz Air / Ryanair	
Warsaw	WAW	Poland		Wizz Air
Waterford	WAT	Ireland		Aer Arann
Wroclaw	WRO	Poland		Wizz Air

Zakynthos	ZTH	Greece	Thomson/Monarch	
Zurich	ZRH	Switzerland		easyJet

(Destinations available as at 31st December 2012)

New route for 2012

For more information visit:- www.london-luton.com

3.1 New Routes

NEW ROUTES 2012			
Destination	**Country**	**Launch**	**Airline**
Lublin	Poland	18-Dec-12	Wizz Air
Vilnius	Lithuania	07-Nov-12	Ryanair
Ljubljana	Slovenia	30-Oct-12	Wizz Air
Munich	Germany	21-Sep-12	Monarch Scheduled
Debrecen	Hungary	18-Jun-12	Wizz Air
Heraklion	Greece	21-Apr-12	easyJet
Corfu	Greece	31-Mar-12	easyJet
Reykjavik	Iceland	27-Mar-12	easyJet
Alghero	Sardinia	26-Mar-12	Ryanair
Rome*	Italy	25-Mar-12	Monarch Scheduled
Ljubljana*	Slovenia	25-Mar-12	Adria Airways

**Routes started and ended in 2012*

2012	
easyJet	3
Wizz Air	3
Monarch Scheduled	2
Adria Airways	1
Ryanair	2
TOTAL	**11**
NETT 2012	**9**

Excludes 2 new ad hoc seasonal charter routes: Kittila (Thomson) / Enontekio (Transun)

ALL ROUTES ENDING 2012			
Destination	**Country**	**Ended**	**Airline**
Dubrovnik	Croatia	16-Jun-12	Wizz Air
Kaunas	Lithuania	06-Nov-12	Ryanair

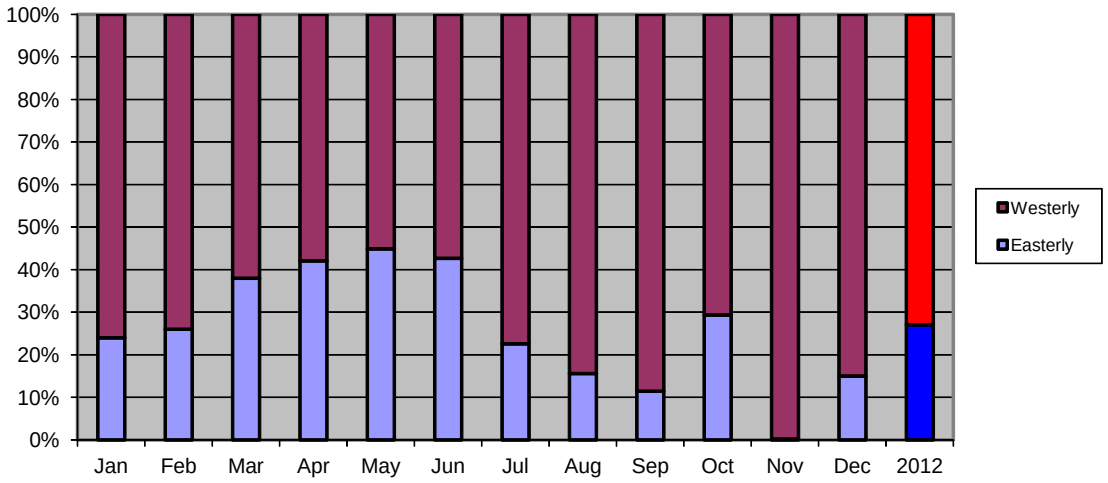
AIRLINE	**ROUTES ENDED**
Wizz Air	1
Ryanair	1
TOTAL	**2**

4. Runway Usage

The runway usage split (dictated primarily by wind direction) during 2012 was 27% easterly and 73% westerly (compared to 28% / 72% in 2011). A monthly breakdown is shown below, highlighting higher than average levels of westerly operations during the periods July to September and November to December 2012. A breakdown of runway usage over the last five years is also shown, giving a historical split of 30% easterly and 70% westerly.

Year	Easterly	Westerly
2012	27%	73%
2011	28%	72%
2010	36%	64%
2009	28%	72%
2008	29%	71%
Average	**30%**	**70%**

Month	Easterly	Westerly
Jan	24%	76%
Feb	26%	74%
Mar	38%	62%
Apr	35%	48%
May	53%	65%
Jun	35%	47%
Jul	19%	65%
Aug	15%	81%
Sep	11%	85%
Oct	37%	89%
Nov	14%	6386%
Dec	15%	85%
2012	**27%**	**73%**



4.1. Runway split of aircraft movements during 92-day summer period

In the UK it is standard practice to average noise levels over a 16 hour daytime period (07:00–23:00, local time) and a 92-day summer season (16th June – 15th September). As part of the Night Noise Policy, LLA also produces an 8 hour night-time contour on a quarterly basis.

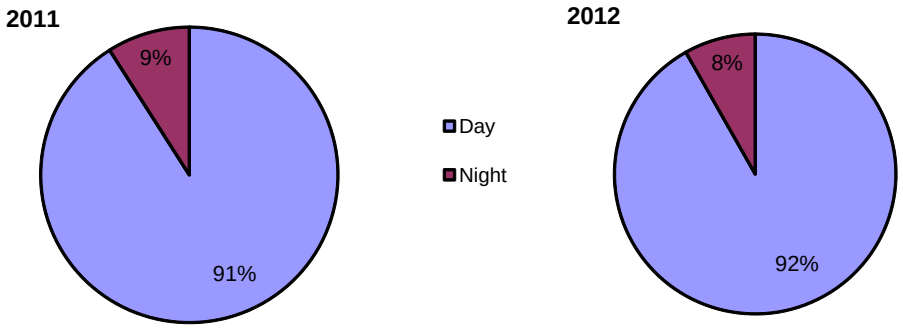
	Day (0700-2300 local)		Night (2300-0700 local)	
Year	Westerly	Easterly	Westerly	Easterly
2012	86%	14%	86%	14%
2011	80%	20%	81%	19%
2010	78%	22%	76%	24%
2009	81%	19%	80%	20%
2008	86%	14%	85%	15%
Average	**82%**	**18%**	**82%**	**18%**

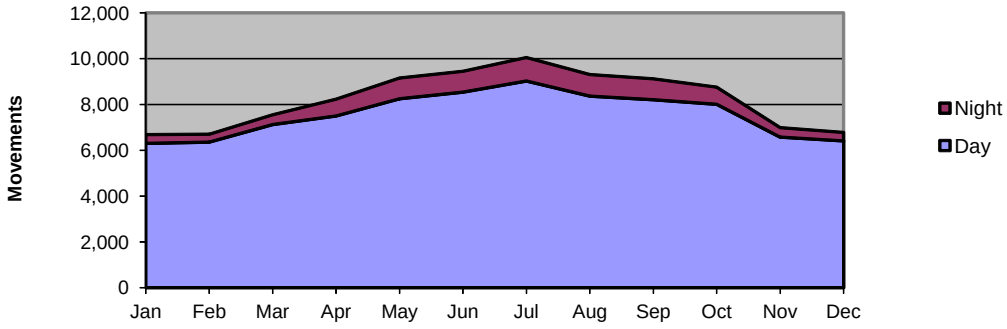
4.2. Day / Night Ratio of Movements

There were 8,095 night movements during 2012 (compared to 8,539 for 2011, a decrease of 5%), an average 22 movements per night (compared to 23 last year). Arriving aircraft accounted for 71% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft landing back at the Airport for the night, between 23:00 hrs and midnight. The average ratio of total aircraft movements during 2012 was 92% day / 8% night (compared to 91% day / 9% night in 2011).

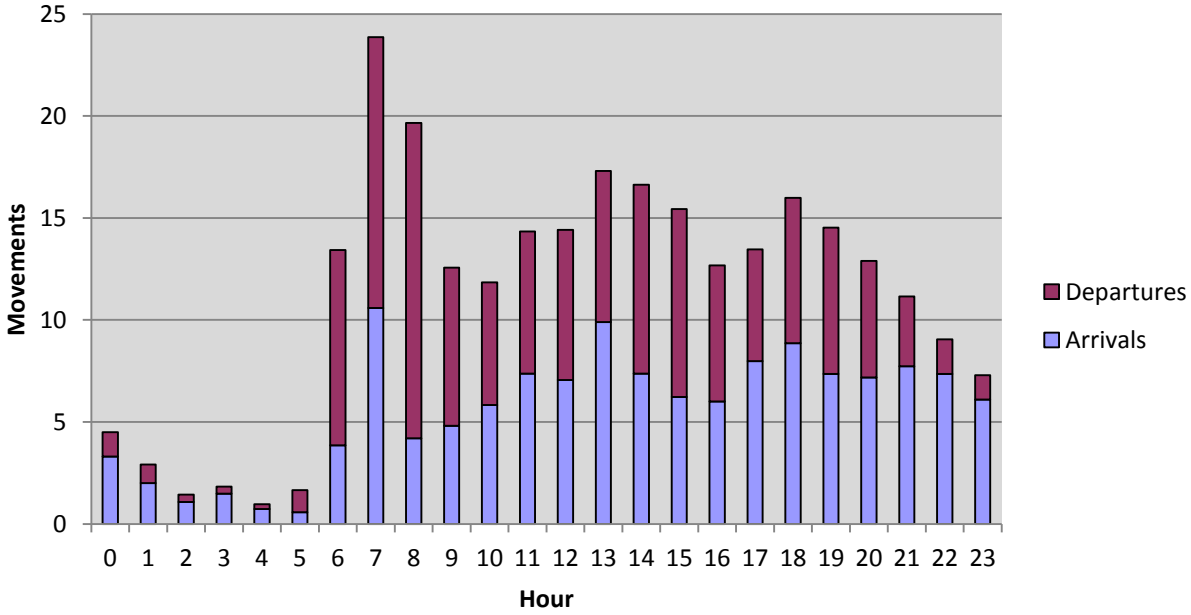
The number of night movements quoted here within Section 4.2 will differ from those within Section 6 as the 8 hour Leq contour calculation period extends between 23:00 - 07:00, 7 days a week. The figures quoted here cover the night period, as defined in the Night Noise Policy for noise violation purposes, 23:00 until 06:00, Mon-Sat and until 07:00 on Sundays.

	Arrivals		Departures		Totals		
	Day	Night	Day	Night	Day	Night	Total
Jan	3,115	245	3,188	139	**6,303**	**384**	**6,687**
Feb	3,132	223	3,277	120	**6,359**	**343**	**6,702**
Mar	3,481	282	3,644	143	**7,125**	**425**	**7,550**
Apr	3,592	527	3,907	205	**7,499**	**732**	**8,231**
May	3,917	665	4,334	238	**8,251**	**903**	**9,154**
Jun	4,045	678	4,495	229	**8,540**	**907**	**9,447**
Jul	4,269	754	4,756	268	**9,025**	**1,022**	**10,047**
Aug	3,951	692	4,414	248	**8,365**	**940**	**9,305**
Sep	3,894	680	4,314	230	**8,208**	**910**	**9,118**
Oct	3,842	533	4,166	214	**8,008**	**747**	**8,755**
Nov	3,231	261	3,344	152	**6,575**	**413**	**6,988**
Dec	3,147	233	3,263	136	**6,410**	**369**	**6,779**
Total	**43,616**	**5,773**	**47,052**	**2,322**	**90,668**	**8,095**	**98,763**

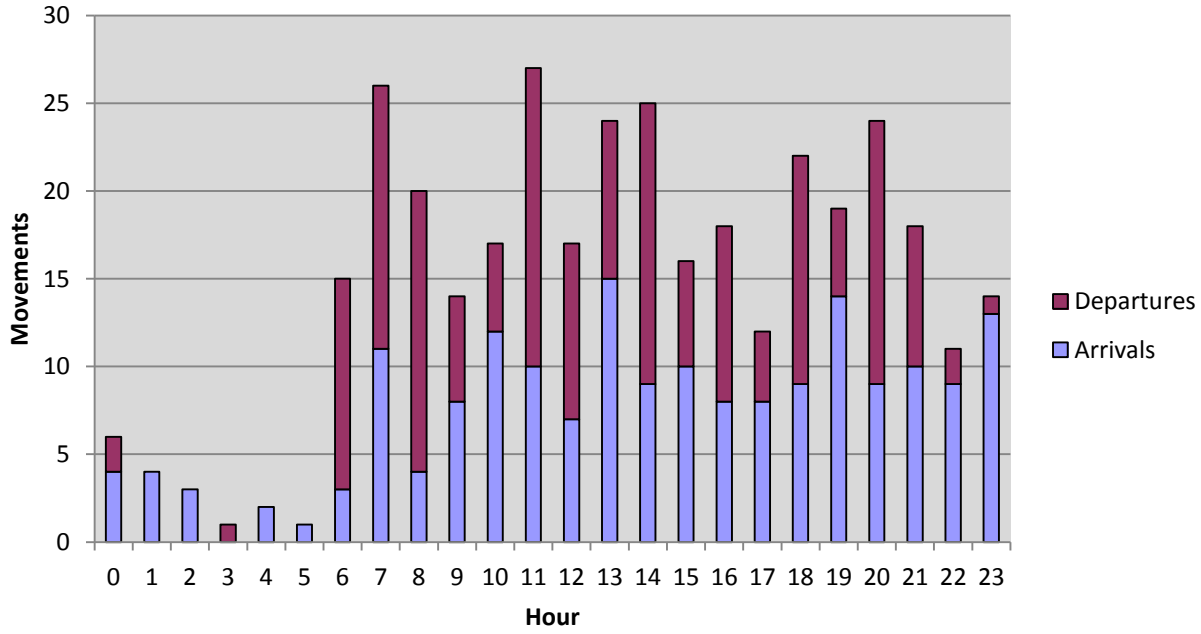




4.3. Annual Average Hourly Movements



4.4. Average Hourly Movements 7th Busiest Day of 2012 (8th July)



Generally the busiest times of the day for annual average hourly movements during 2012 were 07:00-09:00 hrs, with smaller peaks 13:00-15:00 hrs and 18:00-19:00 hrs. However, on the 8th of July 2012 the peaks were 07:00–09:00 hrs, 11:00–12:00 hrs, 13:00-15:00 hrs and 20:00 –21:00 hrs.

The average busiest time for departing aircraft was 07:00-09:00 hrs annually and 11:00-12:00 hrs on 8th July 2012. The average busiest time for arrivals was 07:00-08:00 and 13:00-14:00 hrs annually, whilst the 7th busiest day saw peaks of arriving traffic at various times throughout the day. The above graphs indicate a low level of average movements during the hours of midnight–06:00 hrs, both annually and on the 7th busiest day of the year.

4.5. Departure Route Analysis

The following table reports the total number of departures on each flight route, differentiating between easterly (08) and westerly (26) operations. Night movements quoted below departed between 23:00 - 06:00, Mon-Sat and until 07:00 on Sunday.

		Clacton*		Compton		Olney		Other**		Heli	Total
		08	26	08	26	08	26	08	26		
Jan	Day	346	1,157	278	810	117	420	11	28	21	3,188
	Night	19	48	15	43	7	4	0	3	0	139
	Total	365	1,205	293	853	124	424	11	31	*21*	3,327
Feb	Day	402	1,105	296	827	151	385	10	28	23	3,227
	Night	17	46	13	29	5	7	1	1	1	120
	Total	419	1,151	309	856	156	392	11	29	*24*	3,347
Mar	Day	635	1,039	502	824	219	369	21	21	14	3,644
	Night	30	33	25	30	13	10	2	0	0	143
	Total	665	1,072	527	854	232	379	23	21	*14*	3,787
Apr	Day	607	1,135	518	975	201	391	19	35	26	3,907
	Night	35	56	33	62	6	10	0	2	1	205
	Total	642	1,191	551	1,037	207	401	19	37	*27*	4,112
May	Day	1,001	936	915	800	313	296	19	27	27	4,334
	Night	48	53	63	42	19	9	0	1	3	238
	Total	1,049	989	978	842	332	305	19	28	*30*	4,572
Jun	Day	702	1,273	634	1,176	214	409	23	38	26	4,495
	Night	42	78	28	54	5	17	0	1	4	229
	Total	744	1,351	662	1,230	219	426	23	39	*30*	4,724
Jul	Day	391	1,675	390	1,607	114	513	12	25	29	4,756
	Night	15	116	21	97	1	17	0	1	0	268
	Total	406	1,791	411	1,704	115	530	12	26	*29*	5,024
Aug	Day	303	1,600	287	1,566	74	533	7	29	15	4,414
	Night	22	95	25	81	1	17	1	6	0	248
	Total	325	1,695	312	1,647	75	550	8	35	*15*	4,662
Sep	Day	221	1,656	199	1,572	62	519	4	54	27	4,314
	Night	11	93	15	91	3	12	0	5	0	230
	Total	232	1,749	214	1,663	65	531	4	59	*27*	4,544
Oct	Day	660	1,196	567	1,040	236	392	14	35	26	4,166
	Night	37	50	31	68	14	13	0	1	0	214
	Total	697	1,246	598	1,108	250	405	14	36	*26*	4,380
Nov	Day	261	1,416	138	883	89	475	5	41	36	3,344
	Night	6	59	8	52	3	18	1	4	1	152
	Total	267	1,475	146	935	92	493	6	45	*37*	3,496
Dec	Day	262	1,357	148	878	97	466	5	29	21	3,263
	Night	15	48	11	47	1	12	0	2	0	136
	Total	277	1,405	159	925	98	478	5	*38*	*21*	3,399
Day Total		*5,791*	*15,545*	*4,872*	*12,958*	*1,887*	*5,168*	*150*	*390*	*291*	*47,052*
Night Total		*297*	*775*	*288*	*696*	*78*	*146*	*5*	*27*	*10*	*2,322*
Grand Total		6,088	16,320	5,160	13,654	1,965	5,314	155	417	301	49,374

** Clacton/Dover/Detling departures have been merged as the immediate flight routes follow the same path.*

*** This category relates to those aircraft that are not required to follow Noise Preferential Routes, such as Test/Training flights.*

4.6. Arrivals Route Analysis

The following table reports the total number of arrivals, differentiating between easterly (08) and westerly (26) operations. Night movements quoted below arrived between 23:00 - 06:00, Mon-Sat and until 07:00 on Sunday. This report also includes percentage figures for flights that have achieved a Continuous Descent Approach (CDA), helping reduce both noise and fuel consumption, which involves continuous descent with no more than one section of level flight greater than 2.5Nm in length, following descent from 5000ft altitude.

		08	26	Heli	Total	08 (%)	26 (%)	Total (%)
Jan	Day	756	2,338	21	3,115	89	79	**81**
	Night	42	203	0	245	80	77	**77**
	Total	***798***	***2,541***	***21***	***3,360***	***88***	***79***	***81***
Feb	Day	774	2,333	25	3,132	82	81	**81**
	Night	54	169	0	223	76	81	**80**
	Total	***828***	***2,502***	***25***	***3,355***	***82***	***81***	***81***
Mar	Day	1,318	*2,149*	*14*	3,481	88	82	**84**
	Night	112	170	0	282	70	77	**74**
	Total	***1,430***	***2,319***	***14***	***3,763***	***87***	***82***	***84***
Apr	Day	1,313	2,255	24	3,592	87	85	**86**
	Night	166	359	2	527	85	84	**84**
	Total	***1,479***	***2,614***	***26***	***4,119***	***87***	***85***	***85***
May	Day	2,061	1,829	27	3,917	92	83	**88**
	Night	343	319	3	665	86	84	**85**
	Total	***2,404***	***2,148***	***30***	***4,582***	***91***	***83***	***87***
Jun	Day	1,397	2,619	29	4,045	93	85	**88**
	Night	235	441	2	678	86	91	**89**
	Total	***1,632***	***3,060***	***31***	***4,723***	***92***	***86***	***88***
Jul	Day	809	3,432	28	4,269	93	86	**88**
	Night	118	636	0	754	95	86	**88**
	Total	***927***	***4,068***	***28***	***5,023***	***93***	***86***	***88***
Aug	Day	563	3,373	15	3,951	96	90	**91**
	Night	118	574	0	692	92	89	**90**
	Total	***681***	***3,947***	***15***	***4,643***	***95***	***90***	***90***
Sep	Day	443	3,424	27	3,894	88	89	**89**
	Night	81	599	0	680	79	84	**84**
	Total	***524***	***4,023***	***27***	***4,574***	***87***	***89***	***89***
Oct	Day	1,409	2,405	28	3,842	90	86	**88**
	Night	226	307	0	533	82	85	**84**
	Total	***1,635***	***2,712***	***28***	***4,375***	***89***	***86***	***87***
Nov	Day	430	2,765	36	3,231	92	84	**85**
	Night	21	238	2	261	70	80	**79**
	Total	***451***	***3,003***	***38***	***3,492***	***91***	***84***	***85***
Dec	Day	457	2,670	20	3,147	88	85	**86**
	Night	25	208	0	233	63	81	**79**
	Total	***482***	***2,878***	***20***	***3,380***	***87***	***85***	***85***
Day Total		***11,730***	***31,592***	***294***	***43,616***	***90%***	***85%***	***86%***
Night Total		***1,541***	***4,223***	***9***	***5,773***	***84%***	***85%***	***84%***
Grand Total		***13,271***	***35,815***	***303***	***49,389***	***89%***	***85%***	***86%***

4.7. Flight routes and sample flight tracks

Figures 4.9 and 4.10 show indicative flight routes for easterly and westerly operations. Flight routes shown are typical 3km swathes for departing aircraft on Noise Preferential Routings (NPRs) and arrivals which are established on final approach. Departure routes are valid up to an altitude of 3000ft during the daytime and 4000ft at night, after which time Air Traffic Control at the London Terminal Control Centre (LTCC) can give the aircraft a more direct heading.

Figures 4.11 and 4.12 display actual radar flight data taken over a 24 hour period during summer 2012 for both westerly and easterly operations. Arriving traffic is shown in red with departures in green.

Figures 4.13 and 4.14 show the same 24 hour periods as above, displaying the aircraft radar data in altitude bands up to 10,000ft above mean sea level. These radar tracks show a single mode of operation only i.e. easterly or westerly operations and include both arriving and departing aircraft.

Figures 4.15, 4.16 and 4.17 display aircraft track density plots for the summer period 16th June – 15th September 2012. A track density plot is a map which displays the pattern of aircraft flight tracks passing over the region around the Airport during a specified period. The system analyses the number of flights passing over each grid element of an array defined by the user.

The track density plot takes into account all London Luton aircraft and provides a useful indication of the general patterns for flight operations.

Figures 4.15 and 4.16 show arrivals or departures only, with 4.17 showing all LLA movements.

The colour coding from blue to yellow represents the range 3 to over 150 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element during the 92 day summer period was less than 3 flights.

The yellow areas represent locations where operations are more densely concentrated over the given period.

It should be noted that the following sample flight tracks only include operations for LLA and overflights from other Airports have been omitted for clarity.

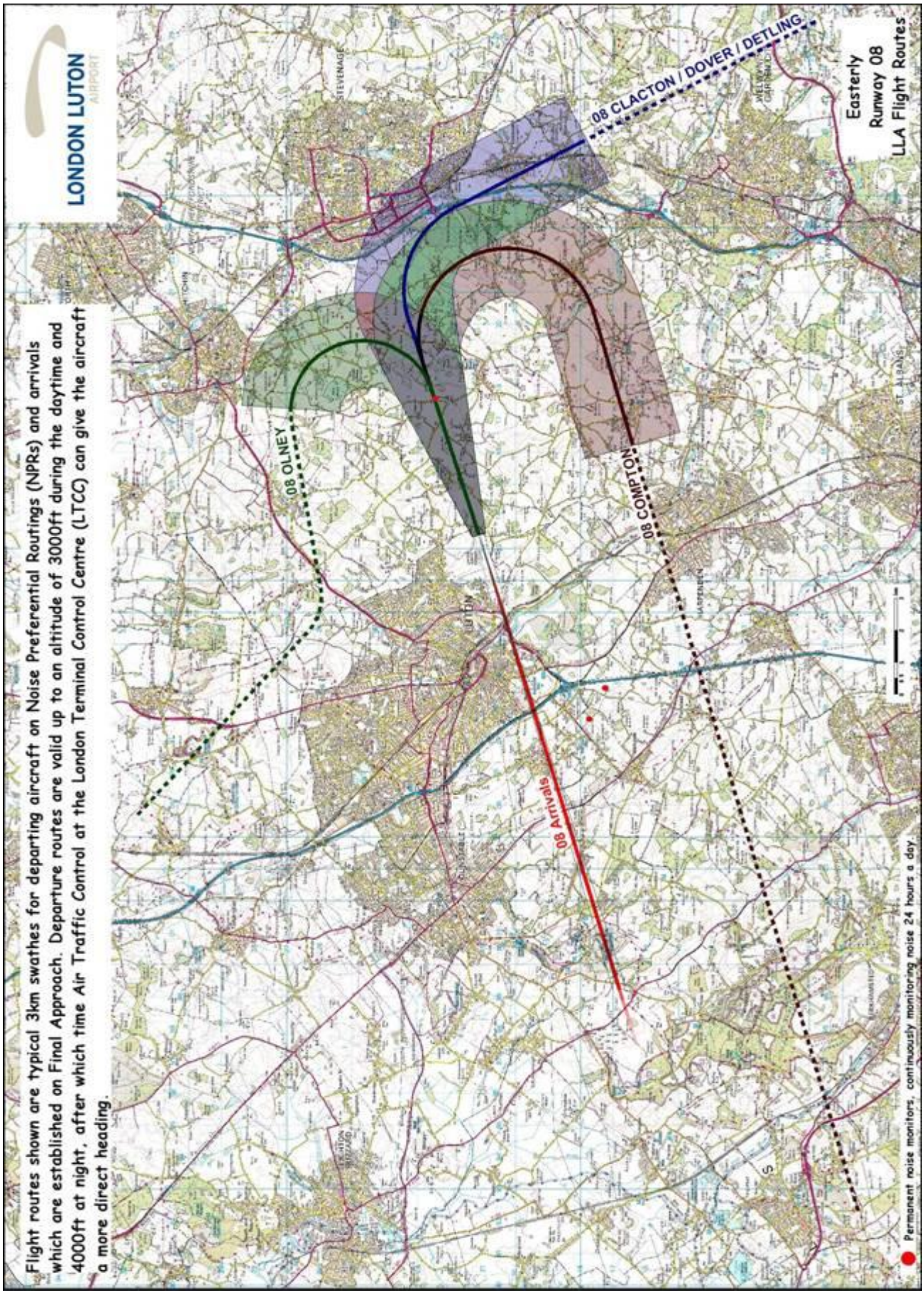
4.8. Brookmans Park Departure Routes

During westerly operations, all aircraft on the Clacton/Dover/Detling departure routes follow the same course until they reach a reporting point known as the Brookmans Park beacon. For over 10 years the Airport has been working with airlines, NATS (our Air Traffic Control provider) and the CAA to look at ways track keeping can be improved on this route, as aircraft routinely pass outside of the NPR corridor and overfly the northern parts of Hemel Hempstead and St. Albans. In 2011, a trial was undertaken with easyJet to determine if reducing the speed of aircraft from 230-250 knots to 220 knots on the second turn to the east and initiating the turn point around 1 nautical mile earlier, enables aircraft to track closer to the nominal route centreline.

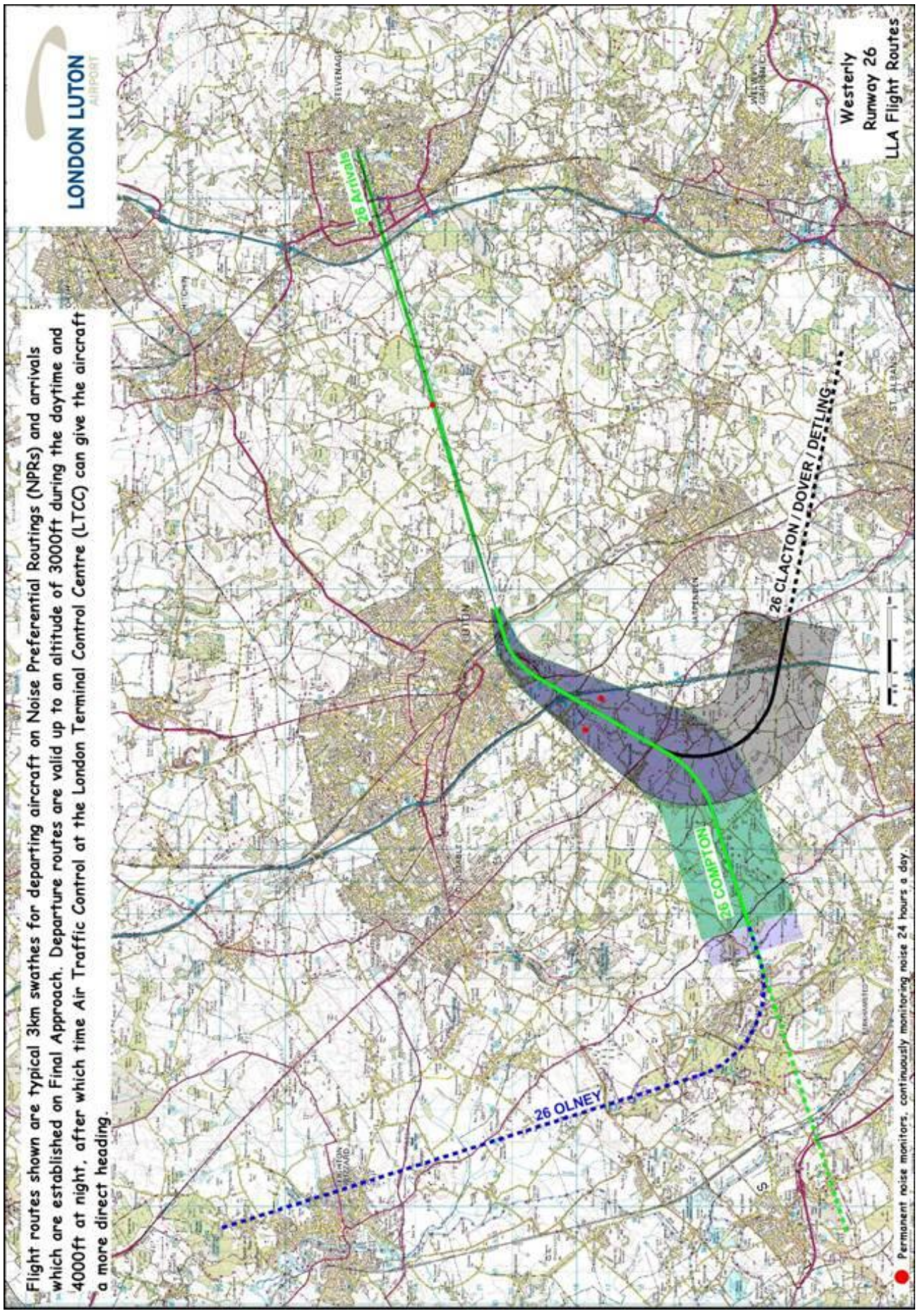
Whilst the trial was successful in terms of aircraft following the nominal track more closely, following extensive community feedback it became apparent that the nominal track centreline was not necessarily in the best place anymore to avoid centres of population, particularly in relation to Redbourn.

Further information on the next steps that have been taken to resolve this issue has been provided in Section 8.1.1, including details of complaints following the easyJet trial, and discussions with the CAA regarding future RNAV1 trials.

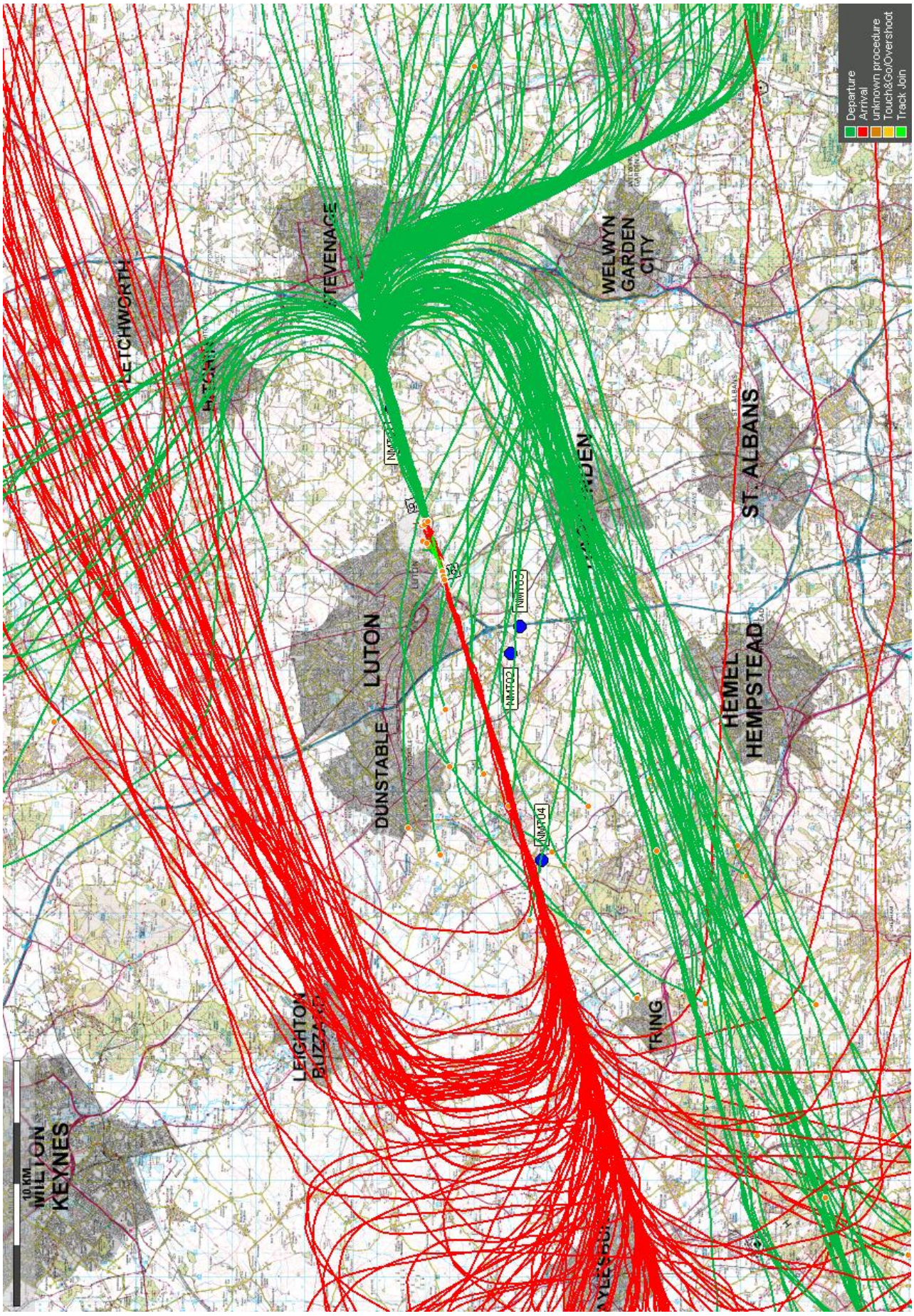
4.9. Plan showing Easterly (08) flight routes



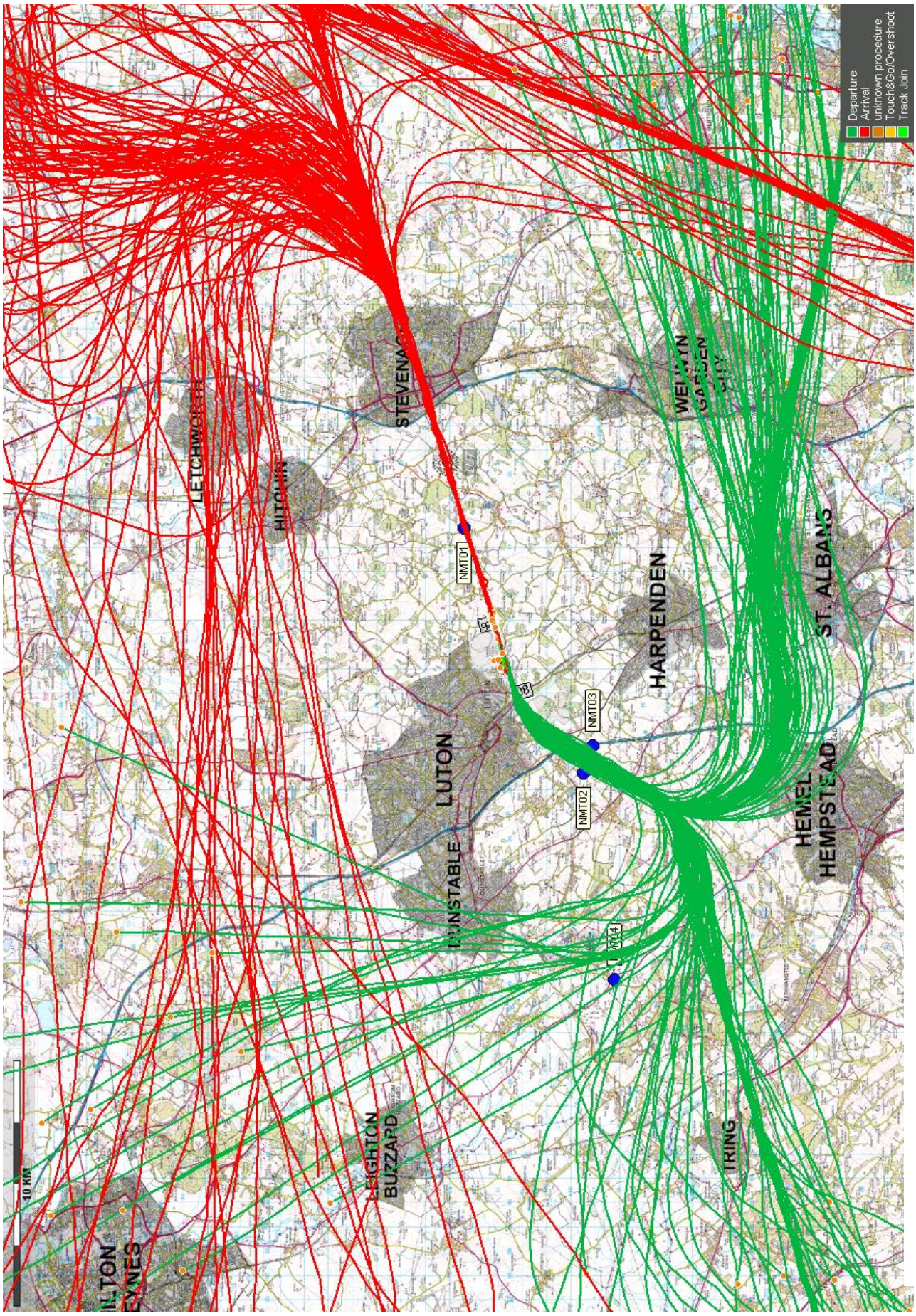
4.10. Plan showing Westerly (26) flight routes



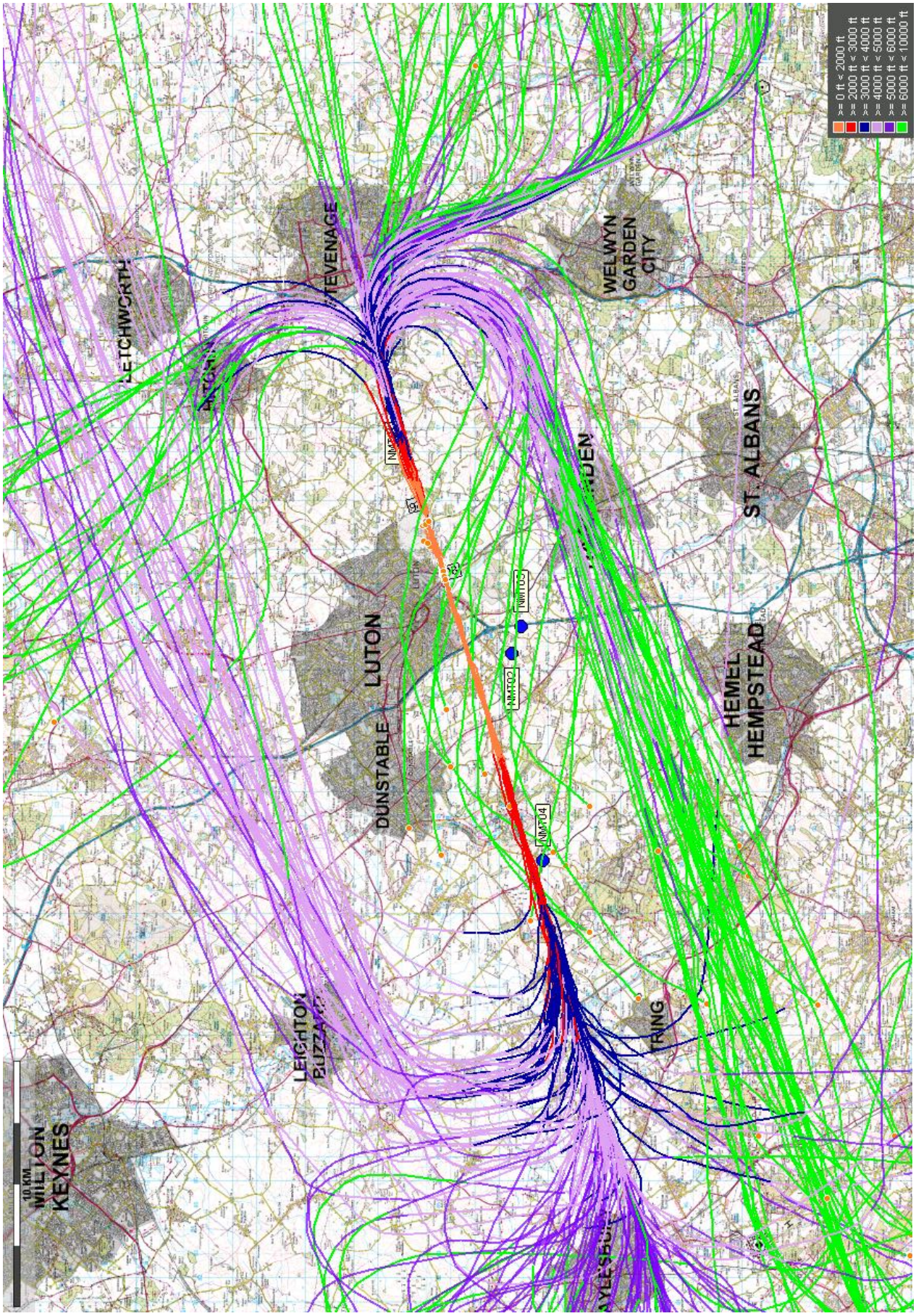
4.11. Arrivals and Departures – Easterly (08) Flight Routes (24 hour period)



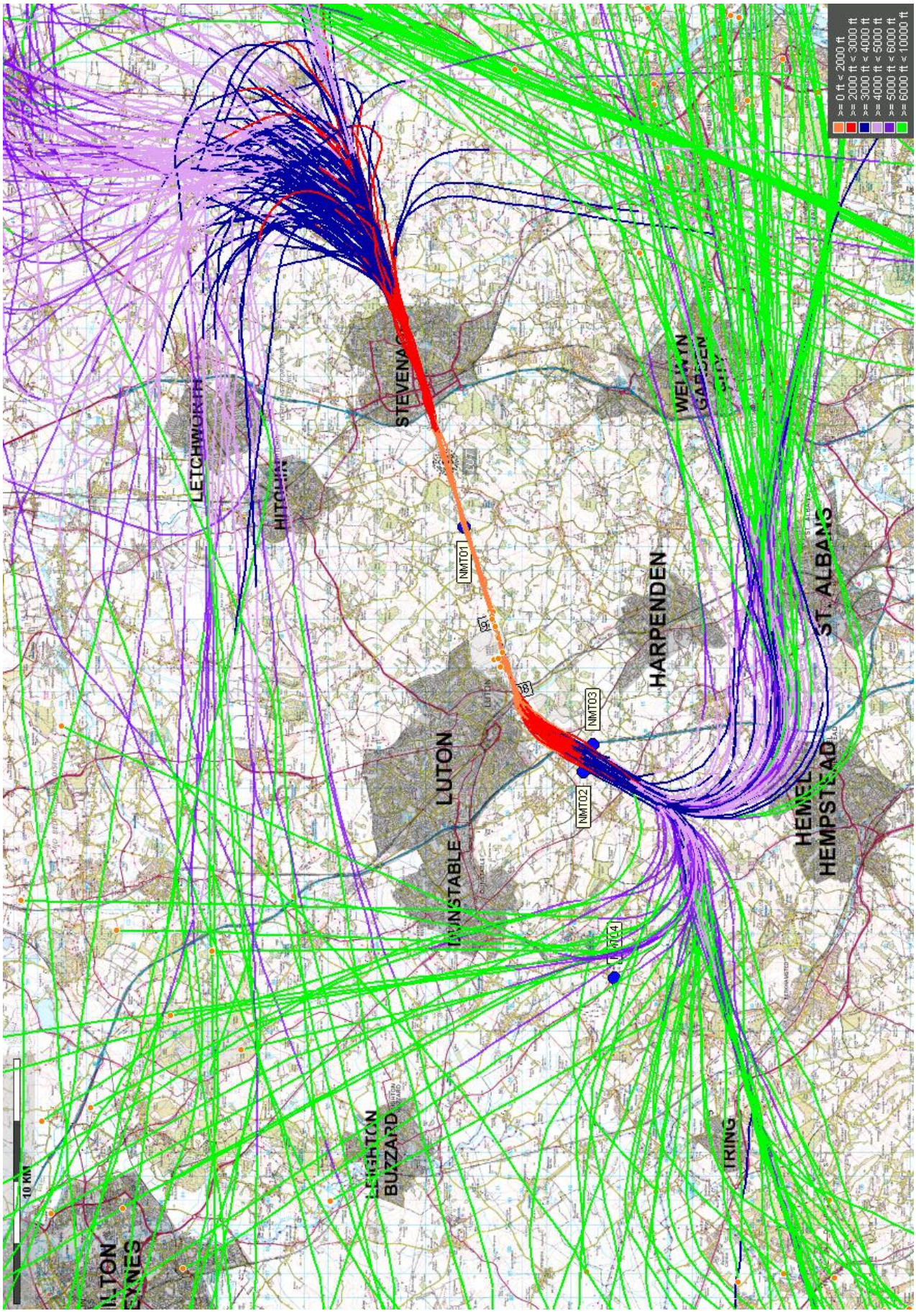
4.12. Arrivals and Departures – Westerly (26) Flight Routes (24 hour period)



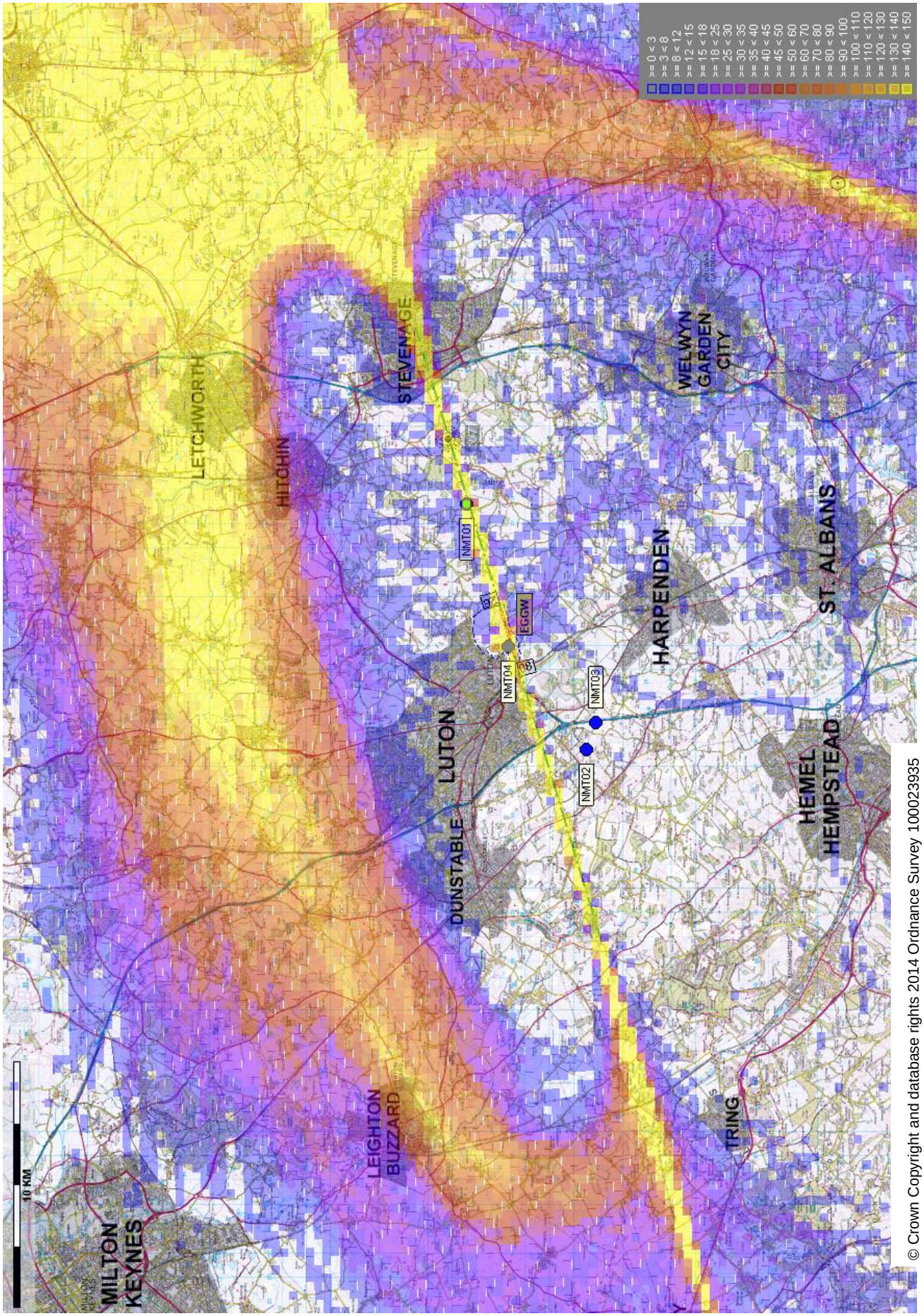
4.13. Flight Levels – Easterly (08) Flight Routes (24 hour period)



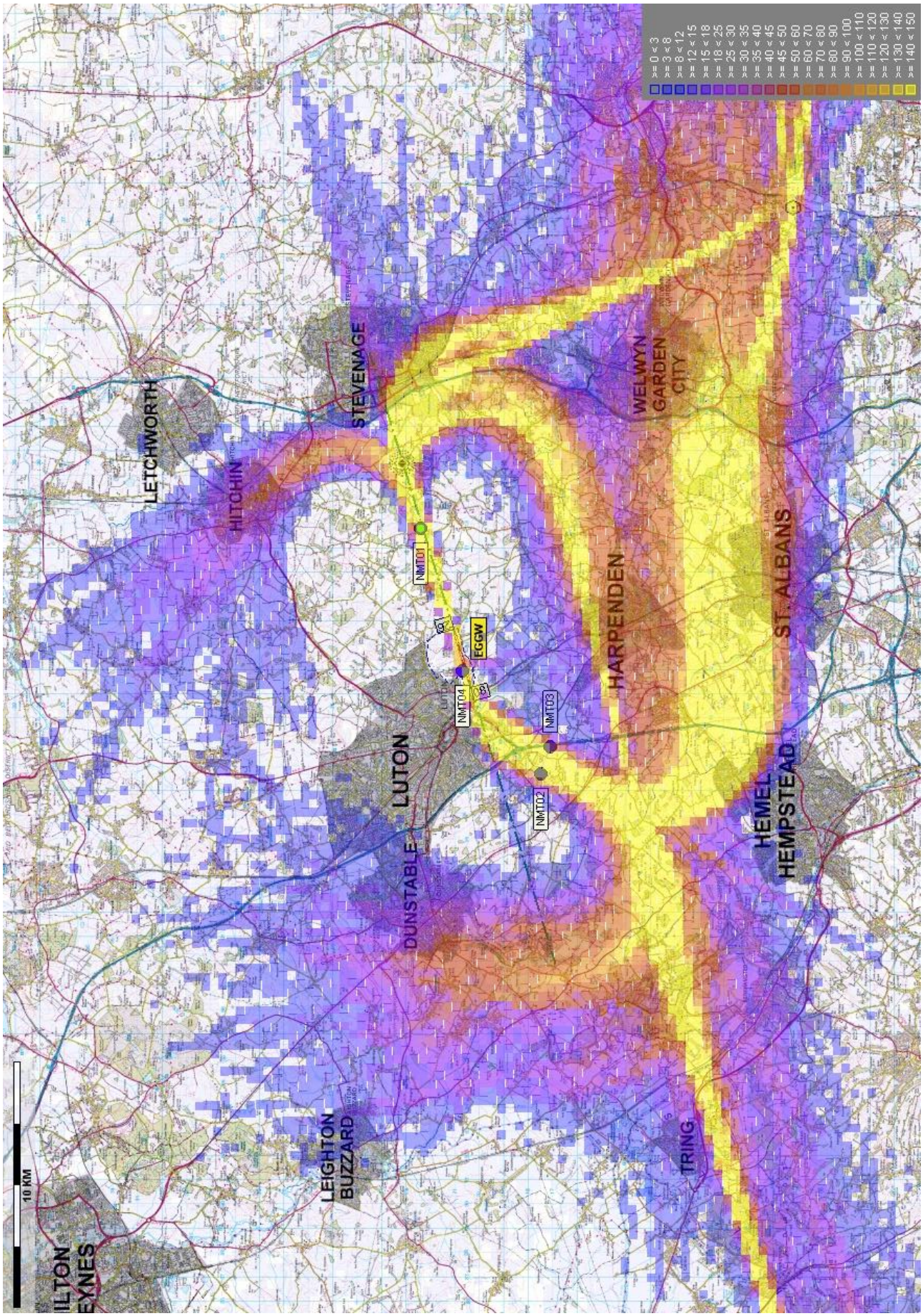
4.14. Flight Levels – Westerly (26) Flight Routes (24 hour period)



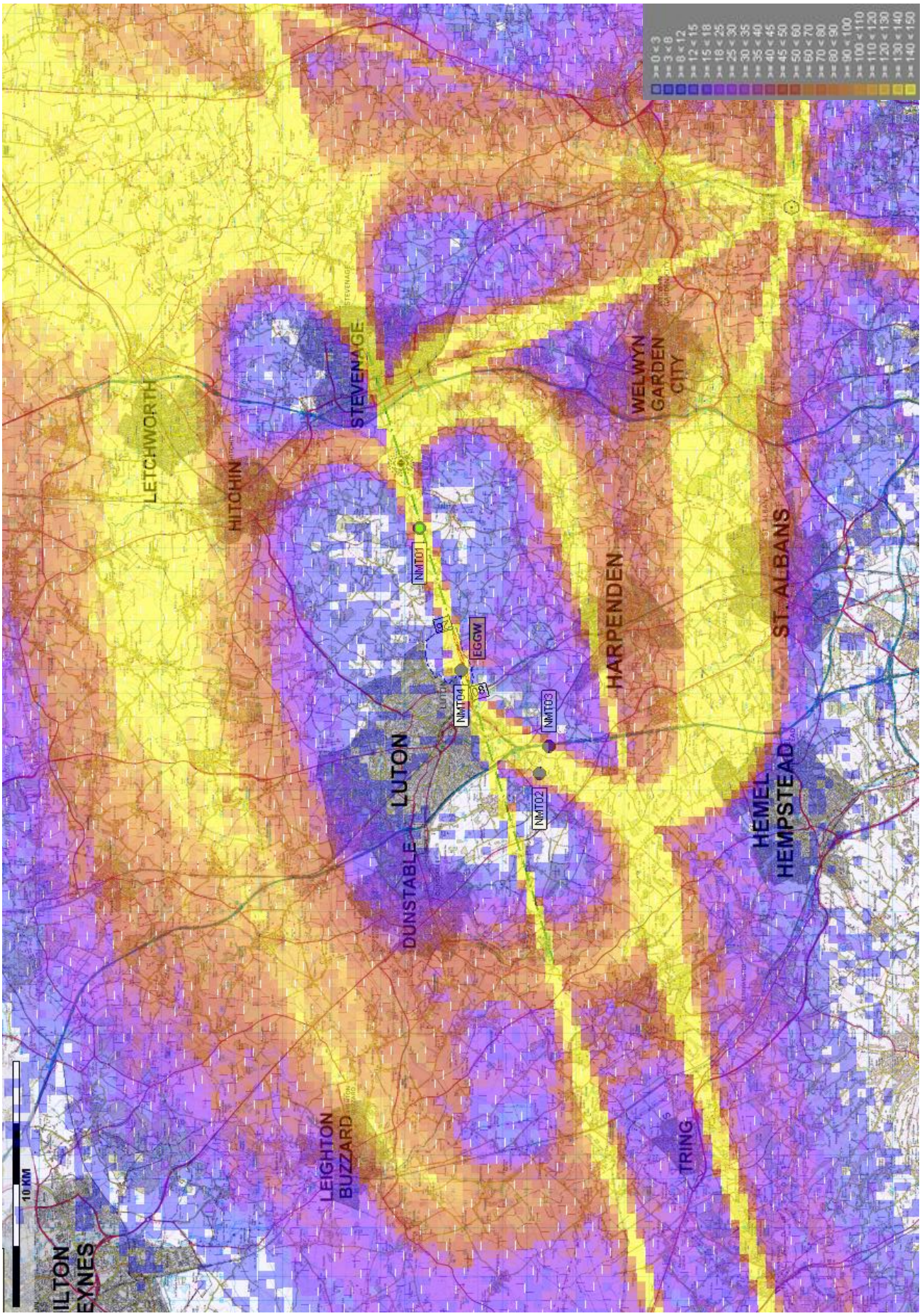
4.15. Plot Density – 16th June – 15th September 2012 - Arrivals only



4.16. Plot Density – 16th June – 15th September 2012 - Departures only



4.17. Plot Density – 16th June – 15th September 2012 - Arrivals and Departures



5. Noise Monitoring Data

The aircraft noise generated by the operation of the Airport has always been an important consideration and is incorporated in the planning framework for the area in which the Airport is located (see Section 10). Regard must be paid to the Borough of Luton Local Plan, so aircraft noise is monitored and reviewed by the LLACC on a quarterly basis.

Furthermore, in response to the Environmental Noise Directive (2002/49/EC), which requires all Member States within the European Union to produce Noise Maps and Action Plans for the main sources of environmental noise, including airports, a Draft Noise Action Plan was prepared by the Airport during 2009. This was produced in partnership with LLACC, the Air Traffic Control provider and airline partners and a 16 week consultation period on this document was launched on 28th September 2009. Following consideration of consultation responses and taking into account these views, a final Draft Noise Action Plan was submitted to the Department for Environment, Food and Rural Affairs (DEFRA), for approval, at the end of January 2010. LLA published the final Noise Action Plan in January 2012, following formal adoption by the Secretary of State for Environment, Food and Rural Affairs. Under Section 7 of this report there is a progress update on the actions outlined within this Noise Action Plan.

5.1. Departure Noise Levels

LLA uses the ICAO standard for noise monitoring at the Airport. This covers all times of the day and night and all seasons, but it is standard practice that only departures are reported. Figures 4.8 and 4.9 show the locations of the monitoring points, which are set at 6,500m from the aircraft start of roll, at either end of the runway. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area, which is separately measured by Leq. The maximum-recorded noise level for each departure is used. All aircraft type departures are recorded not just jets, however helicopters and small light aircraft are not required to follow Noise Preferential Routings (NPRs) so they will not be recorded.

The detection threshold for the noise monitoring terminals is set at the lowest level to record the maximum number of aircraft noise events. However, a number of smaller aircraft types such as business jets and propeller aircraft, typically with a Maximum Take-Off Weight (MTOW) of less than 30,000kg, get very close to but do not reach the detection threshold. Ambient background noise is also an important factor in detecting aircraft noise as strong winds and specific incidents such as loud road traffic, emergency vehicle sirens, lawn mowers, tractors, drills etc. can register noise levels louder than an aircraft overhead, which results in not all aircraft movements being correlated with noise events. Generally the louder noise events have more certainty of being correlated with aircraft movements.

During 2012 no departures exceeded the 94dB(A) daytime noise violation level, whilst there were 3 night noise violations (a combination of two A30B cargo jets and one older generation executive jet aircraft). Continuous monitoring indicates that the vast majority of aircraft operated with individual maximum noise levels well below the current violation levels.

It should be noted that the number of night noise violations decreased again this year, due primarily to stringent measures introduced within the latest version of the voluntary Night Noise Policy (Issue 8), effective 1st April 2010 (see useful links for web page). Following a review, involving LLACC, this new policy lowered the night noise violation level from 85dB(A) to 82dB(A), which is now lower than the designated London airports and any operators exceeding this departure noise level are fined accordingly (between 300% and 600% of a full runway charge). Furthermore this policy now includes a scheduling ban at night for the older and noisiest aircraft classified above QC2. These measures help encourage airlines to operate modern, quieter generation aircraft and forms part of the Airport's commitment to help minimise disturbance for local communities whilst balancing the environmental impact and the economic benefit of a successful airport.

During the daytime 99% of departing aircraft recorded maximum noise levels less than 79dB(A), with 86% registering below 76dB(A) and 39% of correlated daytime departures registering below 73dB(A). Throughout the year 406 correlated daytime departures (1%) registered maximum noise levels above 79dB(A) but there were no daytime noise exceedences.

The night period is taken as 23:00 – 06:00 local time, Monday to Saturday, and until 07:00 on a Sunday. During the night 97% of correlated departures recorded maximum noise levels below 79dB(A), with 84% below 76dB(A) and 50% of correlated night departures registering below 73dB(A). During the year 42 correlated night departures (3%) registered maximum noise levels above 79dB(A) with 3 departures exceeding the night noise violation level of 82dB(A). Details of these noise penalties are listed in section 5.5.

5.2. Noise and Track Monitoring System

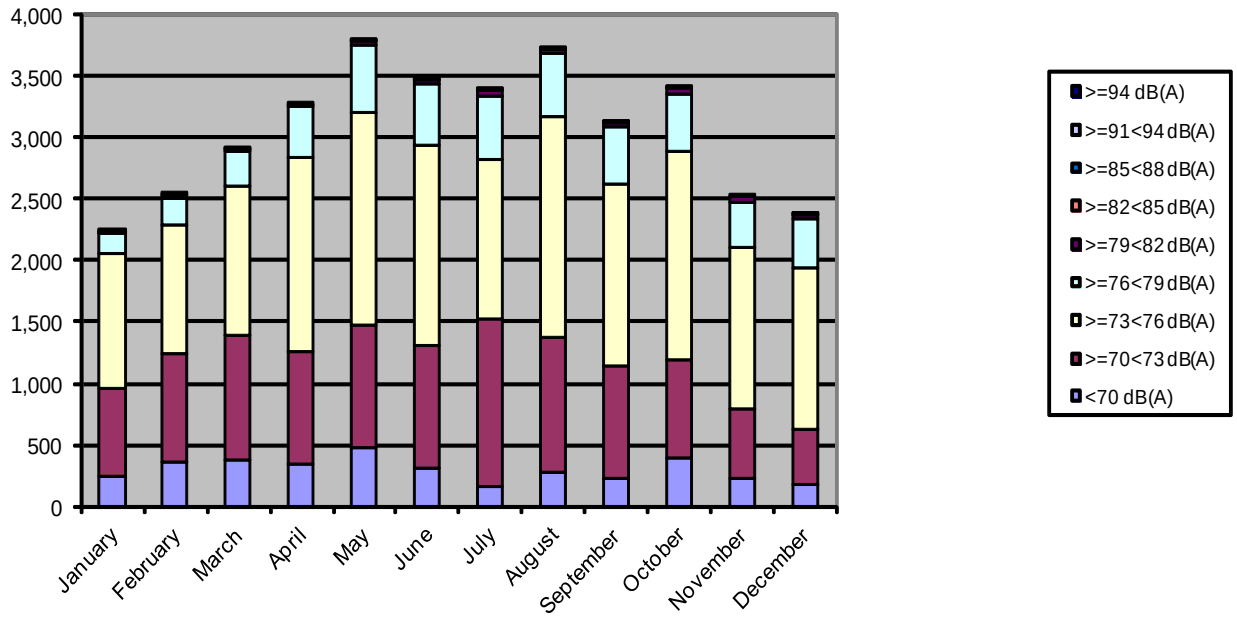
The Topsonic Noise & Track Monitoring system has been operational for 100% of the time during 2012. New features and system enhancements continue to improve the functionality and capabilities available to the Airfield Environment Office and the Topsonic system has been utilised in compiling the details within this report.

In January 2012 the airport launched **TraVis**, a new online flight-tracking tool, which enables the general public to see for themselves the actual flown tracks of LLA aircraft departures and arrivals. This can be viewed online at the following link on the airport website. http://www.london-luton.co.uk/en/flighttracking/ .

5.3. Daytime Noise Levels

The following table identifies maximum daytime noise levels recorded by departing aircraft at the fixed noise monitoring terminals between the hours of 06:00 and 23:00 local time, Monday to Saturday and from 07:00 until 23:00 on Sunday.
(Any aircraft exceeding the Daytime Noise Violation Limit of 94dB(A) is fined accordingly)

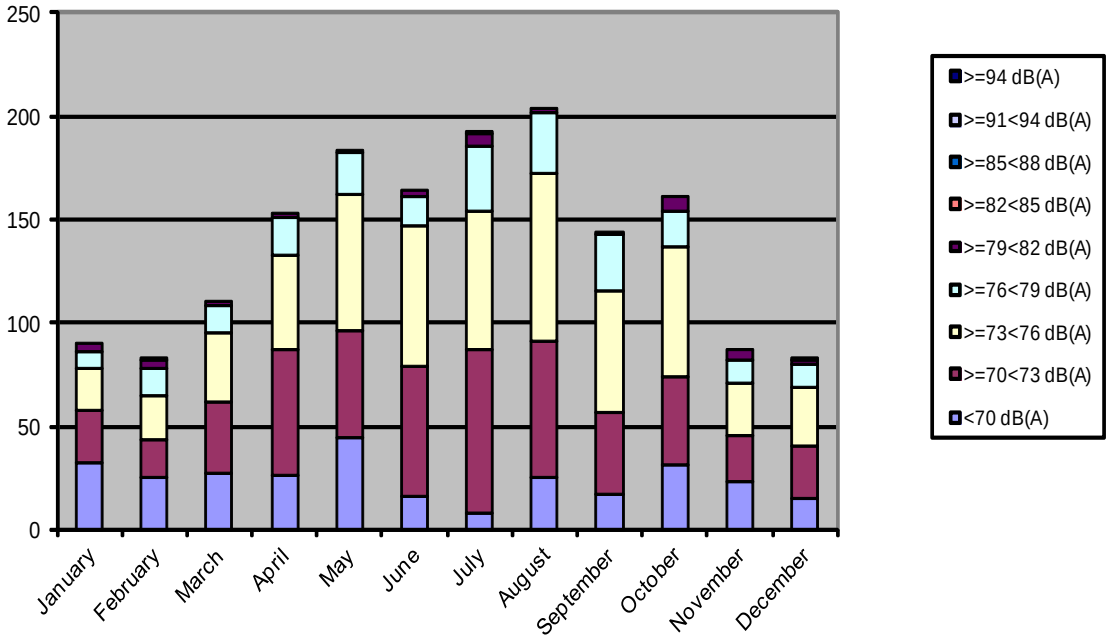
	Number of Departures (Daytime)										
	<70 dB(A)	>=70<73 dB(A)	>=73<76 dB(A)	>=76<79 dB(A)	>=79<82 dB(A)	>=82<85 dB(A)	>=85<88 dB(A)	>=88<91 dB(A)	>=91<94 dB(A)	>=94 dB(A)	Total
January	245	720	1,091	173	7	2	1	0	0	0	2,239
February	371	884	1,046	218	16	4	2	1	0	0	2,542
March	391	1,002	1,217	292	14	1	2	0	0	0	2,919
April	356	902	1,586	416	17	0	4	2	0	0	3,283
May	492	984	1,736	544	35	3	2	3	0	0	3,799
June	324	985	1,633	505	29	6	1	1	0	0	3,484
July	176	1,361	1,298	514	43	2	2	2	0	0	3,398
August	284	1,099	1,792	523	24	6	1	0	0	0	3,729
September	240	902	1,494	456	27	2	3	1	0	0	3,125
October	396	798	1,696	478	41	1	1	0	0	0	3,411
November	234	572	1,311	362	44	6	0	0	0	0	2,529
December	189	445	1,307	398	43	1	2	1	0	0	2,386
% Total	*10.0%*	*28.9%*	*46.7%*	*13.2%*	*0.9%*	*0.1%*	*0.1%*	*0.0%*	*0.0%*	*0.0%*	100.0%
Total	**3,698**	**10,654**	**17,207**	**4,879**	**340**	**34**	**21**	**11**	**0**	**0**	**36,844**



5.4. Night Noise Levels

The following table identifies maximum night-time noise levels recorded by departing aircraft at the fixed noise monitoring terminals between the hours of 23:00 and 06:00 local time, Monday to Saturday and until 07:00 on Sunday morning.
(Any aircraft exceeding the Night Noise Violation Limit of 82dB(A) is fined accordingly)

	Number of Departures (Night)										
	<70 dB(A)	>=70<73 dB(A)	>=73<76 dB(A)	>=76<79 dB(A)	>=79<82 dB(A)	>=82<85 dB(A)	>=85<88 dB(A)	>=88<91 dB(A)	>=91<94 dB(A)	>=94 dB(A)	Total
January	32	26	20	8	4	0	0	0	0	0	90
February	25	18	22	13	4	1	0	0	0	0	83
March	27	35	33	13	2	0	0	0	0	0	110
April	26	61	46	18	2	0	0	0	0	0	153
May	45	51	66	21	1	0	0	0	0	0	184
June	16	63	68	14	3	0	0	0	0	0	164
July	8	79	67	32	6	1	0	0	0	0	193
August	25	66	81	30	2	0	0	0	0	0	204
September	17	40	59	27	1	0	0	0	0	0	144
October	31	43	63	17	7	0	0	0	0	0	161
November	23	23	25	11	5	0	0	0	0	0	87
December	15	25	29	11	2	1	0	0	0	0	83
% Total	*17.5%*	*32.0%*	*35.0%*	*13.0%*	*2.4%*	*0.2%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	***100%***
Total	**290**	**530**	**579**	**215**	**39**	**3**	**0**	**0**	**0**	**0**	**1,656**



5.5. Noise Violations

LLA operates a noise violation policy whereby a surcharge of between 300% and 600% of the combined Landing and Navigation Service Charge is applied in respect of any landing prior to a take-off on which noise violation levels, as set out below, are exceeded. These violation limits encourage airlines to operate modern and quieter aircraft types.

The daytime noise violation level of 94dB(A) is in line with the other major London airports whilst the current night noise violation level of 82dB(A) is now lower than at the designated London airports.

For Day Flights

06:00 – 22:59 Local Time (Monday to Saturday)
07:00 – 22:59 Local Time (Sunday)

>94 dB(A) 400% surcharge

For Night Flights

23:00 – 05:59 Local Time (Monday to Saturday)
23:00 – 06:59 Local Time (Sunday)

>82 – 85 dB(A)	300% surcharge
>85 – 88 dB(A)	500% surcharge
>88 dB(A)	600% surcharge

5.6. Daytime Noise Violations during 2012

There were no violations of the daytime noise level in 2012, in line with 2011.

5.7. Night Noise Violations during 2012

There were a total of 3 violations of the 82dB(A) night noise violation level in 2012 (details below), compared to 12 in 2011. This reduction is due primarily to operators upgrading older generation Gulfstream 2/3 Executive Jets and A30B cargo aircraft (those operated by both DHL & MNG Airlines being replaced by the newer A306 series).

Date / Time (Local)	Aircraft Type	Noise Level	Penalty
17/02/2012 02:54 hrs	A30B (MNG Cargo)	82.5dB(A)	300% of runway charge
06/07/2012 23:20 hrs	Boeing 721 Executive Jet	83.3dB(A)	300% of runway charge
24/12/2012 02:54 hrs	A30B (MNG Cargo)	83.0dB(A)	300% of runway charge

6. Noise Contours

6.1. Leq

Since 1989, the preferred measure of aircraft noise has been the A-weighted equivalent noise level, Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK, the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700 – 2300 for an average day between the 16th June and 15th September. In addition, LLA also produces contours for the 8 hour night period between 2300 and 0700 for an average summer night in terms of the LAeq, 8h indicator.

The daytime contours show the LAeq,16h values in 3 dB(A) steps from 57 dB(A) to 72 dB(A). The night contours show the LAeq, 8h values also in 3 dB(A) starting at 48 dB(A). These values relate to guidance provided in Planning Policy Guidance Note 24 – Planning & Noise.

Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the Airport and also the departure routes flown. In addition, changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, known as the modal split, which is determined by the prevailing wind direction.

The Aircraft Noise Model

The noise contours for the Airport are produced using INM (the Integrated Noise Model), which is the method used by many other airports in the UK.

At the beginning of 2012 the contour production and methodology was updated, using the most recent version of INM (version 7.0c) and this was used to calculate all noise contours throughout 2012.

As the annual summer contours for 2012 have been produced using INM version 7.0c, compared to INM version 7.0b in 2011 no meaningful comparison is possible. For this reason annual summer contour data from 2011 (as published in the AMR 2011) has been recalculated using the updated methodology (INM version 7.0c), to provide a direct comparison year on year.

6.2. Annual Noise Contours Summer 2012

Work has been completed on the production of the annual noise contours for summer 2012 covering the standard summer period from the 16th June to the 15th September inclusive, using INM version 7.0c.

The daytime results for 2012 are shown below, together with the equivalent results for the previous summer. However, daytime results for 2011 have been presented based on both contour methodologies described in Section 6.1, in order to provide a direct comparison year on year. Figures for the base year of 1984 and the predicted contour for 1999 are also shown, for comparison purposes:

Contour areas (Daytime)

$L_{Aeq, 16\ hour}$ Day time	*1984 (km^2)*	*1999 (km^2)*	2011 (km^2) (Previous AMR)	2011 (km^2) (2012 method)	2012 (km^2)	Difference 2011-2012 (km^2)
>72	*1.63*	*1.5*	0.8	0.8	0.8	0.0
>69	*2.80*	*2.5*	1.3	1.3	1.4	+0.1
>66	*4.86*	*4.4*	2.3	2.5	2.6	+0.1
>63	*9.1*	*7.3*	4.3	5.0	5.2	+0.2
>60	*17.18*	*11.8*	7.6	8.6	8.7	+0.1
>57	***31.52***	***19.6***	**12.8**	**14.5**	**14.7**	**+0.2**

The night-time results for 2012 are shown below, together with the equivalent results for the previous summer. However, night-time results for 2011 have been presented based on both contour methodologies described in Section 6.1, in order to provide a direct comparison year on year. Figures for the base year of 1984 and the predicted contour for 1999 are also shown, for comparison purposes:

Contour areas (Night-time)

$L_{Aeq, 8\ hour}$ Night time	*1984 (km^2)*	*1999 (km^2)*	2011 (km^2) (Previous AMR)	2011 (km^2) (2012 method)	2012 (km^2)	Difference 2011-2012 (km^2)
>72	*0.79*	*1.1*	0.4	0.4	0.4	0.0
>69	*1.39*	*1.8*	0.6	0.6	0.6	0.0
>66	*2.42*	*3.0*	0.9	1.0	1.0	0.0
>63	*4.01*	*5.2*	1.6	1.7	1.7	0.0
>60	*7.06*	*8.3*	3.0	3.6	3.7	+0.1
>57	*13.05*	*13.2*	5.6	6.7	6.7	0.0
>54	*24.48*	*21.6*	9.7	11.4	11.5	+0.1
>51	*44.92*	*36.0*	16.7	20.0	20.0	0.0
>48	***85.04***	***60.6***	**30.1**	**35.9**	**36.0**	**+0.1**

It can be seen that there has been a slight increase in the daytime contour areas from 2011 to 2012, when comparing figures using the same updated methodology, due to a small (3%) increase in movements. The night-time contour areas remain largely static.

In terms of movements, the daytime movements (over the 92 day contour period) increased from 23,570 in 2011 to 24,294 in 2012 and the night time movements decreased slightly from 4,446 to 4,414, year on year.

The modal split for summer 2012 was 86% westerly / 14% easterly compared with 80% westerly / 20% easterly in summer 2011.

The 2012 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

6.3. Contour Population Counts

The population counts for this year were calculated using the CACI Ltd, 2012 postcode database. Counts for 2011 have been presented based on both contour methodologies described in Section 6.1, in order to provide a direct comparison year on year. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted.

6.4. Day-Time Contour Results

$L_{Aeq, 16 hour}$ Day time	2011 Dwellings (Previous AMR)	2011 Dwellings (2012 method)	2012 Dwellings
>72	0	0	0
>69	0	0	0
>66	3	5	5
>63	124	333	383
>60	717	896	1,103
>57	**1,967**	**2,818**	**3,034**

$L_{Aeq, 16 hour}$ Day time	2011 Population (Previous AMR)	2011 Population (2012 method)	2012 Population
>72	0	0	0
>69	0	0	0
>66	6	10	10
>63	368	941	1,064
>60	1,997	2,517	3,006
>57	**5,217**	**6,947**	**7,321**

6.5. Night-Time Contour Results

$L_{Aeq, 8hour}$ Night time	2011 Dwellings (Previous AMR)	2011 Dwellings (2012 method)	2012 Dwellings
>72	0	0	0
>69	0	0	0
>66	0	0	0
>63	0	1	1
>60	9	11	15
>57	430	558	634
>54	998	1,552	1,673
>51	2,718	3,600	3,958
>48	**5,353**	**6,872**	**6,701**

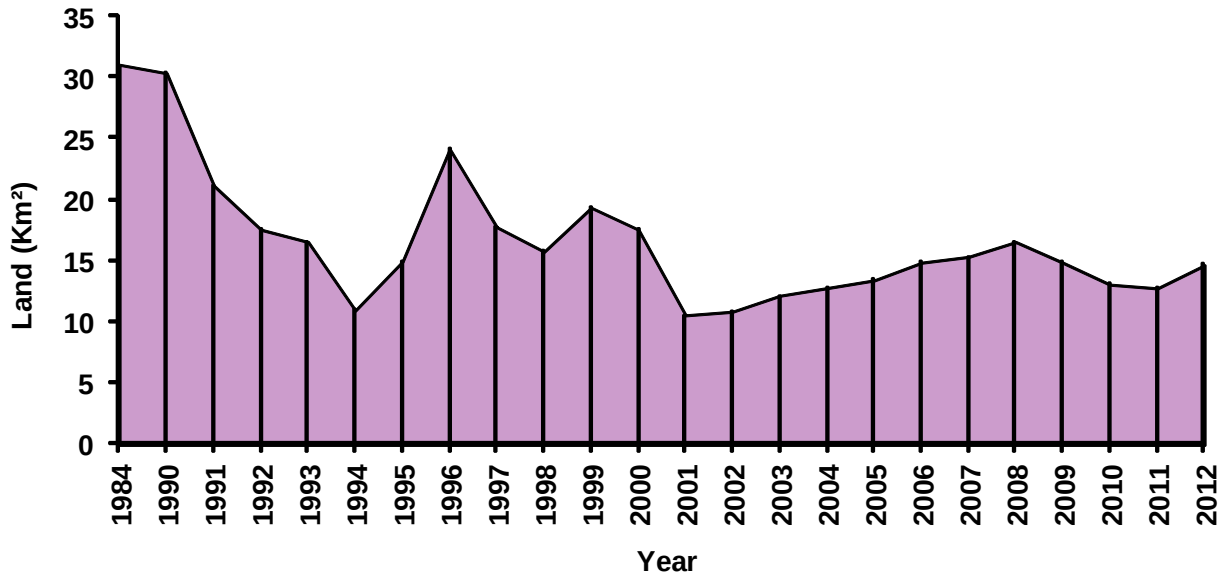
$L_{Aeq, 8hour}$ Night time	2011 Population (Previous AMR)	2011 Population (2012 method)	2012 Population
>72	0	0	0
>69	0	0	0
>66	0	0	0
>63	0	2	2
>60	18	29	36
>57	1,183	1,555	1,740
>54	2,782	4,312	4,563
>51	6,790	8,669	9,304
>48	**12,744**	**16,424**	**15,790**

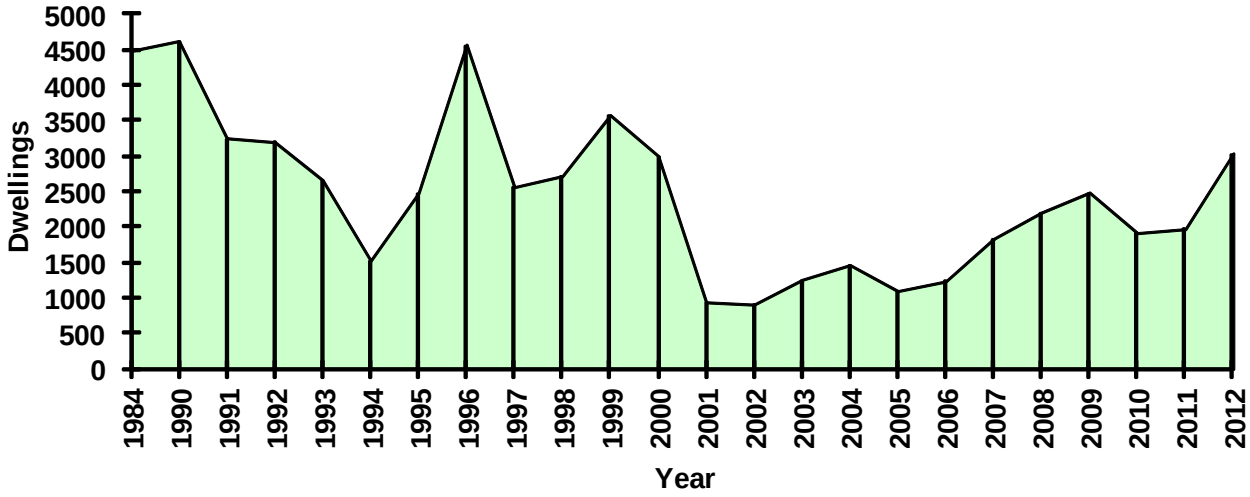
In the above tables the results for households and resident populations are cumulative, i.e. values presented for larger contours (geographically) include the values for those contours within them.

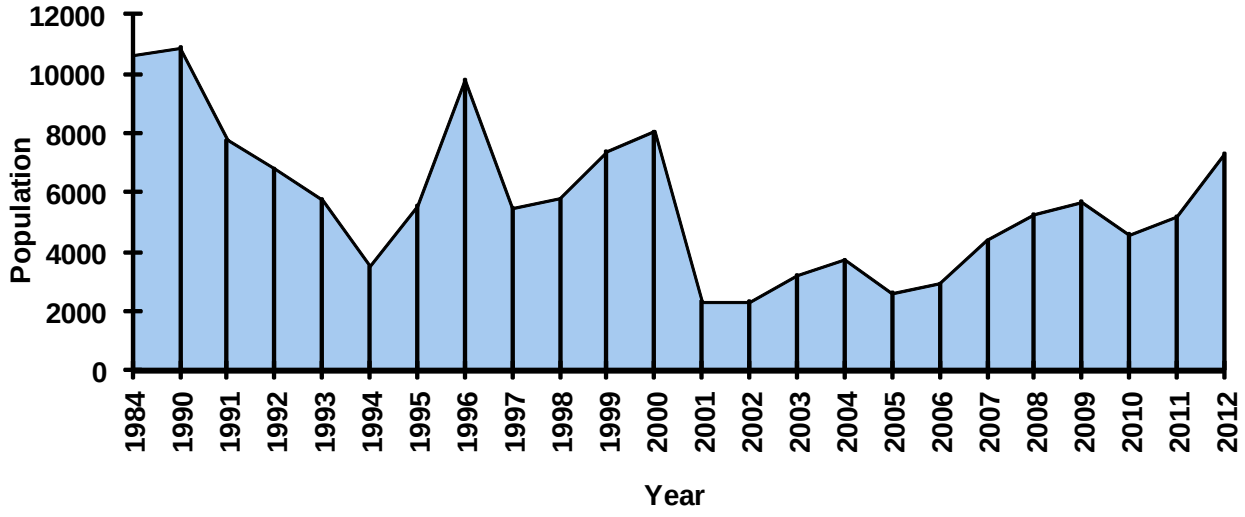
As with the contour areas, significant changes to the population count figures in 2012, compared to those presented in the AMR 2011, are due largely to the change in contour methodology. When comparing the 2012 contour results with the 2011 contour results prepared using the same updated methodology (INM version 7.0c), much smaller changes to the dwelling counts and population figures are observed. For example for the daytime 57dB(A) contour there is an increase of around 8% for dwellings and 5% for population and the night-time 48dB(A) contour shows a decrease of around 2% for dwellings and 4% for population. The reduction at night-time is partly due to the updated postcode database.

6.6. Noise Impact Within 16-Hour (Day) Leq Contours

The increase in 2012 can be largely attributed to a change in the contour methodology

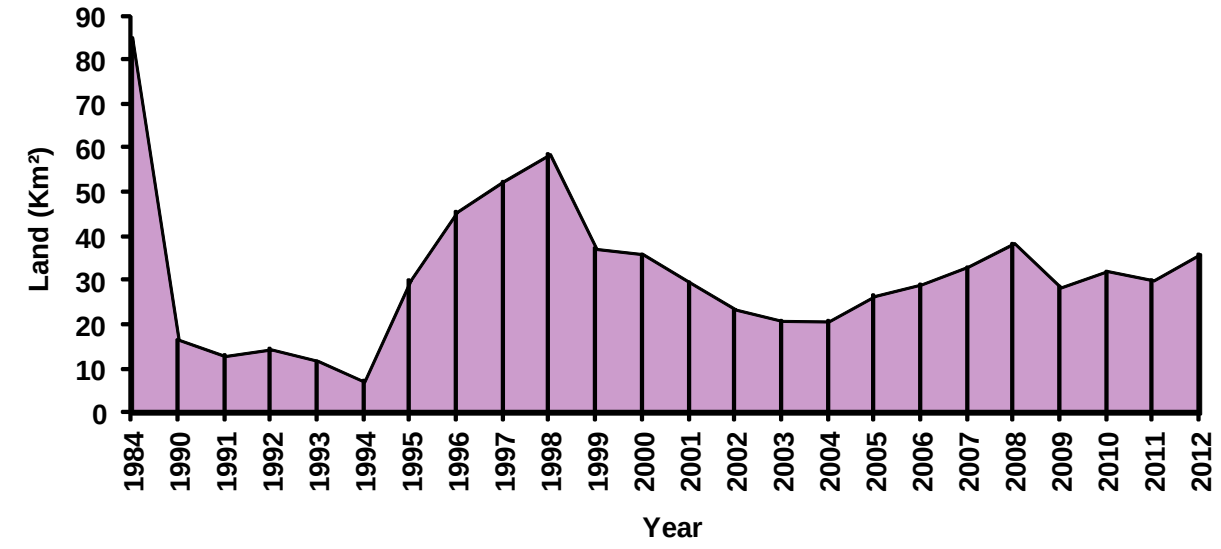


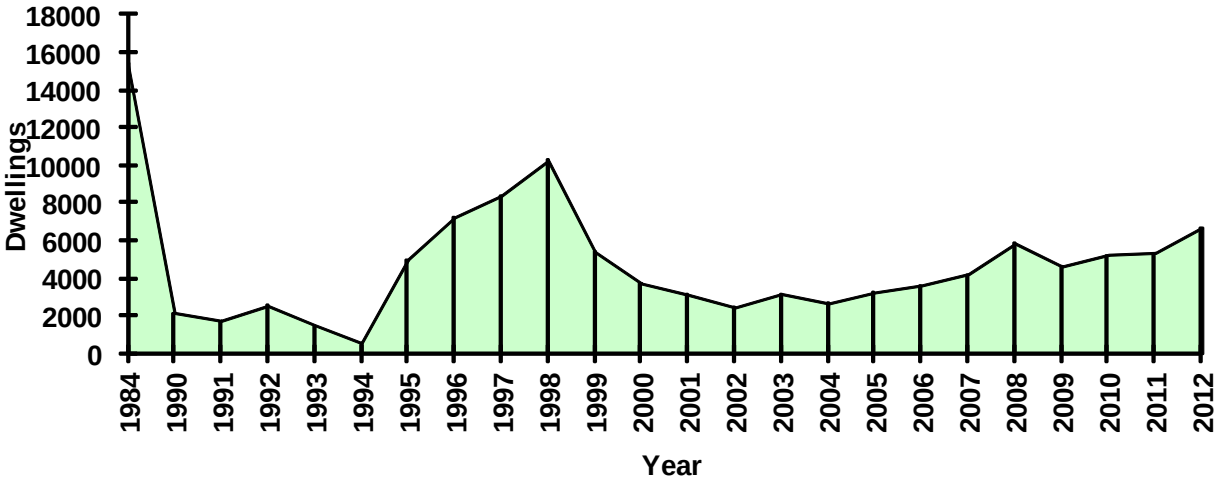


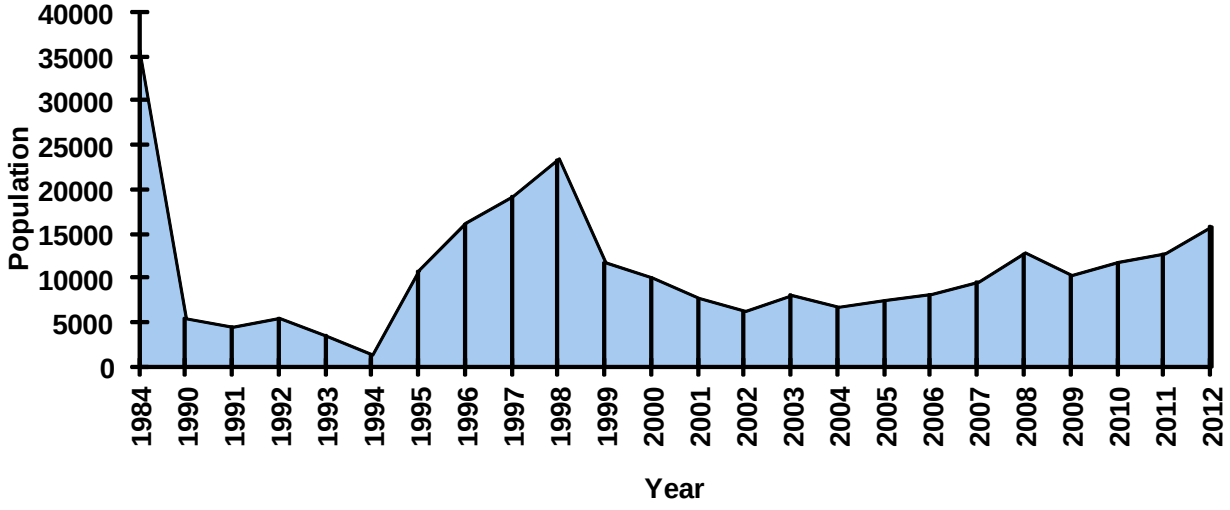


6.7. Noise Impact Within 8-Hour (Night) Leq Contours

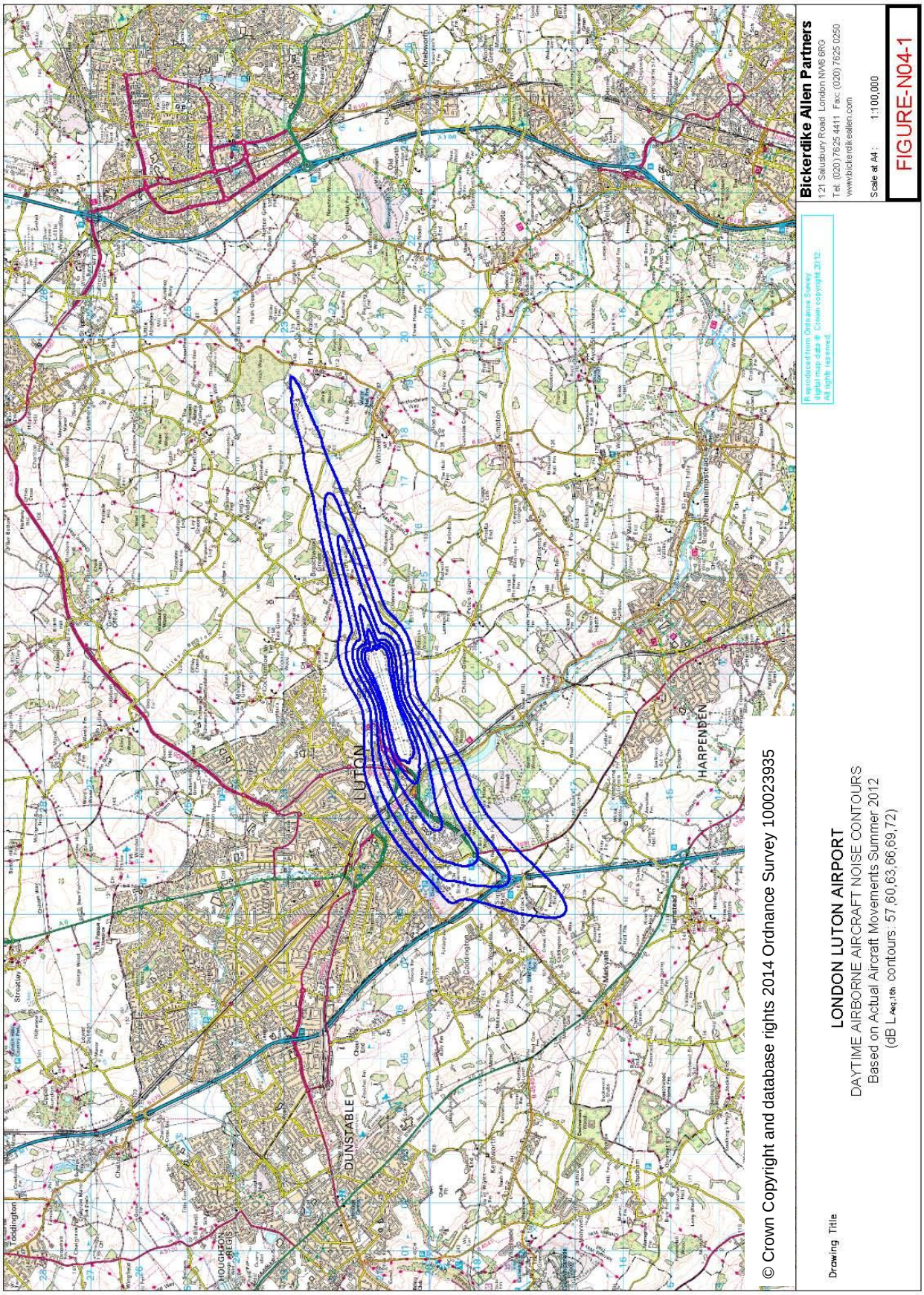
The increase in 2012 can be largely attributed to a change in the contour methodology



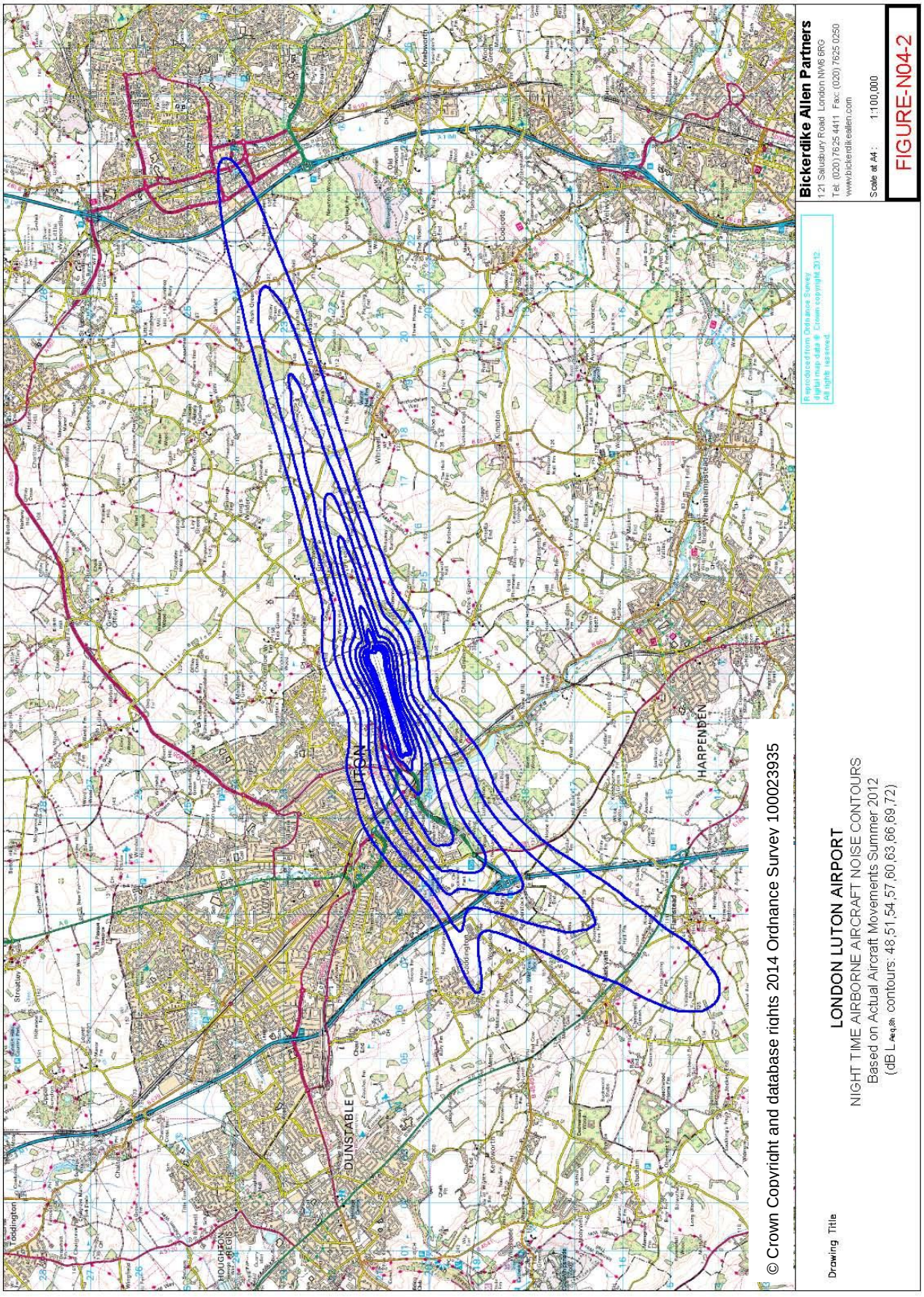




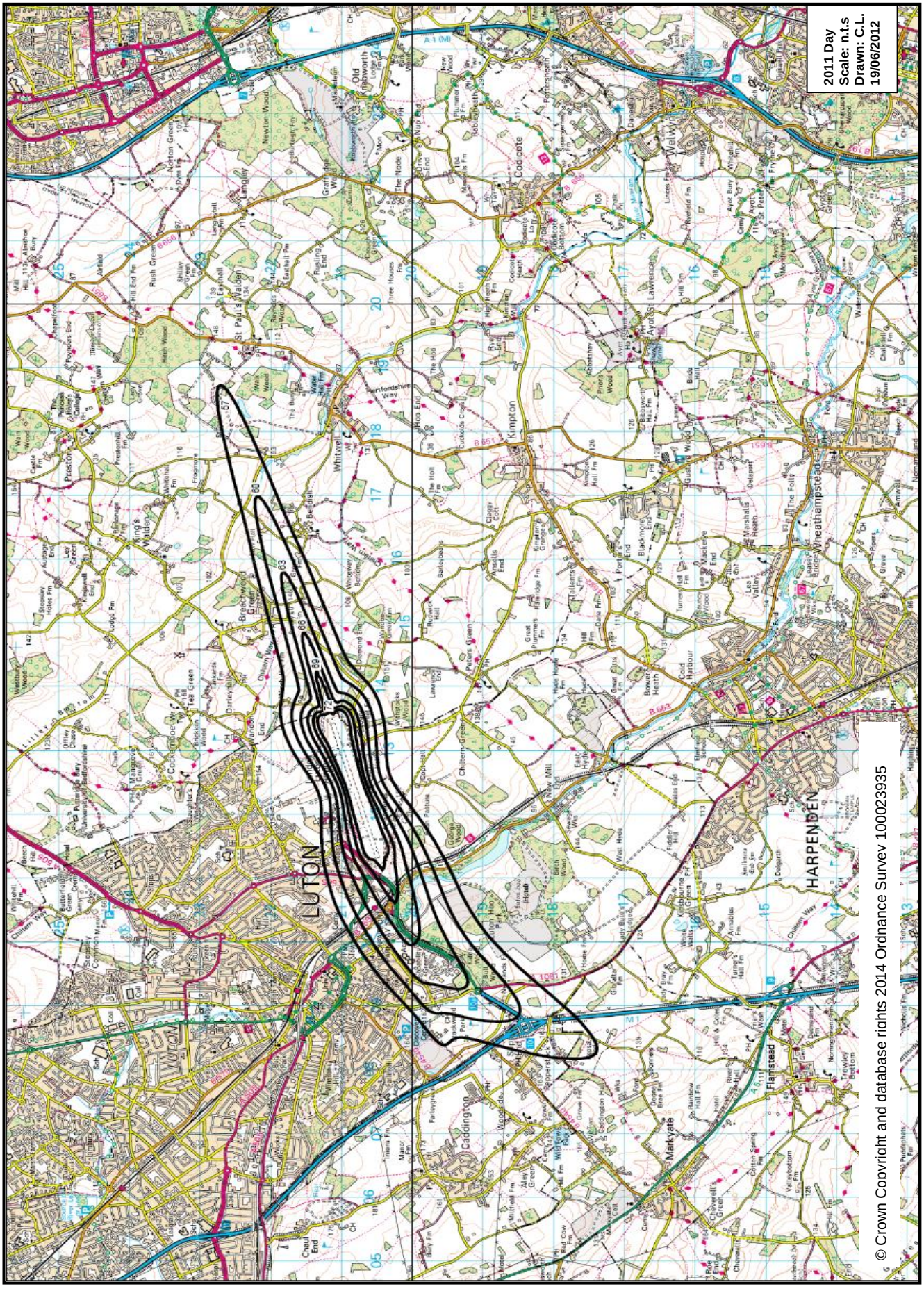
6.8. Annual Day Noise Contours 2012



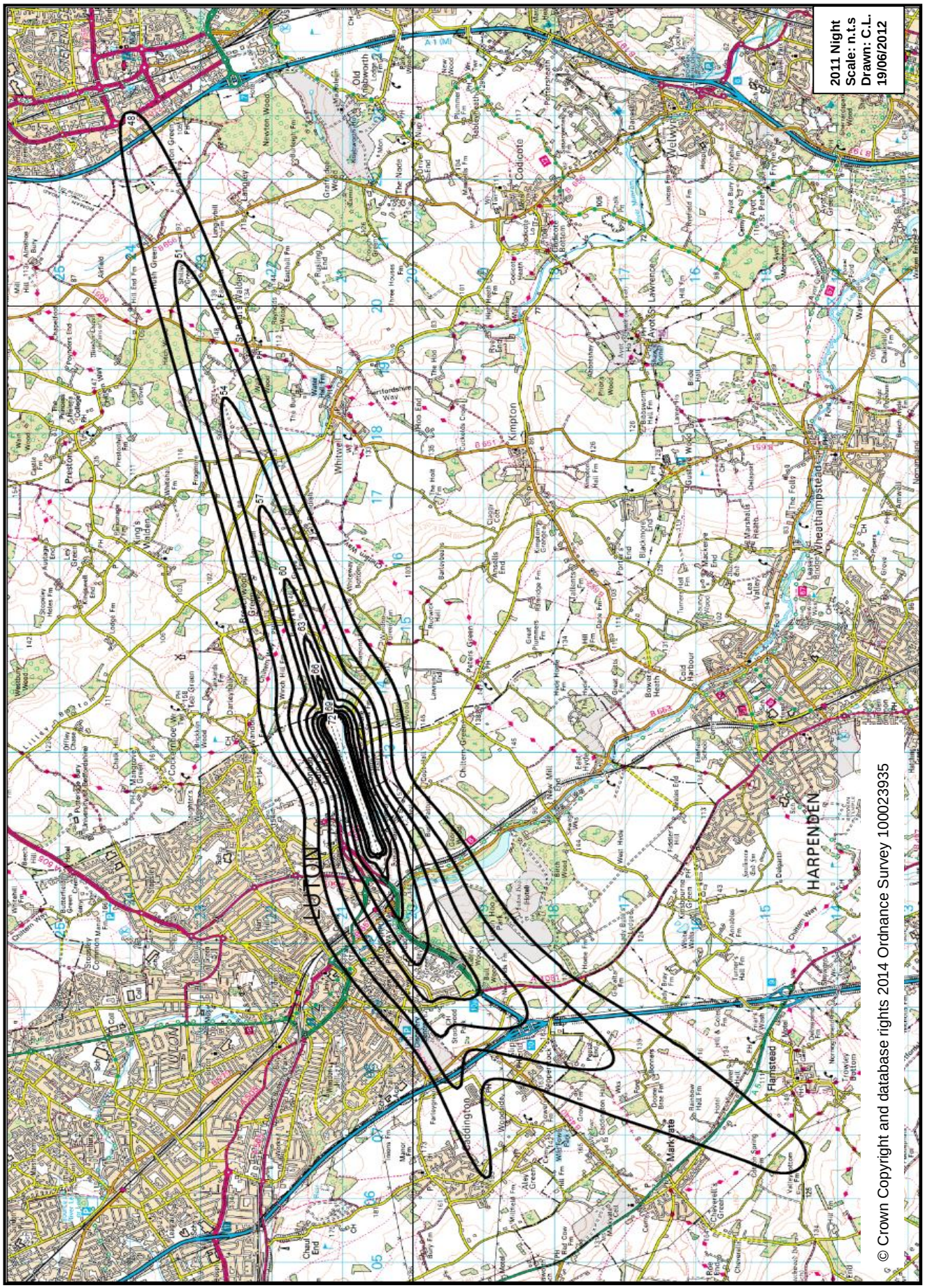
6.9. Annual Night Noise Contours 2012



6.10. Annual Day Noise Contours 2011



6.11. Annual Night Noise Contours 2011



6.12. Quarterly Night Noise Contours

The Night Jet Policy, which became effective from 1st April 2002, undertook to provide noise contour information for an average night for each quarter, with the results shown below.

6.13. Night Noise Contour Results (km²)

L_{Aeq}, 8hr Night	Jan – Mar 2011	Jan – Mar 2012	Apr – Jun 2011	Apr – Jun 2012	Jul – Sep 2011	Jul – Sep 2012	Oct - Dec 2011	Oct - Dec 2012
>72	0.3	0.2	0.4	0.4	0.4	0.4	0.3	0.3
>69	0.4	0.4	0.6	0.6	0.6	0.6	0.5	0.4
>66	0.6	0.6	0.9	0.9	0.9	1.0	0.7	0.7
>63	1.0	1.0	1.6	1.5	1.6	1.7	1.1	1.1
>60	1.7	1.6	2.9	3.0	3.0	3.6	2.0	1.8
>57	3.0	3.2	5.4	5.9	5.5	6.6	3.7	3.7
>54	5.5	6.2	9.5	10.1	9.6	11.3	6.6	6.8
>51	9.6	10.4	16.1	18.0	16.4	19.7	11.2	11.7
>48	**16.3**	18.3	**28.6**	31.2	**29.5**	35.5	**19.1**	20.5
W/E Split (%)	*62/38*	*69/31*	*74/26*	*61/39*	*78/22*	*86/14*	*77/23*	*75/25*

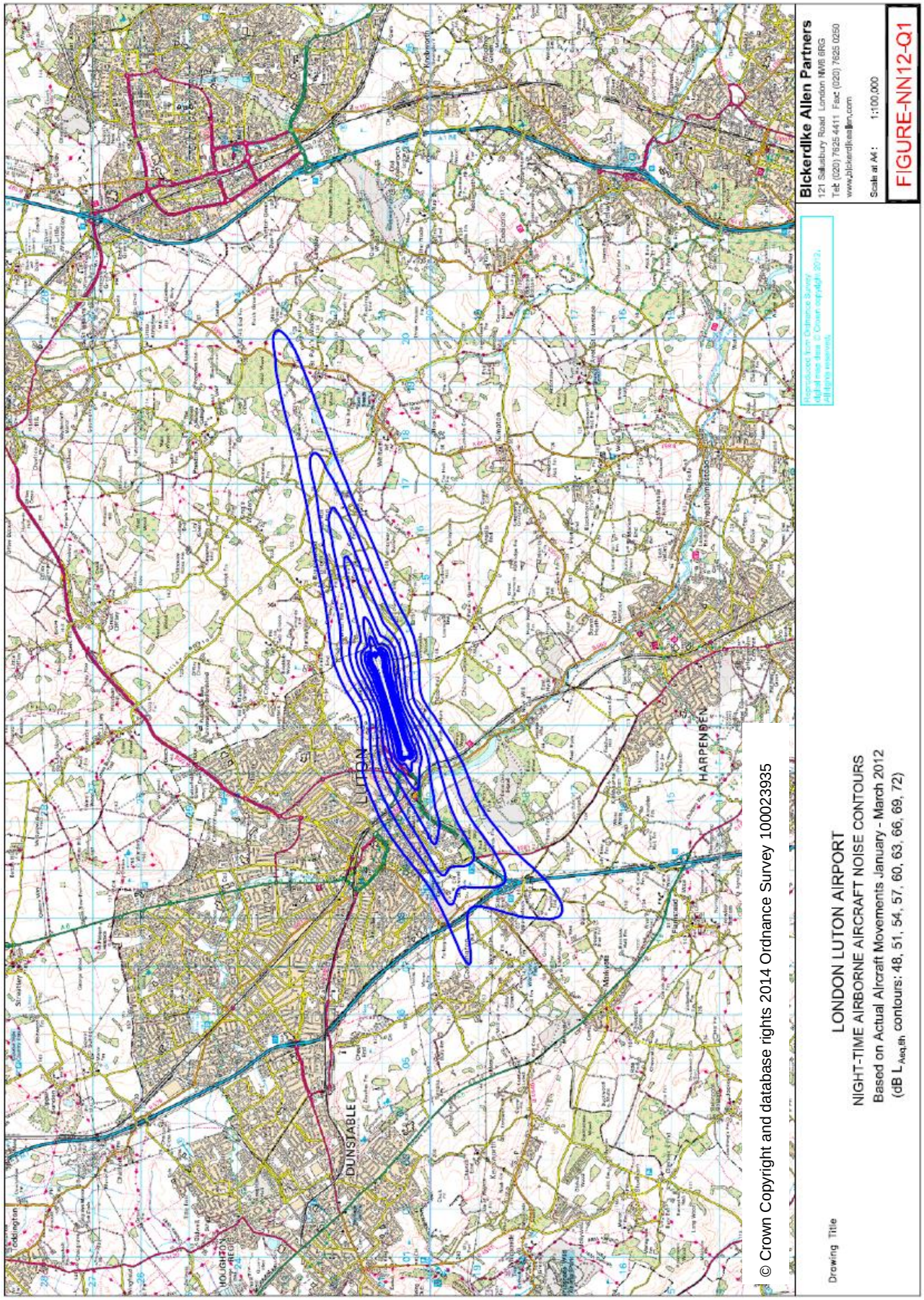
As indicated in paragraph 6.1, the 2012 contours were produced using version 7.0c of INM, compared to INM version 7.0b in 2011 and therefore the results shown above are not comparable year on year. When comparing annual figures using the same updated methodology the night-time contour areas remain largely static.

6.14. Night Noise Movements by INM Aircraft Type

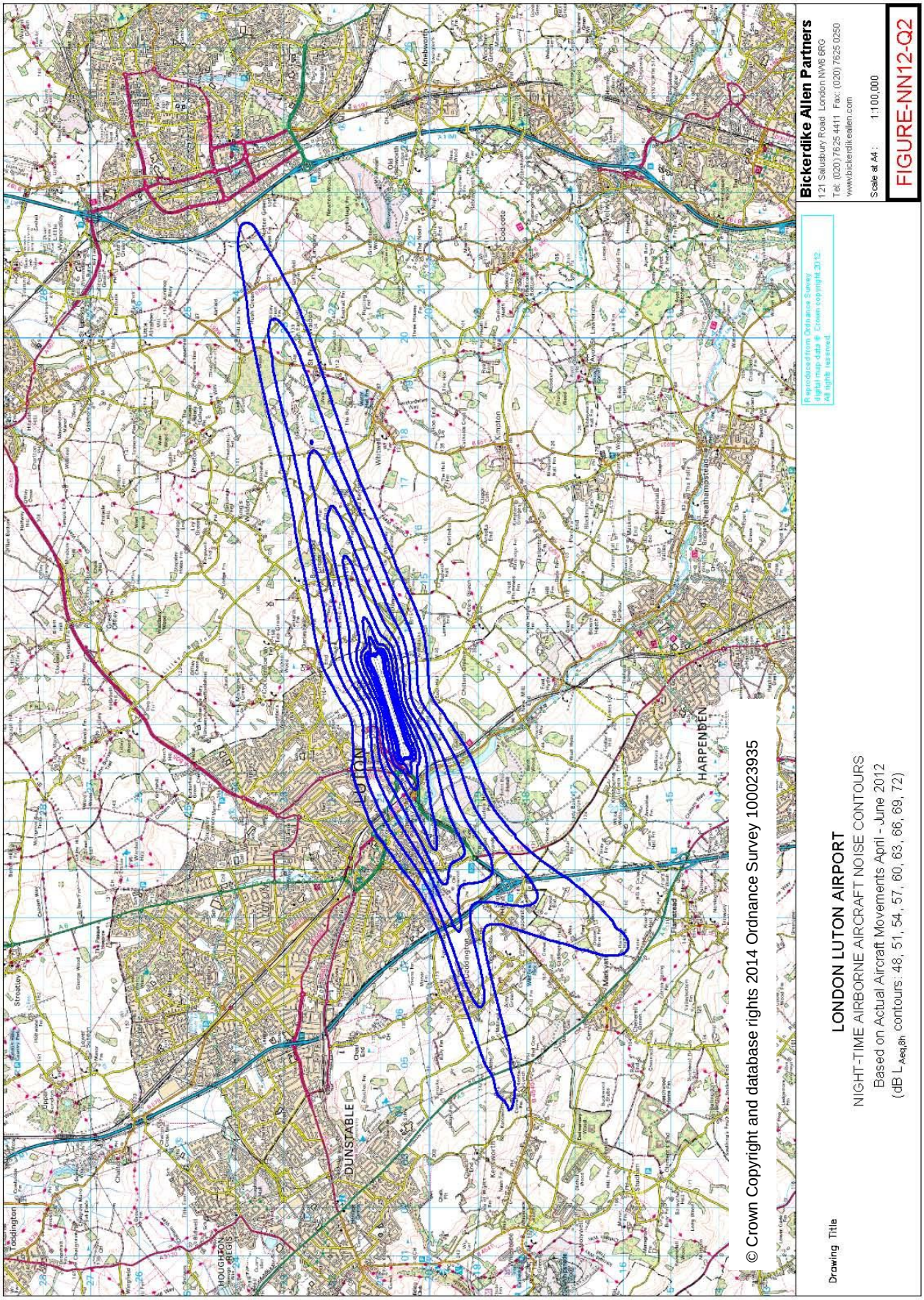
At the request of LLACC, the movement numbers in the table below, outlining those aircraft types which were previously grouped in 'other' and which were 10 or more, have been disaggregated as from the second quarter 2010. For aircraft types with less than 10 movements in a period or types that were not explicitly presented in previous periods, 'n/a' is shown.

Aircraft Type	Jan – Mar 2011	Jan – Mar 2012	Apr – Jun 2011	Apr – Jun 2012	Jul – Sep 2011	Jul – Sep 2012	Oct - Dec 2011	Oct - Dec 2012
737300	14	18	20	27	17	21	0	14
737400	13	32	24	100	37	104	30	47
737700	79	12	98	10	89	15	34	15
737800	179	209	589	508	637	619	291	347
757RR	46	32	94	92	91	105	47	60
A300	96	117	114	116	92	117	118	107
A320	459	352	976	1061	1,252	1,288	564	501
A321	79	68	162	147	193	176	90	100
A319	212	360	956	950	1,106	1,024	454	364
767300	n/a	n/a	10	n/a	n/a	n/a	n/a	n/a
BAE146	n/a	n/a	n/a	n/a	n/a	15	n/a	n/a
BAEATP	127	130	135	129	144	137	132	132
BEC200	n/a	n/a	14	12	12	10	10	13
CL601	123	124	157	21	124	86	135	62
CLREGJ	26	10	17	151	21	95	24	106
CNA510	13	n/a	12	18	13	21	12	n/a
CNA525	27	21	39	41	36	36	28	26
CNA550	0	n/a	19	21	17	28	10	23
CNA560	38	27	55	46	52	39	35	47
CNA650	n/a	n/a	10	n/a	0	n/a	0	n/a
CNA750	0	n/a	0	n/a	10	n/a	0	n/a
EMB135	0	n/a	0	n/a	12	n/a	0	n/a
EMB145	15	18	47	40	41	32	35	39
FAL20A	30	19	34	26	32	19	27	25
FAL900	n/a	39	n/a	18	n/a	16	n/a	22
GIV	66	69	89	87	57	74	89	61
GV	94	88	93	99	77	93	83	105
HS125	n/a	n/a	10	10	n/a	n/a	12	n/a
HS1258	24	18	22	37	30	22	24	25
IA1125	n/a	n/a	n/a	n/a	11	15	n/a	11
LEAR35	57	26	48	35	48	26	61	43
LEAR60	n/a	n/a	11	n/a	n/a	n/a	n/a	n/a
PC6	n/a	n/a	n/a	n/a	n/a	12	n/a	n/a
Other	*106*	*82*	*95*	*75*	*70*	*75*	*77*	*51*
Total	**1,923**	**1,871**	**3,950**	**3,877**	**4,321**	**4,320**	**2,422**	**2,357**

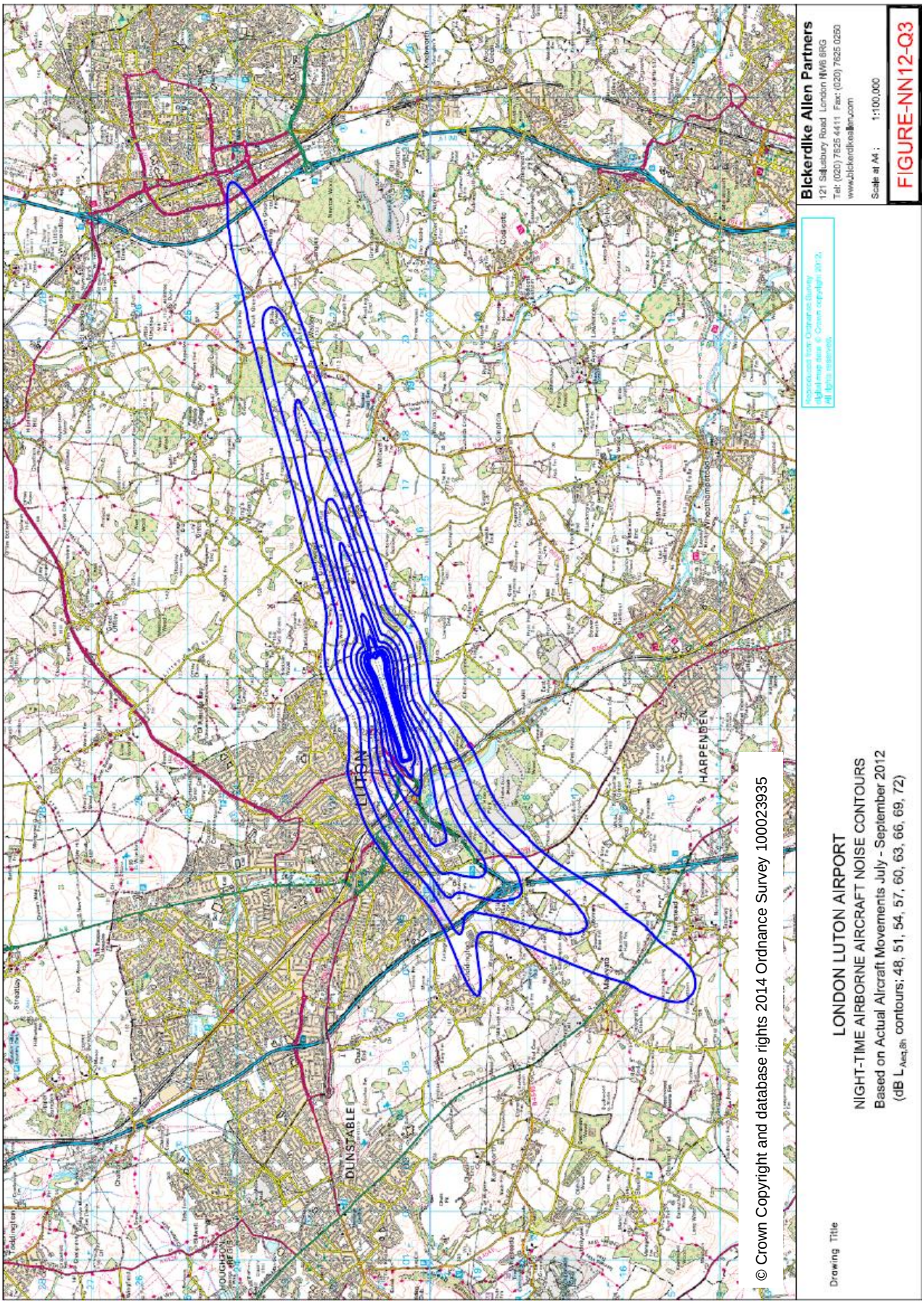
6.15. Quarterly Night Noise Contours 2012 Jan – Mar



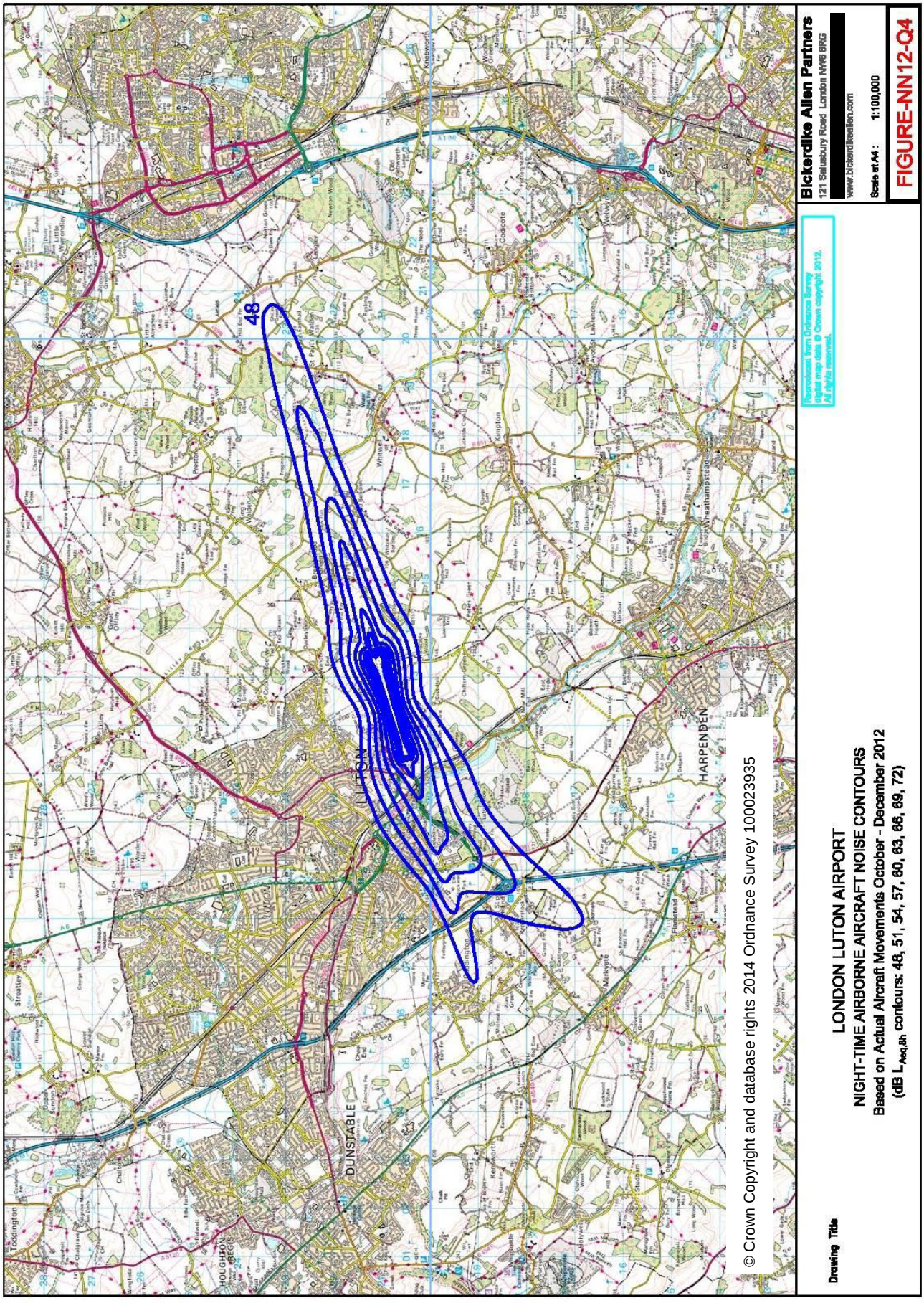
6.16. Quarterly Night Noise Contours 2012 Apr – Jun



6.17. Quarterly Night Noise Contours 2012 Jul – Sep



6.18. Quarterly Night Noise Contours 2012 Oct – Dec



7. *Noise Action Plan*

The table below provides an update on the actions outlined within the Noise Action Plan (2010-2015). Those actions highlighted in orange have been postponed from the original date in the published Noise Action Plan, whilst those in green have been actioned during 2012.

	Action	Noise problem	Timescale
1	Operate and maintain a noise and track-keeping system to monitor aircraft operations, reporting statistics quarterly to the LLACC (via NTSC)	A-F	Ongoing
2	Produce L_{den} noise contours annually, based on an annual average 24 hour period and present to LLACC (via NTSC)	A-F	2013
3	Undertake regular analysis of aircraft activity and noise to identify where a review of procedures may help minimise disturbance	A-F	Ongoing
4	Monitor % compliance of Continuous Descent Approaches (CDA) both day and night, reporting quarterly to LLACC (via NTSC)	A, C, D	Ongoing
5	Undertake community visits with a portable handheld noise monitoring device, on request	A-F	Ongoing
6	Acquire a new 'permanent' mobile noise monitor which can be left in community locations for extended periods to measure aircraft noise and compare with published noise contours	A-F	2011 (Actioned)
7	Present quarterly night contours to LLACC (via NTSC)	A-F	Ongoing
8	Investigate, log and respond to all complaints relating to London Luton Airport aircraft activity, reporting in-depth statistics quarterly to the LLACC (via NTSC)	A-F	Ongoing
9	Quarterly Airfield Environment Office Reports to be available to view on the London Luton Airport website as well as LLACC website	N/A	Ongoing
10	Monitor helicopter operations to/from London Luton Airport to ensure they avoid, where possible, the most densely populated areas	C	Ongoing
11	Calibrate noise and track-keeping system and INM noise contour model on an annual basis	N/A	Ongoing
12	Monitor the track-keeping compliance and follow up with operators, as necessary	C	Ongoing
13	Monitor the number of marginally compliant Chapter 3 aircraft (approximately 10% of total movements during 2009)	B	2013
14	Monitor and report progress against Noise Action Plan actions to LLACC (via NTSC), providing statistics annually in the Annual Monitoring Report	A-G	2013
15	Review the voluntary Night Noise Policy at least every five years, in consultation with LLACC (via NTSC)	A-D	2015
16	Encourage daytime operations through higher landing fees at night	A, B	Ongoing
17	Fine any departing aircraft exceeding noise limits, to encourage airlines to operate the quietest aircraft types, (82dB(A) at night and 94dB(A) during the daytime)	A, B	Ongoing
18	Discourage residential development close to the airport boundary or areas affected by aircraft noise, in liaison with Local Authorities.	A-F	Ongoing
19	Review the current Night Noise Policy	A-D	2010 (Actioned)
20	Divert all noise violation limit penalties from airport operations to support the noise management programme and Community Trust Fund	A-G	Ongoing
21	Regular liaison with airline operators via a 'Flight Ops' Committee to ensure adherence to existing standard procedures and encourage innovation	A-F	Ongoing
22	Review operational procedures in relation to noise with support of the 'Flight Ops' committee and NTSC	A-F	Ongoing

	Action	Noise problem	Timescale
23	Work with operators to encourage the voluntary phase out of noisiest aircraft	A, B, D, E, F	2013
24	Continue to review procedures for helicopter operations with the support of air traffic control	C	Ongoing
25	Work with operators on the voluntary phase out of marginally compliant Chapter 3 high aircraft i.e. hushkitted aircraft	A, B, D, E, F	2013
26	Explore with the 'Flight Ops' Committee/NTSC penalties for flying off track after the introduction of RNAV-1 departure routes	C	2014
27	Work with airlines, air traffic control, NATS and other stakeholders to introduce new technologies and environmental improvements	A-F	Ongoing
28	Review the Engine Ground Running policy to minimise disturbance during the night and late in the evening	A	2013
29	Undertake a review of day noise violation limits, in conjunction with the 'Flight Ops' Committee/NTSC	B	2013
30	Implement a noise insulation scheme for non-residential noise sensitive buildings	G	2013
31	Implement a new departure code of practice to minimise noise impact	A, C, F	2011 (Actioned)
32	Operate within existing planning limits	A-F	Ongoing
33	Actively participate and support the work of the industry and Airport Operators Association with respect to its 'Sustainable Aviation' programme	N/A	Ongoing
34	Liaise with London Heathrow and other airports with respect to non-London Luton overflying traffic, where necessary	C, D, E, F	2013
35	Work with LLACC (via NTSC), the 'Flight Ops' committee and NATS to identify airspace improvements which may enhance the noise environment	A-F	Ongoing
36	Agree key performance indicators and targets for noise 'actions', where appropriate, with LLACC (via NTSC)	A-G	2012 (Actioned)
37	Set a target for day and night CDA compliance with air traffic control	A-D	2012 (Actioned)
38	Assess the impact of London Luton Airport traffic on the Chilterns AONB and explore potential for operational improvements	E	2013
39	Lower the night noise violation limit	A-F	2010 (Actioned)
40	Attend public meetings on request, where appropriate, to discuss the airport's operation	N/A	Ongoing
41	Provide an information pack to first time complainants and those wishing to relocate into the area	N/A	Ongoing
42	Formally engage with air traffic control and airline/other operators to help improve noise management/track keeping	N/A	Ongoing
43	Host visits from local residents and MPs to discuss community concerns and to demonstrate the Noise and Track-Keeping system	N/A	Ongoing
44	Prepare an Annual Monitoring Report, in conjunction with Luton Borough Council, incorporating detailed statistics on all aspects of the airport's operations	N/A	Ongoing
45	Review format of the Annual Monitoring Report to incorporate Noise Action Plan progress	N/A	2013
46	Establish a committee with Environmental Health Officers of Local Authorities (Herts, Beds and Bucks) to discuss the impact of the airport's operations and the Noise Action Plan	N/A	2013
47	Continue to offer email, telephone and website as options for complaints and enquiries	N/A	Ongoing
48	Review our noise complaint handling system and consider follow up surveys in conjunction with LLACC (via NTSC)	N/A	2013
49	Invite members of the public to visit the Environment Office to review noise and track information	N/A	Ongoing

	Action	Noise problem	Timescale
50	Engage effectively with the LLACC and NTSC	N/A	Ongoing
51	Engage with local planning authorities to ensure they are informed about noise matters	N/A	Ongoing
52	Review communication material, the noise information pack and the London Luton Airport website with respect to noise/noise management	N/A	2013
53	Hold community surgeries to give local people an opportunity to discuss issues in person with representatives from the Community Relations and Environment Department	N/A	2013
54	Introduce a web-based noise and track system for public access on the London Luton Airport website	N/A	2012 (Actioned)
55	Improve communication with transient and non-based operators/users to ensure environmental and operational procedures are understood and adhered to	A-F	2011 (Actioned)

***Noise Problem**: A - Night operations; B – Noisier aircraft; C – Track-keeping; D – Arriving aircraft; E – Preservation of quiet areas; F – Westerly departures; G – Mitigation and compensation.*

Actioned during 2012

Action 36: 23rd May 2012 a meeting was held with NTSC members to discuss KPI targets. It was agreed that the actions don't lend themselves well to specific targets, but any progress updates would be reported on in the AMR (see Action 37).

Action 37: Continuous Descent Approach (CDA) targets have been set for Air Traffic Control. This target has been set at 90% over 24 hours, and performance against this target is reported quarterly to LLACC via the Noise and Track Sub-Committee.

Action 54: The TraVis flight tracking system was introduced to London Luton Airport's website in January 2012. This facility allows members of the public to view arriving and departing aircraft in the area as well as aircraft noise events. TraVis provides a representational visual look at London Luton Airport flights but it is not intended as an information and/or trend analysis tool.

Postponed during 2012

Action 26: This has been postponed due to the fact that RNAV-1 procedures have not yet been introduced on any of the routes out of London Luton Airport. An RNAV-1 trial is planned on the Clacton/Dover/Detling Runway 26 departures during 2013, and an Airspace Change Proposal is anticipated to go to consultation at the beginning of 2014.

8. Complaints

8.1. Total Complaints relating to LLA aircraft operations

	2011	2012
Total No. of Complaints relating to LLA aircraft operations	733	938
No. of Complainants	305	355
No. of Events (eliciting a complaint)	1,770	3,079 (1,594*)
Average No. of Complaints per Complainant	*2.4*	*2.6*
Average No. of Events per Complainant	*5.8*	*8.7 (4.5*)*
Average No. of Events per Complaint	*2.4*	*3.3 (1.7*)*
No. of Aircraft Movements per Complaint	*135*	*105*
No. of Aircraft Movements per Event	*56*	*32 (62*)*

** Figures excluding 1,485 events reported by 4 individuals, two residents in Harpenden and two individuals from the same household in Redbourn.*

During 2012 a total of 938 complaints (on average 3 complaints per 24 hours) relating to LLA aircraft operations were received by the Airfield Environment Office, compared with 733 in 2011.

A further 75 complaints (190 events) not attributable to LLA traffic were received throughout 2012 compared with 69 (503 events) last year. 16 of these complaints (21%) related to non-LLA helicopters operating to/from other airfields.

A total of 355 individuals reported concerns to the Airfield Environment Office during the year, in comparison with 305 in 2011. Statistics identify that 106 individuals (30%) were reporting concerns for the first time and that 232 of the complainants (65%) contacted the airport only once during the year.

Within the 938 complaints received during the year, a total of 3,079 events (eliciting a complaint) were listed, compared to 1,770 events in 2011.

During 2012 a further 544 events were reported by one other individual in Harpenden but, in agreement with the LLACC, these events are no longer included in statistics although a total of 26 complaints from this complainant, reporting general disturbance and frequency (both day and night), have been incorporated in all statistics.

8.1.1. Flamstead & Redbourn concerns

As from 1st July 2012 all complaints from Flamstead & Redbourn residents have been included in the general complaint statistics within this report (as agreed with LLACC). However, those e-mails/voicemails received from these two villages between 1st January and 30th June 2012, reporting continued disturbance from westerly departures after the end of the easyJet trial, have been logged separately for statistical purposes only.

Throughout the period January to June 2012 the Airport received a total of 226 e-mails/telephone calls from 40 households in Flamstead and 320 e-mails/telephone calls from 16 households in Redbourn, all reporting ongoing disturbance from westerly departures since the trial ended on 6th November 2011. In agreement with Flamstead Parish Council and Redbourn Parish Council, the Airport provided regular progress updates to local residents via designated Parish Council representatives.

The easyJet trial in question, to help contain departure flightpaths within the existing Noise Preferential Route (NPR) corridor for the 26 Clacton/Dover/Detling flight route during periods of westerly operations, was carried out for a period of six months, between 5th May 2011 and 6th November 2011. At that time, having successfully gathered sufficient data to identify an optimum flightpath, within the NPR swathe, avoiding all the most densely populated areas south of the airfield, all airlines reverted to pre-trial procedures.

Discussions with the Directorate of Airspace Policy (DAP) were then held, with a view to proceeding with the design of a new route structure based on results of the trial. Regular SID/NPR Task Force meetings considered several alternative solutions and following a successful simulation session in September 2012, the Airport moved onto the next phase of the regulatory CAP 725 consultation process which needs to be carried out before a formal Airspace Change Proposal can be submitted to DAP for approval.

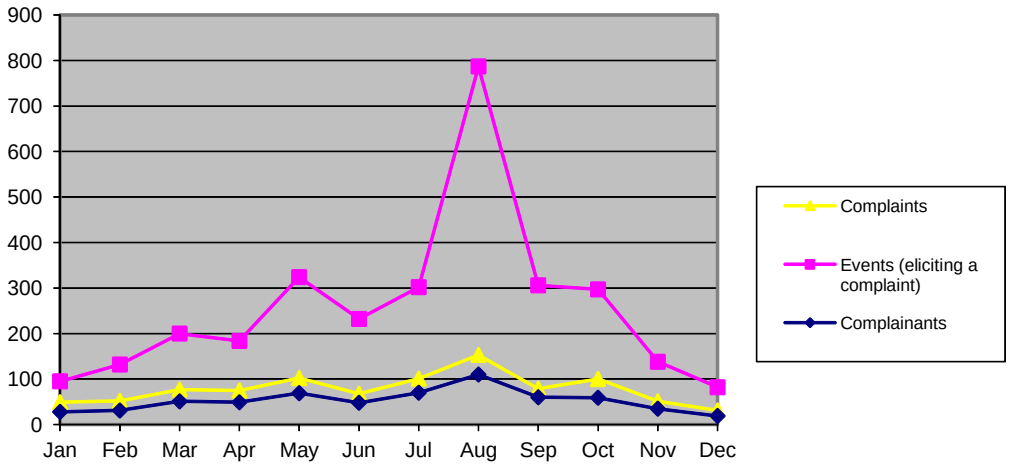
A Framework Briefing Session was held with the Civil Aviation Authority at the beginning of October 2012 to ensure due process was being followed and to outline plans for a 'live' trial, in accordance with CAP 670 guidelines, to ensure that the final draft route design could be flown by all operators. Before a 'live' trial incorporating all airlines could be carried out, further liaison with National Air Traffic Services was required and a detailed technical design of the proposed route published in the Luton AIP. Full details were then provided to all the Luton operators participating in the trial so that their various database providers could update the relevant onboard Flight Management Systems. Regular progress updates were provided to LLACC, the Noise & Track Sub-Committee and to those affected communities regarding proposals for a 'live' RNAV1 flight trial to take place in the early part of 2013, together with a corresponding noise monitoring programme.

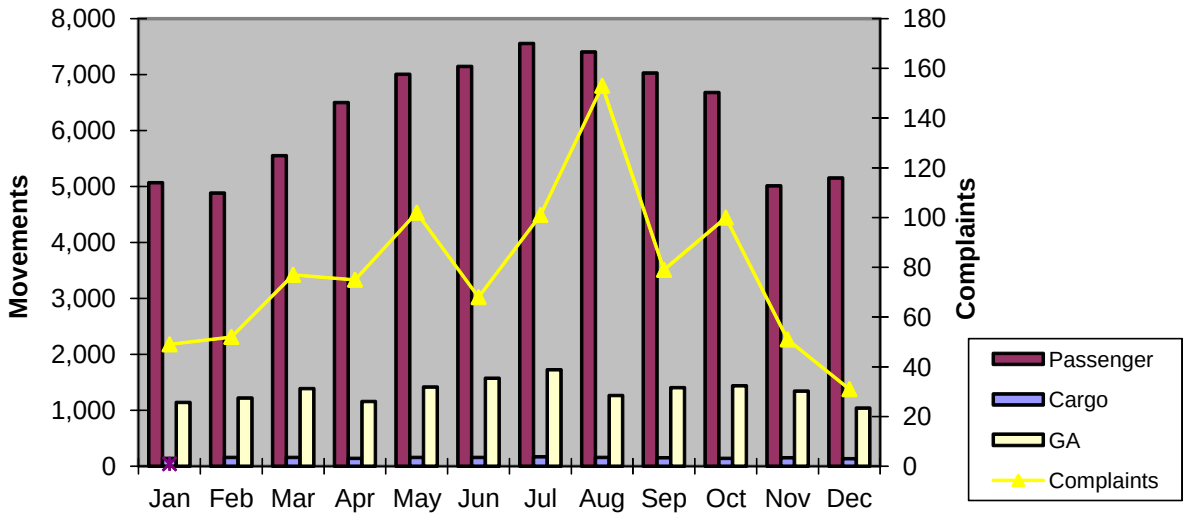
8.2. Monthly complaint statistics

	Complaints	Events (eliciting a complaint)	Complainants
Jan	49	95	28
Feb	52	132	31
Mar	77	200	51
Apr	75	184	49
May	102	324	69
Jun	68	232	48
Jul	101	302	70
Aug	153	787	110
Sep	79	306	60
Oct	100	297	59
Nov	51	138	35
Dec	31	82	19
Totals	**938**	**3,079**	**355***

* This total number of complainants annually takes into account a number of repeat complainants.

As from 1st July 2012 all complaints from Flamstead & Redbourn have been included in the general complaints statistics (as agreed with LLACC), whilst those emails/voicemails received from these two villages up to 30th June 2012 have been logged for statistical purposes only.





8.3. Breakdown of Reported Disturbance

It is important to note that the reasons detailed below are those reported by the complainant and not the result of any subsequent investigation.

Disturbance	Day	Night	General*	Total
Aircraft Noise	593	207	77	**877**
Off Track	220	26	7	**253**
Low-Flying	196	30	19	**245**
Frequency	76	11	19	**106**
Air Quality	1	0	0	**1**
Safety	1	0	0	**1**

It should be noted that complaints received may relate to more than one type of disturbance (i.e. noisy, low and off track) and the above figures will therefore not correlate to the total number of complaints.

** The 'General' category relates to non-specific reports of disturbance.*

8.4. Areas of Reported Concerns

Reported Concerns	No. of Complaints	% of Total Complaints
Departures - Westerly	509	54.3%
Departures - Easterly	148	15.8%
Arrivals - Easterly	124	13.2%
Frequency/Gen. Distrubance	66	7.1%
Arrivals - Westerly	38	4.1%
Go - Arounds	36	3.8%
Ground Noise	6	0.6%
Positioning Flights	5	0.5%
Helicopters	3	0.3%
Engine Ground Runs	2	0.2%
Air Quality	1	0.1%
Total	**938**	**100%**

During the year 144 individuals reported a total of 286 complaints concerning night noise disturbance from LLA operations (on average less than one complaint per night). This amounts to 30% of all complaints received in 2012, compared to 229 night noise complaints during 2011 (from 117 individuals). It should be noted that 26% of the reported night disturbance reports during 2012 originated from just four individuals, two in Harpenden, one in Hemel Hempstead & one in Pepperstock. A further 26 complaints reported disturbance relating to overflights to or from other airports during the night period.

Within the 509 complaints concerning westerly departures 144 were of a general nature, 344 to specific aircraft following the Clacton/Dover/Detling route, nine to an aircraft on the Compton route and six following the Olney heading. Six other complaints involved positioning flights following off-airways flight routes.

Of the 148 complaints attributed to easterly departures 23 were of a general nature, 105 to specific aircraft following the Compton heading, 14 to aircraft on the Olney flight route and one related to an aircraft on the Clacton/Dover/Detling heading.

Whilst 71 of the 124 complaints concerning easterly arrivals reported general disturbance, 53 related specifically to aircraft on approach to land from the Lorel Reporting Point.

8.5. Nature of Disturbance

Noise was cited as a main disturbance in 93% of complaints and 27% of complaints involved aircraft being perceived as **off-track.** Concerns of aircraft flying **low** were reported in 26% of complaints and in 11% of complaints the **frequency** of operations was reported. It should be noted that complaints received may relate to more than one type of disturbance (i.e. noisy, low and off-track).

Of the 938 complaints relating to LLA aircraft operations registered during the year 680 complaints (72%) were clearly correlated to a specific aircraft type although many complaints were of a general nature.

8.6. Complaints by Aircraft Type

Aircraft Type*	No. of correlated complaints	% of Total complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per correlated complaint**
A320/A321 (Monarch/Wizzair/easyJet/GA)	185	19.7%	26,777	145
A300 (MNG Cargo/DHL)	110	11.7%	1,111	10
A319 (easyJet)	90	9.6%	27,548	306
B737-800 (Ryanair/Thomsonfly/GA)	65	6.9%	10,965	169
B737-400 (MNG Cargo/Blue Air)	61	6.5%	1,158	19
B757 (El Al/Thomsonfly/DHL)	37	3.9%	1,481	40
ATP (Atlantic Airlines)	22	2.3%	582	26
B737-200 (GA)	21	2.2%	80	4
GLF4/5 (GA)	17	1.8%	1,833	108
Global Express (GA)	12	1.3%	1,857	155
GLF2/GLF3 (GA)	5	0.5%	45	9
Helicopter	3	0.3%	598	199
Other Private Aircraft	*43*	4.6%	*16,166*	*376*
Other Cargo Operations	*8*	0.9%	*184*	*23*
Other Passenger Operations	*1*	0.1%	*2*	*2*
Total	**680**	**72.5%**	**98,763**	**145**

* Operators in brackets refer to the predominant operator(s) of aircraft type.

** This is the total number of aircraft movements per correlated complaint
i.e. 98,763 movements / 680 correlated complaints = 145

8.7. Origin of Complaints

The chart below identifies the areas around the Airport from which complaints were received during 2012:

Location	Complaints	Events* (eliciting a complaint)	Complainants	*Average complaints per complainant*	*Average Events per Complainant*
Aley Green	1	1	1	*1*	*1*
Ardeley	1	0	1	*1*	*0*
Ayot St Lawrence	14	1	1	*14*	*1*
Bendish	5	4	3	*1.7*	*1.3*
Berkhamsted	2	0	2	*1*	*0*
Blackmore End	4	5	3	*1.3*	*1.7*
Breachwood Green	7	4	7	*1*	*0.6*
Buntingford	1	0	1	*1*	*0*
Caddington	25	25	13	*1.9*	*1.8*
Cheddington	1	0	1	*1*	*0*
Chesham	3	3	2	*1.5*	*1.5*
Cockernhoe	1	1	1	*1*	*1*
Codicote	2	2	2	*1*	*1*
Dagnall	6	4	4	*1.5*	*1*
Diamond End	1	1	1	*1*	*1*
Dunsmore, Wendover,	1	1	1	*1*	*1*
Eaton Bray	11	13	6	*1.8*	*6.5*
Edlesborough	8	10	5	*1.6*	*2*
Flamstead	75	201	34	*2.2*	*5.9*
Gaddesden Row	1	1	1	*1*	*1*
Gubblecote	1	2	1	*1*	*2*
Gustard Wood	14	17	2	*7*	*8.5*
Harpenden **	237	1,498	48	*5*	*31*
Heath & Reach	5	12	1	*5*	*12*
Hemel Hempstead	51	95	5	*10.2*	*19*
Hitchin	21	37	4	*5.3*	*9.3*
Houghton Regis	2	2	1	*2*	*2*
Hulcott	2	0	1	*2*	*0*
Kensworth	20	33	10	*2*	*3.3*
Kimpton	2	1	2	*1*	*0.5*

Location	Complaints	Events* (eliciting a complaint)	Complainants	*Average complaints per complainant*	*Average Events per Complainant*
Kings Walden	7	8	2	*3.5*	*4*
Knebworth	4	1	3	*1.3*	*0.3*
Leighton Buzzard	4	8	3	*1.3*	*2.7*
Little Gaddesden	13	11	7	*1.9*	*1.6*
Long Marston	1	3	1	*1*	*3*
Luton	36	45	26	*1.4*	*1.7*
Markyate	19	18	12	*1.6*	*1.5*
Melbourn	1	0	1	*1*	*0*
Mentmore	20	142	3	*6.7*	*47.3*
Nettleden	1	0	1	*1*	*0*
Northall	1	0	1	*1*	*0*
Pepperstock	25	72	6	*4.2*	*12*
Redbourn**	102	564	34	*3*	*16.6*
Royston	1	1	1	*1*	*1*
Slapton	1	1	1	*1*	*1*
Slip End	8	9	5	*1.6*	*1.8*
St Albans	62	74	26	*2.4*	*2.8*
Stevenage	13	6	12	*1.1*	*0.5*
Studham	5	4	5	*1*	*0.8*
Tebworth	2	1	1	*2*	*1*
Tring	11	30	2	*5.5*	*15*
Walkern	7	16	4	*1.8*	*4*
Welwyn	1	0	1	*1*	*0*
Welwyn Garden City	1	0	1	*1*	*0*
Wendover	1	0	1	*1*	*0*
Wheathampstead	48	69	20	*2.4*	*3.5*
Whipsnade	4	5	2	*2*	*2.5*
Whitwell	12	15	6	*2*	*2.5*
Woodside	2	2	2	*1*	*1*
Totals	**938**	**3,079**	**355**	***2.6***	***8.7***

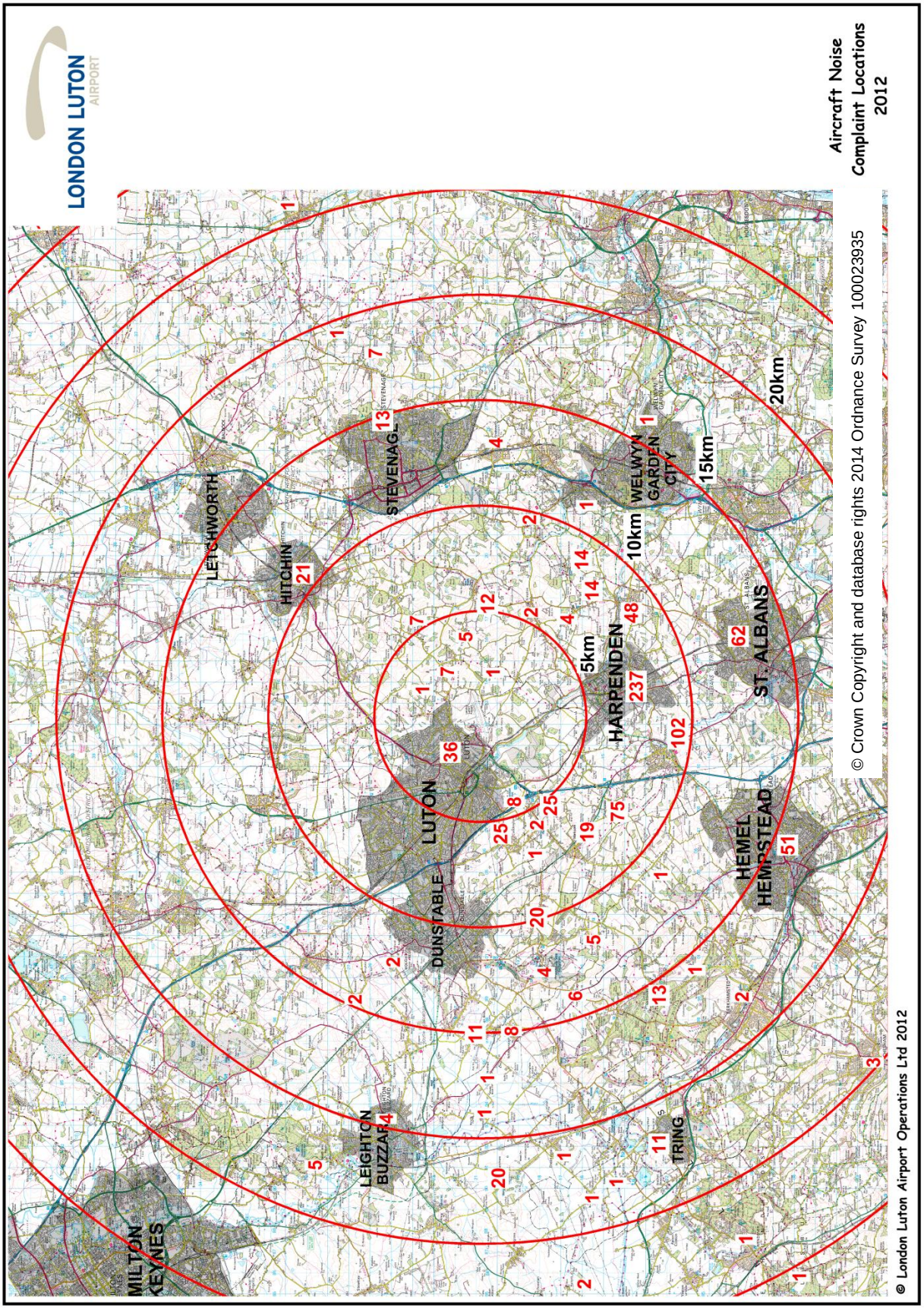
* Where complaints are of a general nature (i.e. frequency or general disturbance), individual events may not have been specified.

** A total of 63 complaints (1,265 events) were reported by just two residents of Harpenden and 30 complaints (220 events) were reported by two individuals from the same household in Redbourn.

Furthermore one individual in Harpenden has continued to report a large number of events throughout the year. Whilst these events are no longer included in statistics (in agreement with LLACC) the complaints received from this individual (reporting general disturbance and frequency) are still included in the complaints total and this individual is included in the complainants total.

It should also be noted that a number of residents from both Flamstead and Redbourn continued to report ongoing disturbance from westerly departures, after the six month easyJet trial to help tighten track-keeping on the 26 Clacton/Dover/Detling flight route ended on 6th November 2011. These concerns were all logged separately for statistical purposes only, up until the end of June 2012 (a total of 546 complaints from these two villages). As from 1st July 2012 all complaints from Flamstead and Redbourn were included in the general complaint statistics (in agreement with LLACC).

8.8. Location of Complaints 2012



8.9. Method of Complaint Receipt

How Received	% of Total Complaints
E-mail	76%
Telephone	23%
Fax	0.5%
Letter	0.5%

Any concerns relating to LLA aircraft operations can be reported to the Airfield Environment Office by the following means:

Postal Address: **Airfield Environment Office**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY

Direct Telephone: (01582) 395382 (24 hours)

Direct email*: noise@ltn.aero

***** A link also exists on the www.london-luton.co.uk website, providing a template for reporting concerns relating to aircraft activity, which is then sent directly to the Airfield Environment Office for logging, investigation and response.

8.10. Community Relations

Community Visits to the Airport

Invitations are often extended to local residents and LLACC members to visit the Airfield Environment Office for a demonstration of the Aircraft Noise & Track Monitoring System, to discuss specific concerns and to view for themselves flight tracks of LLA aircraft operations in their area.

At the beginning of January 2012 a representative from Flamstead visited the Airport to discuss concerns relating to the impact of increased noise disturbance being experienced in that area.

During February 2012 the Airport hosted two other separate visits for representatives from Flamstead and Redbourn to discuss progress, following on from the easyJet trial in 2011 to help contain departure flightpaths within the existing Noise Preferential Route (NPR) corridor for the 26 Clacton/Dover/Detling flight route.

During May, June and August 2012, following specific requests from Flamstead Parish Council, Redbourn Parish Council, HarpendenSky and HALE, the Airport hosted four separate meetings for the representatives in question, to give a progress update on developments and work in progress since the end of the easyJet trial.

At the beginning of October 2012 the Airport hosted a meeting with representatives from Flamstead Parish Council to provide a further update on developments with regard to the design of an RNAV1 (formerly known as PRNAV) departure route for the 26 Clacton/Dover/Detling heading. The Operations Director confirmed that a Framework Briefing Session had already recently been held with DAP to ensure that appropriate CAA guidelines were being followed after a further, successful simulation exercise by easyJet in September 2012.

The Airport also hosted a work experience student during June 2012, giving them an insight into the work involved within the Airfield Environment Office.

Airport Visits to the Community

Following on from the publication of the LLAOL Master Plan document on 15th March 2012, the Managing Director and Operations Director accepted a number of invitations to visit Local Authority representatives to discuss the proposals in more detail.

At the beginning of September 2012 the Airport published a revised Master Plan document, inviting comments on proposed development plans throughout a six week pre-application consultation period. A schedule of exhibitions in various locations was organised, with high level airport representatives in attendance to answer any specific questions from local residents.

The Managing Director and Operations Director also accepted invitations to attend further meetings with Local Authorities and other interested parties to discuss future airport development plans outlined in the revised Master Plan document.

9. *Employment*

9.1. Introduction

Employment at and surrounding LLA contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the Airport. Thus, any analysis of the Airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the Airport boundary has been conducted, the results of which are summarised below.

9.2. Methodology

The methodology for this year's analysis is the same as for the previous year. Administrative data sources were used to conduct the survey instead of sending out questionnaires as was the case up to the 2009 survey. The methodology was changed from previous years to be more cost and time efficient in the use of data which was both already purchased and covered the majority of the same information which the survey had historically asked for. The other major advantage was that the Standard Industrial Classification was already listed on the data source, thus eliminating the need for businesses to self-classify.

The Inter Departmental Business Register (IDBR) was used as the main data source, this Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted. (source: ONS website www.statistics.gov.uk).

An initial list was received from LLA of companies within their boundary. The listing was matched against the IDBR. Companies outside the Airport boundary were identified by the street names/areas as follows:

Spittlesea Road
Part of Frank Lester Way
President Way
Wigmore House
Part of Airport Way
Barratt Industrial Park
Airport Executive Park

Eleven companies who appeared on the list but not the IDBR had imputed figures gained from airport colleagues and/or planning applications.

The industrial classification used has been updated to the SIC 2007 coding framework used by the ONS. This means that the coding will have changed from that found up to the 2009 report. Revision is necessary due to "the need to adapt the classifications to changes in the world economy. The revised classifications reflect the growing importance of service activities in the economy over the last 15 years, mainly due to the developments in information and communication technologies (ICT)". (Source: UK Standard Industrial Classification of Economic Activities 2007 (SIC 2007) Structure and explanatory notes, http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html).

9.3. Total Employment in and around the Airport

Using main section headings from the Standard Industrial Classification 2007 (SIC 2007), the following was found. Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	400
Administrative and Support Service Activities	1,800
Financial and Insurance Activities	#
Human Health and Social Work Activities	#
Information and Communication	#
Manufacturing	1,300
Professional, Scientific and Technical Activities	#
Public Administration & Defence; Compulsory Social Security	#
Real Estate Activities	#
Transportation and Storage	3,800
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	600
Grand Total	**8,200**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data

Due to confidentiality issues we are bound by ONS protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

For the purposes of full interpretation of the results, it should be noted that the sections used in the pre-2010 report map to the new sections as follows:

Previous Codes	New Codes
Forwarding of Freight	Transportation and Storage
General Public Service Activities	Public Administration & Defence etc
Hotels and Restaurants	Accommodation & Food Service Activities
Non Scheduled Passenger Air Transport	Transportation and Storage
Other Supporting Air Transport Activities	Transportation and Storage
Public (Scheduled) Passenger Air Transport	Transportation and Storage
Renting of Automobiles	Administrative and Support Service Activities
Retail Trade	Wholesale and Retail Trade etc
Tour Operators	Administrative and Support Service etc
Travel Agencies	Administrative and Support Service etc
Wholesale of Petroleum Products	Wholesale and Retail Trade etc
Miscellaneous (Airline/Aviation Related)	Not Used
Miscellaneous (Non Airline/Aviation Related)	Not Used

Note: Individual companies may have moved within the coding structure

9.4. Employment By Working Pattern

The IDBR provides employment figures by full and part time working pattern. The following is found:

Standard Industrial Classification 2007, Section Names	Full Time Employees
Accommodation and Food Service Activities	#
Administrative and Support Service Activities	1,500
Financial and Insurance Activities	#
Human Health and Social Work Activities	#
Information and Communication	#
Manufacturing	1,300
Professional, Scientific and Technical Activities	#
Public Administration & Defence; Compulsory Social Security	#
Real Estate Activities	#
Transportation and Storage	3,400
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	600
Grand Total	**7,000**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data

Standard Industrial Classification 2007, Section Names	Part Time Employees
Accommodation and Food Service Activities	200
Administrative and Support Service Activities	200
Financial and Insurance Activities	#
Human Health and Social Work Activities	#
Information and Communication	#
Manufacturing	#
Professional, Scientific and Technical Activities	#
Public Administration & Defence; Compulsory Social Security	#
Real Estate Activities	#
Transportation and Storage	400
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	#
Grand Total	**900**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data.

There were several companies who did not state their full/part time working split on the IDBR therefore the figures above do not add to the total employment figures.

The percentage split of full/part time employees found at the Airport, compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of Luton Airport	85.0%	10.5%
Luton UA	76.9% (confidence limit 3.3)	23.1% (confidence limit 3.3)

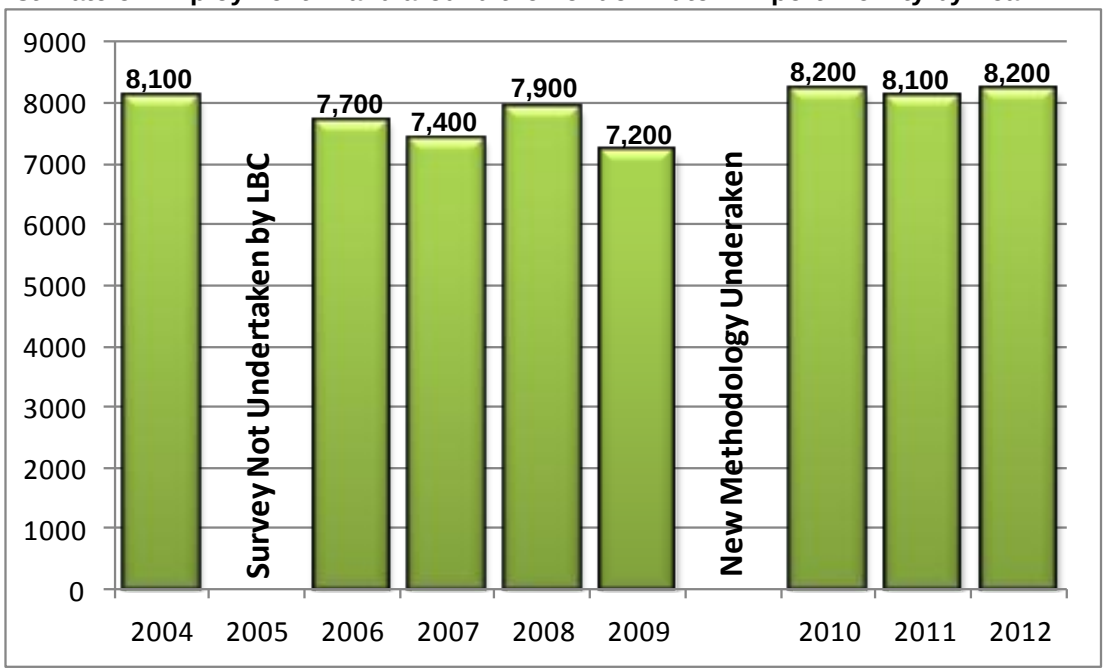
Source for Luton UA Figures: Annual Population Survey, Office for National Statistics Jan 2012 – Dec 2012, latest data. Figures are percentages of those in employment.

Therefore, the full and part time working patterns in the vicinity of the Airport differs from that found within Luton as a whole, with considerably less part time working and more full time workers found overall. This may, however, change if looked at per industry sector but the figures are too small to make any meaningful comparison at this level.

9.5. Time Series

As previously stated, due to the methodological differences employed between last year's estimate and previous years, it is not possible to directly compare the total employment figures over time. However, in the interest of completeness, the following figures from previous years can be used as a proxy measure of changing patterns.

Estimate of Employment in and around the London Luton Airport Vicinity by Year



Source: AMR Employment Surveys 2004 and 2006-2012

9.6. Conclusion

In conclusion, there are around 8,200 employees working in the vicinity of the Airport which is slightly more than the 2011 estimate. Whether this pattern is set to continue will be seen in future estimates. Please note that due to confidentiality issues we are bound by ONS protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

10. Surface Access

10.1. Road Traffic

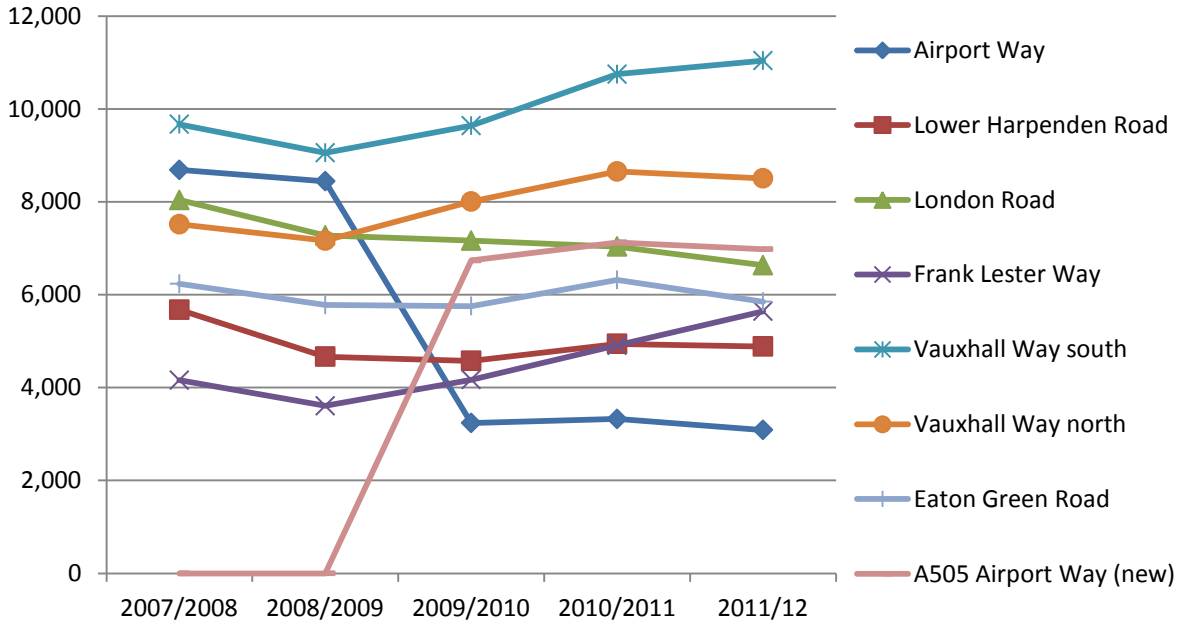
This is the summer 2012 traffic count conducted 15th – 22nd October 2012. This period is a little later than previous counts (generally late August-mid September). However, this period is comparable with previous summer traffic counts and avoids any significant period where changes in traffic characteristics occur.

The table and graph below show an increase in 12hr/5day traffic flows on 2 of the 8 monitored roads, the highest increase in traffic count is +734 (+13%) on Frank Lester Way. The most significant decrease in traffic count is -468 (-8%) on Eaton Green Road. The overall marginal traffic flow compared with last year in these observation points is -431 (0.8%).

Summer 2007 – 2012 Traffic Count (Average 12 hrs/5 days)

	Map ref	2007/2008	2008/2009	2009/2010	2010/2011	2011/12
Airport Way	*599*	8,685	8,443	3,237	3,323	3,088
Lower Harpenden Road	*106*	5,676	4,666	4,576	4,942	4,885
London Road	*393*	8,038	7,277	7,163	7,037	6,634
Frank Lester Way	*445*	4,158	3,606	4,170	4,908	5,642
Vauxhall Way south	*520*	9,670	9,055	9,638	10,746	11,039
Vauxhall Way north	*603*	7,516	7,164	8,005	8,652	8,505
Eaton Green Road	*677*	6,234	5,780	5,755	6,317	5,849
A505 Airport Way (new)	*925*	0*	0*	6,735	7,127	6,979

Summer 2007 – 2012 Traffic Count (Average 12 hrs/5 days)



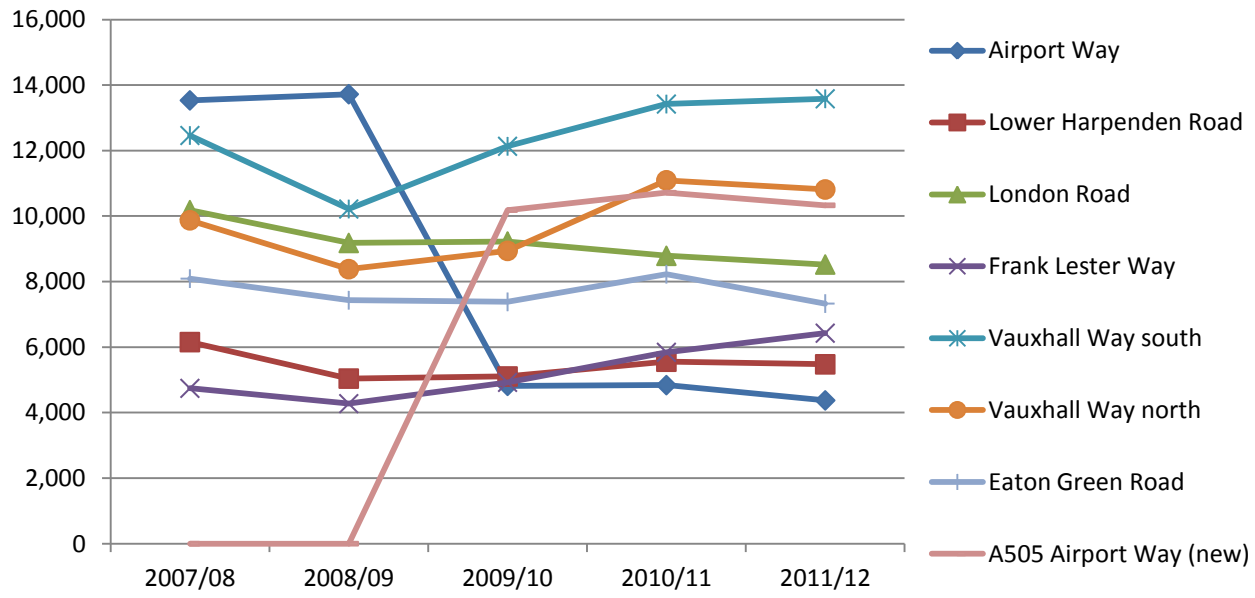
For the 24-hour week (24/7), the table and graph below reveal similar patterns to the 12hr/5day traffic count. The highest increase in traffic count is +584 (9.1%) on Frank Lester Way, while the most significant decrease in traffic count is -896 (-12.2%) on Eaton Green Road. The overall marginal traffic flow compared with last year in these observation points is -1,626 (-3.7%).

During the period of this traffic survey, road works were ongoing along Vauxhall Way, which may account for the changes in traffic pattern as drivers may have diverted from Eaton Green Road and along Frank Lester Way to avoid the road works.

Summer 2007 - 2012 Traffic Counts (Average 24 hrs/7 day)

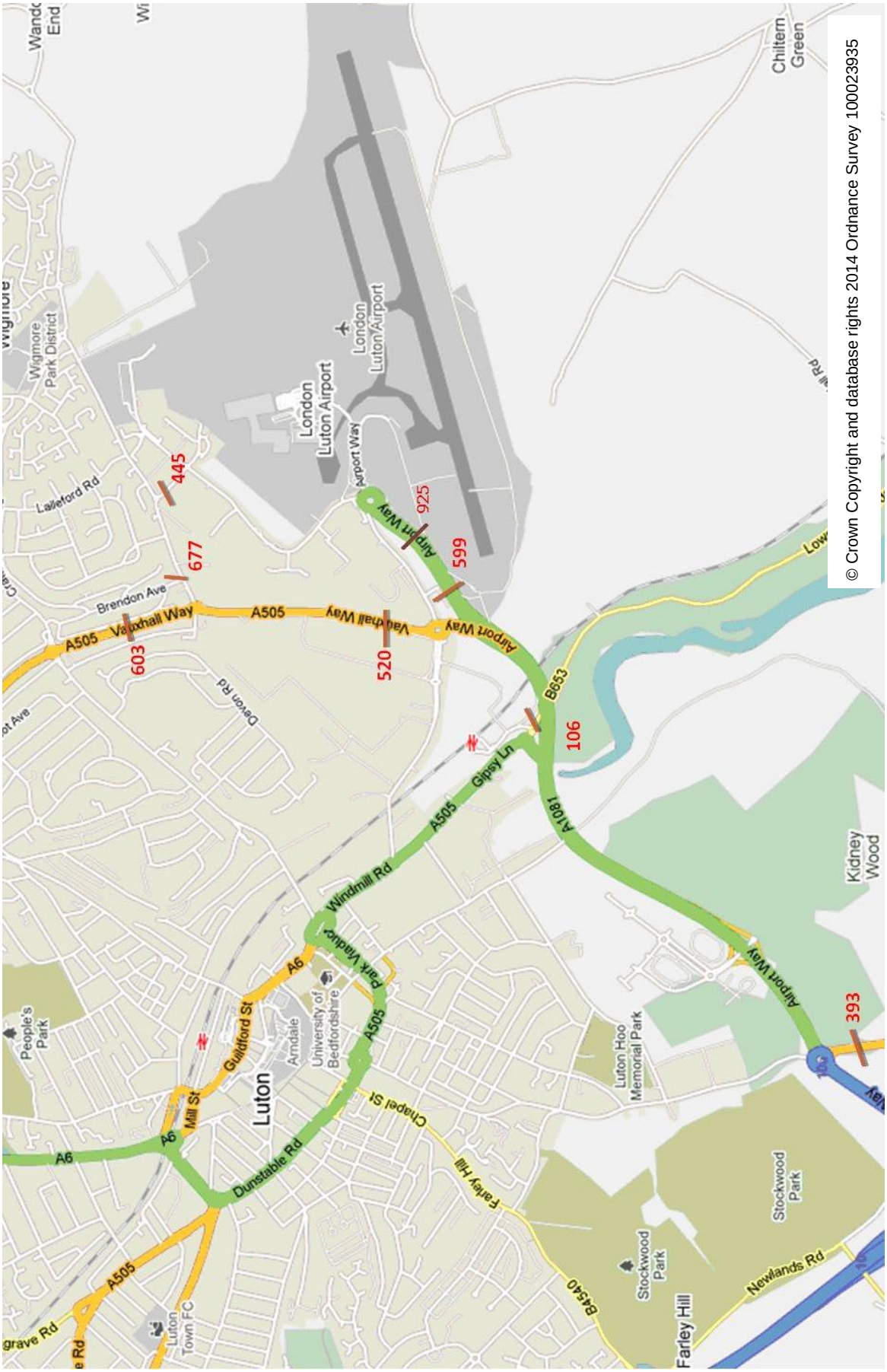
	Map ref	2007/08	2008/09	2009/10	2010/11	2011/12
Airport Way	*599*	13,533	13,721	4,818	4,840	4,374
Lower Harpenden Road	*106*	6,154	5,040	5,104	5,555	5,475
London Road	*393*	10,183	9,181	9,225	8,788	8,523
Frank Lester Way	*445*	4,742	4,275	4,925	5,842	6,426
Vauxhall Way south	*520*	12,461	10,217	12,131	13,421	13,582
Vauxhall Way north	*603*	9,872	8,380	8,939	11,093	10,813
Eaton Green Road	*677*	8,091	7,431	7,383	8,226	7,330
A505 Airport Way (new)	*925*	0	0	10,185	10,714	10,330

Summer 2007 - 2012 Traffic Counts (Average 24 hrs/7 day)



Traffic flow along Airport Way has consistently decreased over the last four years, and after a slight increase last year; this has decreased further this year. This data indicates that Vauxhall Way axis accommodates the highest traffic volume in this vicinity. This is due to its strategic location and connectivity to other district and arterial roads into and out of Luton. It is likely that the completion of East Luton Corridor engineering operations and increased activities in and around London Luton Airport have resulted in significant redistribution of traffic flow in the area. See the map below for indicative location of these observation points.

Local Highway Network - Traffic flow observation points



10.2. Public Transport Services

The table below shows the number of scheduled train services per week from Luton Airport Parkway Station have increased above that of 2011.

The winter timetable for 2011/12 covered the period leading up to the Jubilee and Olympics and showed an increase in the number of First Capital services in the winter timetable. This increased number continued through 2012.

Scheduled train services from Luton Airport Parkway Station

Number of services per 7 days	Summer 11	Winter 11/12	Summer 12	Winter 12/13
Direction				
Northbound	892	1,063	1,063	1063
Southbound	891	1,032	1,042	1037
TOTAL	**1,783**	**2,095**	**2,105**	**2,100**

Most National Express services make scheduled stops within the Town Centre also allowing for patronage between the Town Centre and the Airport.

Local bus services normally show a significant increase over the summer period due to the seasonal variation in services. However with the Jubilee and Olympics taking place in 2012 services were increased and maintained for the majority of the year.

The rise in services calling at the Airport is helping to promote public transport as a means of getting to and from the Airport from either local destinations or destinations a little further afield.

Bus and coach services from London Luton Airport

Number of Services per 7 days	Summer 2011	Winter 2011/12	Summer 2012	Winter 2012/13
LOCAL				
Luton Railway Station	302	319	319	319
Others	1,706	1,498	1,830	1,830
National				
Central London	420	454	454	454
Others	637	700	700	700
TOTAL	**3,065**	**2,971**	**3,303**	**3,303**

Number of Services per Week	Summer 2011	Winter 2011/12	Summer 2012	Winter 2012/13
AIRPORT- AIRPORT LINK				
Birmingham	77	91	91	91
London Gatwick	70	70	70	70
London Heathrow	133	154	154	154
London Stansted	182	182	182	182
Manchester	7	7	7	7
TOTAL*	**469**	**504**	**504**	**504**

**As some services call at more than one airport, the total number of actual departures will be less than the sum of the disaggregated services to each airport.*
This information represents a general guide to the number of services based on the information available from the various bus operators.

10.3. Additional Information

LLAOL published its first Airport Surface Access Strategy (ASAS) in 2000 in line with the recommendations of the 1998 Integrated Transport White Paper. This strategy set targets to encourage air passengers and employees to access the Airport using more sustainable modes. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework. An interim ASAS was published in 2009 to cover the period to 2011.

In January 2012 LLAOL published its *Airport Surface Access Strategy* 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees.

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLAOL uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table below shows the weighted CAA data for 2005 to 2011. The CAA statistics suggest that 31% of airport passengers now choose to use public transport.

Passengers travelling to the Airport by various modes (CAA Data)

%	2007	2008	2009	2010	2011
Private Car – Drop Off	25	26	28	27	27
Private Car – Park	21	27	27	24	23
Rail	17	19	17	17	15
Bus/Coach	12	14	14	15	16
Taxi	15	14	14	16	18

10.4. Car Parking

Whilst the Surface Access Strategy seeks to encourage passengers and staff to travel to LLA by sustainable means, there will always be some passengers and staff who have no option but to travel by car. Policies LLA1 and LLA2 of the Borough of Luton Local Plan set out the criteria for airport car parking, both on and off site.

The number of staff car parking spaces remained unchanged during 2012, whilst passenger car parking capacity decreased slightly. Priority parking spaces were however introduced.

On site Car Parks or Car Parks within the Airport boundary

Passenger	Spaces	Area m²
Short Term	1,089	39,373
Mid Term	2,301	65,000
Long Term	3,359	72,150
Priority Parking	170	5,100
Passenger Total	***6,919***	***181,623***
Staff Total	***4,730***	***97,270***
Total	**11,649**	**278,893**

Policy LLA2 seeks to resist off site airport related parking, unless in exceptional circumstances. However, the existence of these sites should be acknowledged and monitored. Only authorised car parks are noted in the following table, although others may occur around the airport boundary.

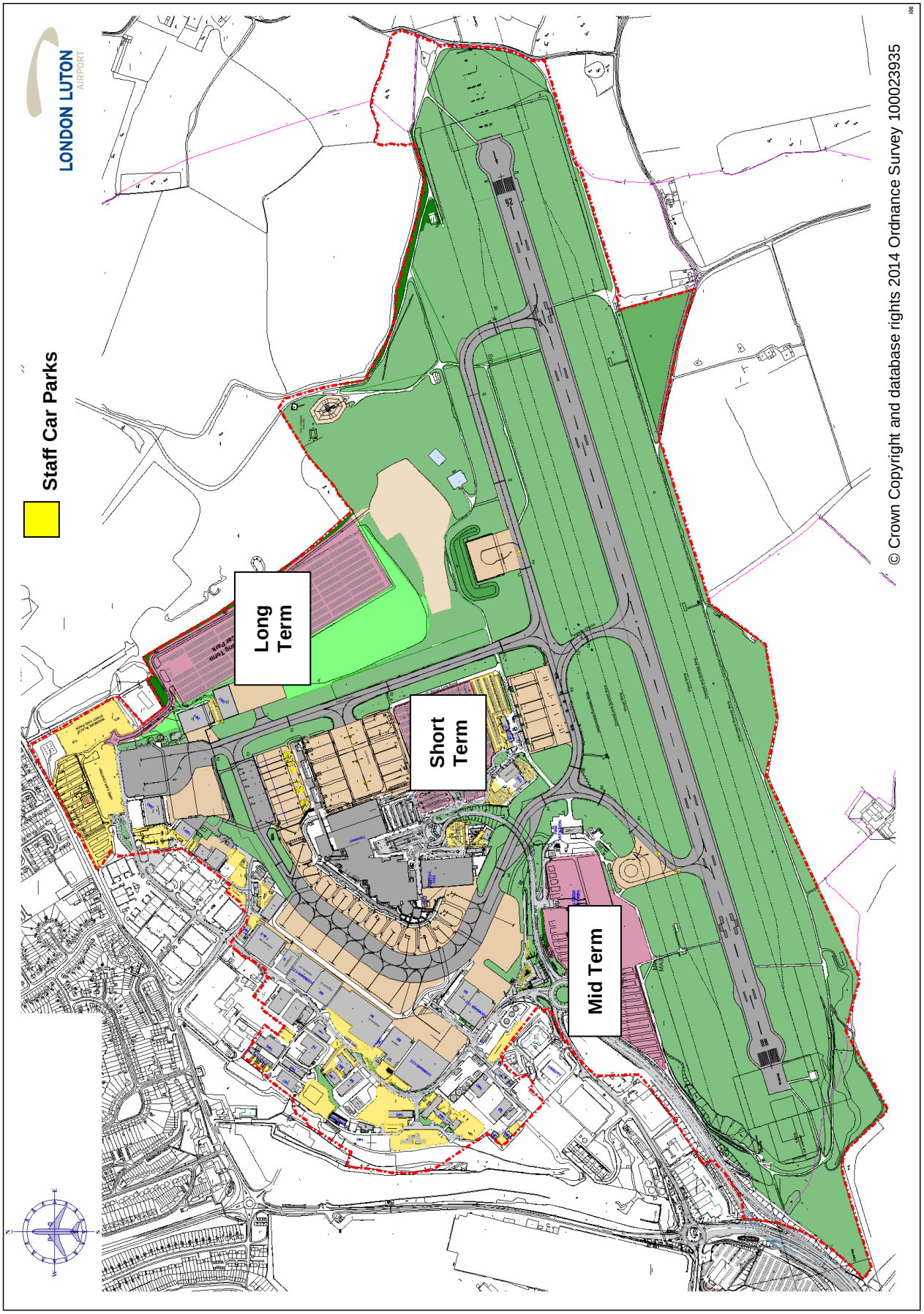
Off site Car Parks or Car Parks outside the airport boundary

Operator	Spaces*	Area ha
Airparks (Slip End)	4,000*	5.97
Central Car Storage	350*	0.56
Airport Carparkz	1500	2.25
Paige Airport Parking	1600	2.4
Airport Park Luton	450	0.68
Total	**7,900**	**11.86**

* Numbers of spaces given relates to the number approved as part of planning conditions imposed at the time of determination of the application.

Please refer to Section 11.7.4 for an update on planning appeals relating to off-site airport car parks.

Location of passenger and staff car parks



11. Planning

11.1. National Aviation Policy

The Government's White Paper "The Future of Air Transport" which was published in December 2003, is the strategic framework document for the development of national airport capacity. This it is expected to be replaced in 2013 as part of the National Aviation Policy Review (APF). A consultation document was published in July 2012.

The Air Transport White Paper had set out in detail which specific developments would be supported at particular airports across the UK, though the Coalition Agreement of May 2010 superseded this in relation to further runways at the major south-east airports. The APF is not expected to provide such detail, but rather sets out the Government's objectives and principles to guide plans and decisions at the local and regional level. The independent Airports Commission (also known as the Davies Commission) will provide recommendations in relation to the scale and timing of any requirements for additional capacity.

The Airports Commission was established in September 2012 with the role of defining the Governments objectives and policies on the impacts of aviation. To date it has heard evidence from a number of parties and carried out a number of consultations on future capacity, climate change and the role of regional airports.

The Commission has provisionally concluded that additional runway capacity will be required in the south east of England in the coming decades. It also will be looking at a mechanism for managing the carbon impact of aviation. Therefore any decision on future airport capacity is likely to be taken after 2015.

11.2. Strategic Planning Policy

In December 2010, the Government announced a review of planning policy, designed to consolidate all Planning Policy Statements (PPS), Circulars and Planning Policy Guidance Notes (PPG) into a singular National Planning Policy Framework (NPPF). Following consultation on a draft in July 2011, the final version was published on 27th March 2012. Local Planning Authorities were given a 12 month transition period to ensure their plans were compliant with the NPPF.

In 2011 the Localism Act was given Royal Assent. This provided enabling powers for the Secretary of State to abolish the regional planning system. The East of England Plan (Revocation) Order 2012 revokes the regional spatial strategy and any direction preserving policies in Old Structure Plans. The Order was made on 6th December 2012 and will come into force on 3rd January 2013. The Localism Act also provided powers for new plan making regulations introduced in 2012 and the preparation and consolidation of plan documents into single Local Plans.

Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. The NPPF must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions. The NPPF focuses on the promotion of sustainable development.

In summary, since the revocation of the East of England Regional Plan, the development plan for the area comprises the NPPF and the Luton Local Plan (2001-2011).

11.3. Local Planning Policy

The Luton and Southern Central Bedfordshire Joint Committee was disbanded in March 2012 following the Secretary of State withdrawing the pre-submission Core Strategy in September 2011. Luton Borough Council Members of the Joint Committee did not support the core strategy document. However, Central Bedfordshire Council has prepared a new Development Strategy largely founded on the approach of the previous joint core strategy as far as it relates to Central Bedfordshire and this plan has undergone a pre-submission consultation, although its progress is halted pending new work on objective housing evidence via a joint Strategic Housing Market Assessment with Luton and other partners within the housing market area. Consequently work commenced on a Local Plan for Luton under the requirements set out within the

NPPF. However, in the interim, the Borough Council's adopted Luton Local Plan (March 2006) remains part of the statutory development plan until replaced when the new local plan is prepared.

Furthermore, the LLA Development Brief (February 2000) sets out detailed proposals for further development at LLA and is adopted by Luton Borough Council as Supplementary Planning Guidance (in September 2001).

The NPPF was published in March 2012 and requires plans to be soundly prepared i.e. positively prepared (evidenced based on objective needs); justified (against reasonable alternatives); effective (deliverable which requires local authorities to adopt an approach under the duty to cooperate on cross boundary matters); and consistent (with national policy).

The publication of the Localism Act in November 2011 signalled an overhaul of the planning system with more emphasis on a national policy framework and local neighbourhood plans.

A work programme for the new Local Plan (Local Development Scheme or LDS) to replace the existing Luton Local Plan was approved by the Council's Executive on 23 January 2012, commencing with evidence gathering. Throughout the process negotiations are required under the 'duty to cooperate' to achieve a satisfactory understanding with neighbouring authorities. This is critical to the soundness of respective local plans.

A six week consultation took place from 25th June to 3rd August 2012 inviting representations on the content of the new local plan. A separate development plan document relating to the Community Infrastructure Levy (CIL) was also to be progressed in parallel with the new local plan.

11.4. Luton and Dunstable Local Transport Plan 2001-2006 (LTP1)

The Local Transport Plan (LTP1) was first submitted to central Government in July 2000. It contained two major transport schemes proposed to serve the south east of Luton, including the Airport: the Luton and Dunstable Busway (LDB) and road and junction improvements in the East Luton Corridor (ELC). The latter received Government approval following a Public Inquiry in 2005 and construction began in July 2006, funded through the first round of the Communities Infrastructure Fund and the second round of the Growth Areas Fund.

The LDB received provisional funding though the LTP capital programme in December 2003 and a Public Inquiry reported favourably upon the scheme in late 2006. A final business case was submitted in December 2009 and construction began in 2010 and is expected to be completed in Autumn 2013.

11.5. Luton-Dunstable-Houghton Regis Local Transport Plan 2006-2011 (LTP2)

The second Luton-Dunstable-Houghton Regis Local Transport Plan was submitted to central Government in March 2006. It includes a long-term strategy, for the period up to 2020. One of the objectives of this strategy is to achieve planned growth at the Airport. Over the period up to 2011 the Plan is structured around a series of 'Shared Priorities', which have been agreed between Central and Local Government: accessibility, air quality, congestion and safety. Of these, accessibility is the most relevant to surface transport serving the Airport.

In addition to continuing support for the LDB and ELC schemes, both of which have now been completed, the LTP2 proposed improvements at Luton Airport Parkway station (providing a new entrance from Kimpton Road) that is consistent with the routeing of the LDB services along Kimpton Road. The Northern entrance to Parkway Station will be opened in early 2013. A footway leads from Kimpton Road direct to platform 1 at the Parkway Station.

The LTP2 also set out a range of other measures to give better access to the Airport, particularly for employees.

11.6. Local Transport Plan for Luton 2011-2026 (LTP3)

The Council was required to submit the third Local Transport Plan (LTP3) to the Government by the end of March 2011 setting out how it would deal with transport matters in and around the town. Whereas the first and second LTPs covered Luton, Dunstable and Houghton Regis, the third plan only covers Luton. The LTP3 comprises two main parts.

The first sets out the long-term Transport Strategy covering the period up to 2026; consistent with the then joint Core Strategy and the Sustainable Communities Strategy. The Council consulted a wide range of partners and stakeholders, including LLAOL, in developing this part of the Plan.

Based on recent trends in both passenger throughput and airport employees at Luton, and taking account of recent changes in government policy relating to other London airports, the LTP3 strategy sets out anticipated passenger numbers of between 15.5mppa and 18 mppa by 2026, together with an additional 3000 employees over the same period.

The *Airport Surface Access Strategy* (*ASAS*) 2012-2017 was published by the Airport in January 2012. It is the airport operator's intention to improve access to the Airport and promote longer term targets to encourage sustainable travel to and from the Airport. The Council will work with the Airport operator to achieve this.

The second part of the LTP3 is the Implementation Plan that sets out local transport schemes and initiatives the Council propose to introduce over the period up to 2014/15. Key elements of the Implementation Plan of relevance to the Airport include:

- a focus on smarter choices and travel by more sustainable modes (walking, cycling, public transport) supported by employee travel plan initiatives (e.g. car share database)
- implementation of a new northern entrance to Luton Airport Parkway Station
- improvement of M1 Junction 10a, and
- extension of Airport Way to serve planned employment sites east of the Airport

Community and Stakeholder consultation on the whole of the Plan and accompanying Strategic Environmental Assessment (SEA) commenced on 24th December 2010 and ended on Monday 14 February 2011. The finalised LTP3 was presented to the Council's Executive and adopted in March 2011.

The M1 Junction 10a improvements were the subject of examination through the Nationally Significant Infrastructure Project procedure under Section 31 of the Planning Act 2008 (as amended).

The application for the M1 J10a Grade Separated Junction was submitted to the Planning Inspectorate on 29th June 2012 and will be heard by the Examining Inspector (as the Examining Authority) commencing on 16th November 2012, closing on 13th May 2013. The Examining Authority will then make his recommendation to the Secretary of State for Transport. It is hoped that the Development Consent Order (DCO) will be confirmed in late 2013. Work is expected to commence in early 2014 and will take around 18 months to complete.

11.7. Developments in and around London Luton Airport

11.7.1 Background

Policy 48 of the Structure Plan 2011 required the long-term growth strategy for the Airport to be subject to a Development Brief. The Development Brief was produced by LLAOL for consultation in February 2000 and subsequently approved as Supplementary Planning Guidance by LBC in September 2001.

The adopted Development Brief is the current framework for planning applications, although the Surface Access Strategy has since been reviewed. A further review was undertaken, and the Interim Airport Surface Access Strategy (ASAS) 2009-2011 was published in August 2009. This document was again subject to review in 2012 and has been replaced by the ASAS 2012 – 2017.

Eventually the new planning system and the provisions of the Aviation Policy Framework (AVF) will supersede current policy. Until that time the existing policies have been saved through the process described above.

Under the Town and Country Planning (General Permitted Development) Order 1995, Schedule 2 Part 18 Class A, LLAOL is able to undertake works within the designated 'operational area' of LLA, without the need for formal planning consent. Under this legislation, permitted development includes:

> *"The carrying out on operational land by a relevant airport operator or its agent of development (including the erection or alteration of an operational building) in connection with the provision of services or facilities at a relevant airport"*
>
> *An operational building is defined as:*
>
> *"A building, other than a hotel, required in connection with the movement or maintenance of aircraft, or with the embarking, disembarking, loading, discharge or transport or passengers, livestock or goods at a relevant airport."*
>
> *Development is not permitted if it involves:*
> - *The construction or extension of a runway;*
> - *The construction of a passenger terminal the floor space of which would exceed 500 square metres;*
> - *The extension or alteration of a passenger terminal, where the floor space of the building as existing at 5th December 1988 or, if built after that date, would be exceeded by more than 15%;*
> - *The erection of a building other than an operational building*
> - *The alteration or reconstruction of a building other than an operational building, where its design or external appearance would be materially affected.*

11.7.2 Planning Applications

On 3rd December 2012, LLAOL submitted a full planning application to LBC for:

> *"... dualling of Airport Way/Airport Approach Road and associated junction improvements, extensions and alterations to the terminal buildings, erection of new departures / arrivals pier and walkway, erection of a pedestrian link building from the short-stay car park to the terminal, extensions and alterations to the mid-term and long-term car parks, construction of a new parallel taxiway, extensions to the existing taxiway parallel to the runway, extensions to existing aircraft parking aprons, improvements to ancillary infrastructure including access and drainage, and demolition of existing structures and enabling works. Outline planning application for the construction of a multi-storey car park and pedestrian link building (all matters reserved)"*

The application is a hybrid application, with full details submitted for all of the development except in relation to the multi-storey car park and pedestrian link building, where all matters are reserved for subsequent determination. The application was accompanied by an Environmental Statement (ES), with a scoping request having been made in August 2012 and Luton Borough Council (LBC) having provided its scoping opinion in November 2012 (ref 12/01400/FUL).

The scheme involves the following works within the existing Airport boundary:

- Dualling of the road from the Holiday Inn Roundabout to the Central Terminal Area;
- Safeguarding an extension to Airport Way so as to provide an access route to facilitate the development of Century Park;
- Improvements to the public transport hub adjacent to the terminal;
- Construction of a multi-storey car park and pedestrian link to the western side of the existing short-term car park;
- Extension to the mid-term car park and long-term car park;
- Improvements to the terminal building involving internal reorganisation, and minor extensions and building works;
- Construction of a new pier (Pier B);
- Construction of a new taxiway parallel to Taxiway Delta; and
- Taxiway extensions and rationalisation of aircraft parking area with new stands replacing and improving existing stands.

This application seeks to increase the capacity of London Luton Airport to 18mppa from a current capacity of approximately 12mppa.

The application will eventually be reported to a meeting for LBC's Development Control Committee and will subsequently be referred to the National Planning Casework Unit to allow the Secretary of State the opportunity to further examine the application before formal determination.

There were no other notable physical developments undertaken or commenced by LLAOL within the airport boundary during 2012. Other developments on or adjacent to the site, but carried out by third parties include;

- Change of use and extension to the ground floor of Building 135 to accommodate a Fixed Base Operation (FBO), including a revised access, car parking and landscaping arrangements. The scheme included the demolition of Hangar 55 and Office Building 72,
- Demolition of existing structures and erection of a replacement two storey Fixed Base Operation building together with associated apronage and car parking, landscaping and access works including new vehicular access onto Percival Way for Signature Flight Support (Hangar 63 and 102, 63-1-2 Percival Way);
- Demolition of existing structures and construction of a replacement hangar together with the provision of associated apronage and car parking, and replacement cargo centre compound. Relocation of the existing cargo compound area and cargo aircraft stands along with alterations to existing Gate 9 security access also for Signature Flight Support.
- Refurbishments to the existing building to include a new main entrance with disabled ramp under a new external canopy and new windows on the front elevation at Monarch Airways, Building 136
- Installation of eight new windows into the existing building at Monarch Airways, Building 134.
- Erection of an entrance porch at easyJet (Hangar 89)
- New advertisements for Thomson Airways (Hangar 61)

11.7.3 Hotel developments

The Good Practice Guide on Planning for Tourism, which replaced PPG21 (Tourism) in 2006, states: "*Tourism is of crucial importance to this Country. It generates significant revenues, provides millions of jobs, supports communities and helps maintain and improve important national assets".* This document was withdrawn following the publication of the NPPF.

The NPPF also requires local planning authorities "*to plan proactively to meet the development needs of business and support an economy for the 21st Century."*

The area around the Airport proves to be attractive to hotel developers and operators. The following sites have valid planning permissions for such development.

Site address	**Current status of application**	**Number of bedrooms**
Express by Holiday Inn	Implemented	147
Hotel Ibis	Implemented	162
Premier Inn (The Brache)	Implemented	131
Napier Park/Stirling Place	Approved October 2006	200
Hampton by Hilton 42-50 Kimpton Road	Opening January 2013	188
Vauxhall Trailer Park	Subject to a S106 legal agreement. Decision not yet issued	250
Ramada Encore, Airport Way	Opened July 2012	124
Airport Way/ELC	Approved February 2011	171
	Total rooms	**1373**

It is envisaged that the demand for hotel accommodation in Luton will grow as the number of passengers travelling through the Airport increases.

11.7.4 Planning Appeals

An appeal for an off-airport car park at Vauxhall Trailer Park was lodged with the Planning Inspectorate in 2010; this appeal was dismissed on 14 February 2011. The appellant has a period of 12 months (until 14th February 2012), in which to cease the use of the site for off-airport car parking, following a variation of the enforcement notice by the Inspector.

In February 2012 a further application was submitted, where the appellant provided additional information to address comments made by the previous Inspector. This application was refused in September 2012 and a further appeal was submitted. This further appeal is expected to be determined under the Public Inquiry appeals procedure.

An Enforcement Notice was served in respect of an off-airport car park operator for a site in Park Street, Luton. The site was a former garage site, which had been cleared and vacant for a few years. The site is close to residential properties, the occupants of which were experiencing noise and disturbance at unreasonable hours. The use also raised highway safety issues as well as compliance issues with Policy LLA2. An appeal against the notice was lodged with the Planning Inspectorate in December 2011 and the appeal was dismissed in February 2012.

12. Glossary and Definitions

A-weighting	A frequency response used in sound measurement devices to take account of the way the sensitivity of the human ear varies with frequency.
Aircraft Movement	A landing or take-off of any aircraft from the Airport.
Cargo Aircraft	Aircraft movements which are solely for freight. It should be noted that freight can also be carried in the hold of passenger aircraft.
Complaint	A complaint is the reporting of disturbance caused by actual aircraft operations affecting the reporter of the complaint to the Airfield Environment Office, hereafter called the 'complainant'. It reflects discontent and is triggered by or attributed to either a specific aircraft event outstanding in its impact or, by general patterns such as frequency, volume, aircraft fleet mix, runway split, operating hours, etc. One complaint may contain a number of incidences of disturbance referred to as 'events'. All other comments received are logged and reported separately if they do not meet the above criteria.
Decibel (dB)	The logarithmic ratio of a sound pressure compared to a reference sound pressure in decibels, dB. For audible sound A-weighted decibels are commonly used, dB(A).
dB(A)	The unit of sound pressure level, weighted according to the A scale, which takes into account the increased sensitivity of the human ear at some frequencies.
General Aviation	Private Aircraft, Helicopters and Business Jets
ICAO	International Civil Aviation Organisation.
INM	Integrated Noise Model. A method of noise contour modelling which uses a wide range of different aircraft types and can be adjusted according to operating procedures.
LAeq,T	The notional A-weighted equivalent continuous sound level which, if it occurred over the same time period, would give the same noise level as the continuously varying sound level. The T denotes the time period over which the average is taken, for example LAeq,16h is the equivalent continuous noise level over a 16 hour period.
Military	Flights by British or foreign military aircraft exclusively for military purposes.
Noise Certificated	An aircraft conforming to the requirements of ICAO Annex 16 which lays down specific levels of noise not to be exceeded at specific points on an aircraft's departure. An aircraft must be noise certificated in order to operate at United Kingdom Airports after 1 January 1988 unless exempted by the Civil Aviation Authority.

Noise Preferential Route (NPR)	Noise Preferential Routes are established to ensure that departing aircraft avoid overflying densely populated areas in the vicinity of an Airport, as far as practicable. NPRs are valid until the aircraft has reached an altitude (above mean sea level) of 3,000ft during the daytime or 4,000ft at night, depending on the flight route. Once an aircraft has achieved this altitude Air Traffic Control may tactically vector the aircraft, taking into account any other airspace constraints, in order to integrate it into the overall flow of national traffic.
Official	Flights solely for official purposes by British or foreign civil government departments.
Positioning Flights	Flights by air transport operators for the sole purpose of moving their own aircraft, personnel or stores from one place to another and air transport flights forced to return to base by bad weather, engine failure or other causes.
Runway Usage	For operational and safety reasons, aircraft generally take-off and land into the wind. When winds come from the west (westerly operations), aircraft will take-off and land towards the west and when winds come from the east (easterly operations) aircraft will depart and land towards the east.
Test & Training	Flights for the purpose of testing aircraft/Airports or for training flying crew or ground personnel. Also included in this category are demonstration flights by makers or sellers of aircraft and aviation equipment. N.B. Flying Club instructional flights are excluded from this category.

13. Useful Links

London Luton Airport	www.london-luton.co.uk
Luton Borough Council	www.luton.gov.uk
The Civil Aviation Authority	www.caa.co.uk
NATS (National Air Traffic Services)	www.nats.co.uk
The Department for Transport (Aviation)	www.dft.gov.uk/aviation
Hertfordshire & Bedfordshire Air Quality Monitoring Network	www.hertsbedsair.org.uk
London Luton Airport Consultative Committee	www.llacc.com
London Luton Airport Night Noise Policy	http://www.london-luton.co.uk/en/content/8/241/operations.html
London Luton Airport Noise Action Plan	http://www.london-lutoninthecommunity.co.uk/noise-action-plan
Travis flight tracking tool	http://www.london-luton.co.uk/en/flighttracking/

LTN

This document can be made available in a range of languages, large print, Braille, on tape, electronic and accessible formats from Kevin Owen. Tel: [redacted]

Informacje te moga być dostępne w innym formacie. Jeżeli wymagana jest kopia napisana większym drukiem, na kasecie lub w języku innym niż angielski prosimy o kontakt telefoniczny pod numerem: [redacted]

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প্রস্তাবিত প্রোজেক্ট সম্পর্কে যদি আপনার মতামত জানাতে চান অথবা কেবলমাত্র বিস্তারিত খবরাখবর জানতে চান, তাহলে মেহেরবানি করে আবদুল গালায়েব সাথে 01582 547 087 - এই টেলিফোন নম্বরে যোগাযোগ করুন। আমরা আপনার মতামতের মূল্য দেই।

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Produced and published by London Luton Airport Operations Ltd, Navigation House, Airport Way, Luton, Beds, LU2 9LY in conjunction with Planning Division, Department of Environment & Regeneration, Luton Borough Council, Town Hall, Luton LU1 2BQ

LUTON BOROUGH COUNCIL

LONDON LUTON AIRPORT

ANNEX D - AIRPORT ANNUAL MONITORING REPORT 2013


LTN

Annual Monitoring Report

2013

LUTON BOROUGH COUNCIL

LONDON LUTON AIRPORT

Executive Summary

Activity

London Luton Airport (LLA) served just over 9.7 million passengers in 2013, an increase of 1% year on year. The services included 8 new routes (nett total of 3 as 5 routes ended during 2013) resulting in a total of 100 destinations in 2013.

There were a total of 97,615 aircraft movements during 2013, a decrease of just over 1% compared to 2012. These aircraft movements consisted of 74,071 passenger flights, including commercial flights by executive aircraft. The most common aircraft types used for passenger aircraft movements during 2013 were Airbus A320/321 aircraft (29%), Airbus A319 aircraft (27%) and the Boeing 737 (13%).

General Aviation and non-commercial executive aircraft movements decreased by 1% year on year and the cargo handled at the Airport decreased from 29,663 tonnes in 2012 to 29,092 tonnes during 2013. Most of this cargo was carried by the Airbus A300 freighter, the movements of which were similar to last year, increasing slightly from 1,075 in 2012 to 1,163 in 2013, with the majority (97%) involving newer series A306 aircraft types, as the cargo operators continue to upgrade their fleets.

Operational Matters

The mode of operation at the Airport consisted, as usual, of a predominance of westerly operations, with landings from the direction of Stevenage and departures towards the M1 for 64% of the time. The day/night ratio of total aircraft movements during 2013 was 92% day / 8% night, in line with 2012. No permanent changes to any flight routes occurred during 2013, with the busiest departure routes being Clacton/Dover/Detling, towards the Brookmans Park beacon and Compton, towards the Tring area.

The Airport continued to monitor the use of Continuous Descent Approaches (CDAs) and has provided the London Luton Airport Consultative Committee (LLACC), via the Noise & Track Sub-committee, with detailed statistics on CDA achievement on a regular basis. The overall achievement rate during 2013 was 86%, in line with 86% in 2012.

Developments

There were no notable physical developments undertaken or commenced by London Luton Airport Operations Ltd. (LLAOL) within the Airport boundary during 2013.

On 3rd December 2012, LLAOL submitted a planning application to Luton Borough Council (LBC) for:

> *"Full planning application for dualling of Airport Way/Airport Approach Road and associated junction improvements, extensions and alterations to the terminal buildings, erection of new departures / arrivals pier and walkway, erection of a pedestrian link building from the short-stay car park to the terminal, extensions and alterations to the mid-term and long-term car parks, construction of a new parallel taxiway, extensions to the existing taxiway parallel to the runway, extensions to existing aircraft parking aprons, improvements to ancillary infrastructure including access and drainage, and demolition of existing structures and enabling works. Outline planning application for the construction of a multi-storey car park and pedestrian link building (all matters reserved)"*

The application is a hybrid application, with full details submitted for all of the development except in relation to the multi-storey car park and pedestrian link building, where all matters are reserved for subsequent determination. The application was accompanied by an Environmental Statement (ES), with a scoping request having been made in August 2012 and LBC having provided its scoping opinion in November 2012 (ref 12/01400/FUL).

The application was reported to a meeting for LBC's Development Control Committee on 20th December 2013. Members resolved to approve the application, but the application had to first be referred to the National Planning Casework Unit to allow the Secretary of State the opportunity to further examine the application, before formal determination.

Other developments on or adjacent to the site, but carried out by third parties include:-

- Construction of a new vehicular access ramp, linking apron to rear fixed base operation circulation route, with associated exterior stairs and additional security fence and gate. Harrods Aviation (Hangar 129)
- New advertisements for Harrods Aviation (Hangar 129) and Thomson Airways (Hangar 61)

Planning

The Luton and Southern Central Bedfordshire Joint Committee was disbanded in March 2012 following the Secretary of State withdrawing the pre-submission Core Strategy in September 2011. Luton Borough Council Members of the Joint Committee did not support the core strategy document. However, Central Bedfordshire Council has prepared a new Development Strategy largely founded on the approach of the previous joint core strategy as far as it relates to Central Bedfordshire, and this plan has undergone a pre-submission consultation although its progress is halted pending new work on objective housing evidence via a joint Strategic Housing Market Assessment with Luton and other partners within the housing market area. Consequently work commenced on a Local Plan for Luton under the requirements set out within the National Planning Policy Framework (NPPF). However, in the interim, the Borough Council's adopted Luton Local Plan (March 2006) remains part of the statutory development plan until replaced when the new local plan is prepared.

Furthermore, the LLA Development Brief (February 2000) sets out detailed proposals for further development at LLA and is adopted by Luton Borough Council as Supplementary Planning Guidance (in September 2001).

The NPPF was published in March 2012 and requires plans to be soundly prepared i.e. positively prepared (evidenced based on objective needs); justified (against reasonable alternatives); effective (deliverable which requires local authorities to adopt an approach under the duty to cooperate on cross boundary matters); and consistent (with national policy).

The publication of the Localism Act in November 2011 signalled an overhaul of the planning system with more emphasis on a national policy framework and local neighbourhood plans.

A work programme for the new Local Plan (Local Development Scheme or LDS) to replace the existing Luton Local Plan was approved by the Council's Executive on 23 January 2012, commencing with evidence gathering. Throughout the process, negotiations are required under the 'duty to cooperate' to achieve a satisfactory understanding with neighbouring authorities. This is critical to the soundness of respective local plans.

A six week consultation took place from 25th June to 3rd August 2012 inviting representations on the content of the new local plan. A revised timetable (LDS) for the preparation of the Local Plan was approved by the Council's Executive on 25th March 2013. Since that time further evidence gathering and evaluation has taken place and the council has decided to introduce an informal draft Local Plan consultation stage before moving to pre submission consultation. The draft Local Plan public consultation is expected to commence in February/March 2014

Noise

Aircraft noise in 2013 has been monitored continuously at the three fixed noise monitors and the Airport's noise contours regularly updated. The individual noise of each departure has been compared to noise violation limits of 94dB(A) during the daytime and 82dB(A) at night. There were no daytime violations during 2013 and just 4 violations at night (three A30B cargo jets and one B734 passenger jet aircraft), compared to 3 night violations during 2012. Continuous monitoring indicates that the vast majority of aircraft operated well below the current violation limits, with 99% of daytime departures and 97% of night departures registering maximum noise levels less than 79dB(A) and 87% of daytime departures and 82% of night departures registering maximum noise levels less than 76dB(A).

The Airport has to operate within limits on the area of the day and night contours, set by planning conditions in 1998 when the new terminal was approved.

	Daytime (57dB $L_{Aeq,16h}$) in km^2	Night-time (48 dB $L_{Aeq,8h}$) in km^2
NOT TO BE EXCEEDED	31.5	85.0
NOISE REDUCTION ACTION PLAN TO BE IMPLEMENTED	19.6	60.6
ACTUAL 2013	13.8	30.7

The contours for 2013 have been produced using the most recent version of aircraft noise modelling software, INM 7.0d.

The areas within the 57dB(A) daytime summer contour (13.8 km^2) and the 48 dB(A) night-time summer contour (30.7 km^2) identify that the Airport is operating well within its planning limits. This equates to a 6% reduction in the daytime 57dB(A) summer contour and a 15% reduction in the night-time 48dB(A) summer contour since 2012, which is largely attributed to a decrease in movements. The 2013 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

The population counts for this year were calculated using the CACI Ltd, 2012 postcode database. Each postcode in the database is described by a single geographical point and if this point is within a contour then all of the dwellings and population in the postcode are counted. Counts for 2012 have been presented to enable direct comparison year on year.

When comparing the 2013 summer contour results with the 2012 summer contour results, a reduction to the dwelling counts and population figures are observed. The daytime 57dB(A) summer contour shows a decrease of around 3% for dwellings and population and the night-time 48dB(A) summer contour shows a decrease of around 5% for dwellings and population. The reduction is largely due to a decrease in aircraft movements.

In response to the Environmental Noise Directive (2002/49/EC) and corresponding regulations a Draft Noise Action Plan was prepared by the Airport during 2009, in partnership with the LLACC, the Air Traffic Control provider and airline partners. A 16 week consultation period on this document was launched on 28th September 2009 and following consideration of consultation responses a final Draft Noise Action Plan was submitted to the Department for Environment, Food and Rural Affairs (DEFRA), for approval, at the end of January 2010. London Luton Airport published the final Noise Action Plan in January 2012, following formal adoption by the Secretary of State for Environment, Food and Rural Affairs. This document is available to view on the airport website, at the following link: http://www.london-lutoninthecommunity.co.uk/noise-action-plan

A progress update on the specific actions within the Noise Action Plan is outlined under Section 7 of this report.

Complaints

During 2013 a total of 1,022 complaints relating to (LLA) aircraft operations were received, compared to 938 in 2012, an increase of 9% year on year. This was due in part to heightened awareness concerning the RNAV1 trials carried out between March and June 2013, when local residents were encouraged to provide feedback (both positive and negative) regarding any perceived changes in noise or departure track-keeping on the 26 Clacton/Dover/Detling heading.

The number of complainants reporting concerns throughout the year increased from 355 in 2012 to 379 during 2013. These individuals were located in a wide area around the Airport, with the highest number of complainants originating from Flamstead, Harpenden, Hemel Hempstead, Redbourn and St Albans, these being amongst those communities affected most by the RNAV1 trials.

The number of specific aircraft events reported by complainants decreased from 3,079 in 2012 to 2,164 in 2013. However, 558 of these events (26% of total events) were reported by just one individual in Harpenden.

During the year 163 individuals reported a total of 374 complaints concerning night noise disturbance from LLA operations. This amounts to 37% of all complaints received in 2013, compared to 286 night noise complaints during 2012 (from 144 individuals). It should be noted that 26% of the reported night disturbance reports during 2013 originated from just three individuals, one in Harpenden, one in Hemel Hempstead and one in Kensworth. A further 20 complaints reported disturbance relating to overflights to or from other airports during the night period.

Employment

The methodology for this year's analysis is the same as for the previous year. Administrative data sources were used to conduct the survey, instead of sending out questionnaires as was the case up to the 2009 survey. The Inter Departmental Business Register was used as the main data source. This Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

It has been assessed that during 2013 around 8,400 people work at or around the Airport site. It is estimated that just over 81% of the jobs are full time positions.

Surface Access

The annual summer road count for 2013 shows an increase in 12hr/5day traffic flows on 3 of the 8 monitored roads. The highest increase in traffic is +1,188 (10.3%) on Airport Way (new), while the most significant decrease in traffic is -1,137 (-21.5%) on Frank Lester Way. The overall marginal traffic flow compared with last year in these observation points is -1259 (-2.4%).

The number of staff car parking spaces remained unchanged during 2013, whilst passenger car parking capacity increased slightly with an extension to the long stay car park. The total car parking spaces on site now stand at 12,466, with around 7,900 spaces in off-site parks.

Conclusion

In 2013 London Luton Airport achieved a 1% increase in passengers, with a 1% reduction in total aircraft movements. With a total of 97,615 annual movements the Airport served just over 9.7 million passengers and carried just over 29,000 tonnes of cargo (compared to just under 30,000 tonnes during 2012). During the year there were a total of 100 destinations served, with 8 new routes (nett total of 3 as 5 routes ended during 2013). The Airport has continued to provide major employment for the area and around 8,400 people are estimated to work at or around the Airport site.

During 2013 there was an increase in the number of complaints reporting disturbance from aircraft operations but a reduction in the number of aircraft events eliciting a complaint. There was also a 7% increase in the number of individuals reporting concerns to the Airport.

The contours for 2013 were produced using the most recent aircraft noise modelling software, INM 7.0d. When comparing the 2013 summer contours with the 2012 summer contours, significant decreases were identified in the contour areas year on year (-6% daytime and -15% night-time). This decrease is largely attributable to a decrease in movement numbers. The 2013 results are also significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

The results also show a small decrease in the number of dwellings and the population within the summer contours when comparing 2013 with 2012. For the 57 dB(A) daytime summer contour the decrease is around 3%, and for the 48 dB(A) night time summer contour this is around 5%. Overall, the population affected during 2013 stood at 7,128 people during the daytime and 14,974 people at night. The Airport is however still operating well within the limits set by the planning permission for the terminal resolved in February 1998.

1. Background

As a result of the Airport Act 1986, Luton Borough Council (LBC) formed a Limited Company, London Luton Airport Ltd (LLA Ltd.), as freeholders and operators of the Airport in April 1987. In August of 1998, LLA Ltd then granted a 30 year agreement to a private consortium, known as London Luton Airport Operations Ltd (LLAOL), as the licensed managers and operators. An extension to this agreement between LLA Ltd and LLAOL was granted in August 2012, taking the concession period up to 2031.

This report is the 35th Annual Monitoring Report (AMR) and unless otherwise stated, looks at the calendar year 2013. It has been produced jointly by LBC and LLAOL.

In 1978, LBC in accepting the conclusions of the report of the Council's Chief Executive, entitled "Luton Airport, A Plan for the Future", affirmed the importance of monitoring in connection with noise levels, employment, housing and the effect on the highway system. They placed on record their willingness to discuss the results of such monitoring with interested bodies and in particular with the London Luton Airport Consultative Committee (LLACC). The arrangements for monitoring were approved in June 1979 and were reaffirmed in the Borough Council's 1985 Policy Document "Towards 5 million Passengers".

The results are also used to monitor the performance of the Borough of Luton Local Plan approved in 1997 - now superseded by the adopted Borough of Luton Local Plan March 2006 - and constitute one of the material considerations when the Borough Council considers development proposals or determines planning applications for further development of the Airport.

Any monitoring system of this nature will have minor inaccuracies that can only be resolved as the monitoring arrangements evolve. Where more accurate figures for previous years have become available, these have been incorporated in the Report. Where additional information for previous years has become available this has also been included in the Report. Where data is no longer available then this is also identified with reasons.

The Leq contours are produced by Bickerdike Allen Partners for LLAOL using the FAA INM (Integrated Noise Model) model and LLAOL provides the contour outputs to LBC.

This is the 27th Annual Monitoring Report to be prepared since LLA became a Limited Company. All operational statistics are saved directly from the Airport's electronic monitoring systems unless otherwise stated. Employment and surface access data is compiled from LBC's monitoring systems.

The INM model for calculating the Leq noise contours was proposed by LLAOL after reporting the benefits of this model to the Noise & Track Sub-Committee of the LLACC on 15th November 1999. Subsequently the LLACC agreed the proposed move to the INM method on 13th December 1999.

Following extensive work between LBC and LLAOL the 2004 AMR radically improved the speed of information delivery, the format and content in accordance with the wishes of the LLACC. Sections 2-7 have been produced exclusively by LLAOL. Sections 8-10 have been produced by LBC with data input on employment counts and car parking supplied by LLAOL.

Following validation the statistics contained within this report may differ to those presented in the Quarterly Airfield Environment Report.

Sections 2-8

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Sections 9-11

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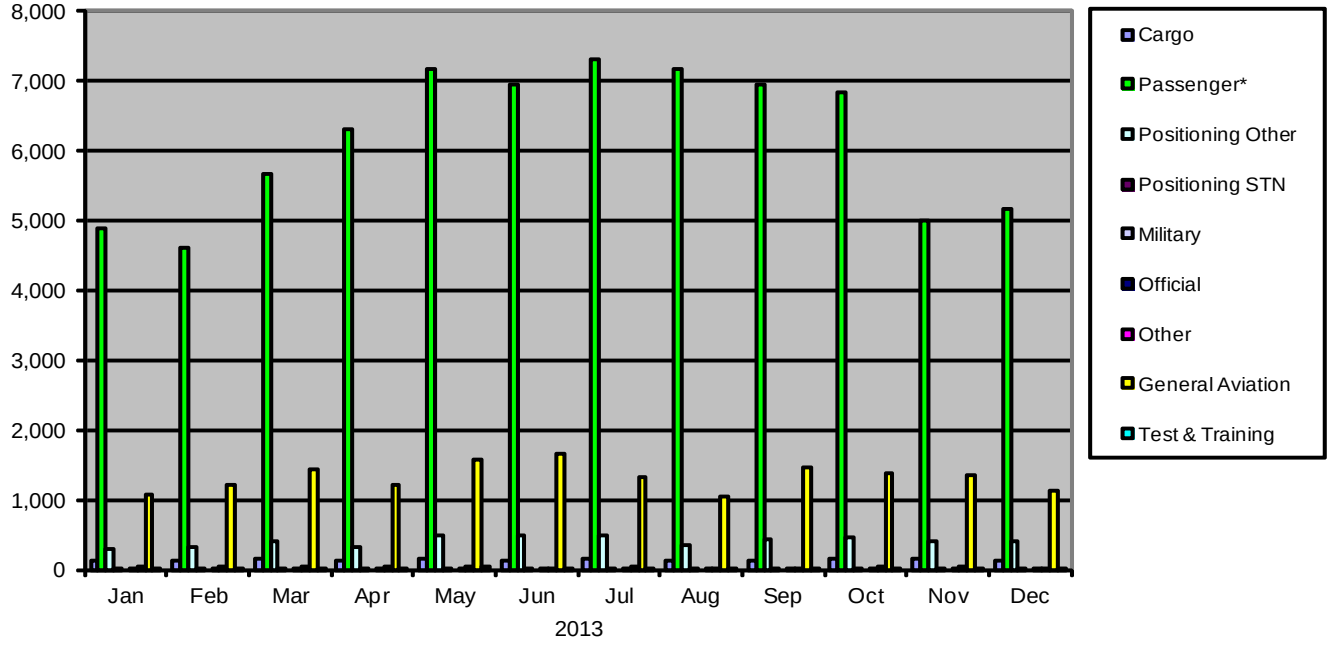
2. Aircraft Movements

2.1. Total Aircraft Movements

An aircraft movement is the take-off or landing of any aircraft from the Airport. There were a total of 97,615 aircraft movements during 2013 (compared with 98,763 in 2012), a slight decrease of about 1%. This resulted in an average 267 movements per 24 hours (in comparison with 271 in 2012).

	Commercial					Non - Commercial						
	Cargo	Passenger*	Positioning		Total	Military	Official	Other	General Aviation	Test & Training	Total	Total
			Other	STN								
Jan	140	4,887	303	6	5,336	0	2	43	1,086	7	1,138	6,474
Feb	142	4,625	340	6	5,113	0	7	42	1,214	23	1,286	6,399
Mar	163	5,664	414	11	6,252	0	6	53	1,431	19	1,509	7,761
Apr	135	6,310	331	16	6,792	0	2	41	1,210	26	1,279	8,071
May	152	7,169	508	24	7,853	0	3	41	1,569	36	1,649	9,502
Jun	135	6,947	499	11	7,592	0	7	23	1,657	18	1,705	9,297
Jul	152	7,317	487	15	7,969	0	3	37	1,335	27	1,404	9,373
Aug	135	7,177	363	16	7,691	0	6	26	1,055	13	1,100	8,791
Sep	134	6,948	441	17	7,540	0	12	30	1,479	9	1,530	9,070
Oct	148	6,835	472	16	7,471	0	13	40	1,385	29	1,467	8,938
Nov	154	5,014	404	23	5,595	0	4	44	1,353	18	1,419	7,014
Dec	128	5,178	398	17	5,721	0	2	31	1,145	26	1,204	6,925
2013 Total	**1,718**	**74,071**	**4,960**	**178**	**80,925**	**0**	**67**	**451**	**15,919**	**251**	**16,690**	**97,615**
2012 Total	***1,816***	***74,976***	***4,891***	***236***	***81,919***	***8***	***93***	***421***	***16,111***	***211***	***16,844***	***98,763***

* includes commercial flights by executive aircraft



2.2. Movement Classifications

Commercial	Operating for hire or reward
Non-Commercial	Not operating for hire or reward
Cargo	Aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories.
General Aviation	Private Aircraft, Helicopters and Business Jets not operating for hire or reward
Passenger	Commercial passenger flights, including executive aircraft
Other Positioning	Positioning flights to/from other Airports
STN Positioning	Positioning flights to/from London-Stansted Airport
Military	Flights on Military business
Official	Flights solely for official purposes by British or foreign civil government departments.
Other	Other non-commercial movements e.g. a departing aircraft that has made an unscheduled return to base.
Test & Training	Training flights involving aircraft and also flights following or during aircraft maintenance

2.3. Aircraft Movements by Weight

Historically, aircraft operating at LLA have been classified in two groups, below or above 16 tonnes. Those below this weight were typically general aviation and executive aircraft although in recent years many general and executive aircraft can weigh in excess of 16 tonnes.

Aircraft Classifications (16 tonnes)

		2012	2013
Aircraft Over 16 Tonnes	Passenger	70,841	70,176
	Cargo	1,815	1,717
	Other	15,399	15,553
Aircraft Under 16 Tonnes	Passenger	4,135	3,895
	Cargo	1	1
	Other	6,572	6,273
TOTAL		**98,763**	**97,615**

2.4. Air Traffic Movements by Propulsion Type

Key – Jet, Propeller, Helicopter, Turbo-prop

AIRBUS A300-600 FREIGHTER	1,131	BOEING BBJ2 (737-800)	50
AIRBUS A300-600 PASSENGER	2	BOEING BBJ3 (737-900)	8
AIRBUS A300-B4/C4 PASSENGER	2	CANADAIR CHALLENGER 300	916
AIRBUS A300-B4/C4/F4 FREIGHTER	32	CANADAIR CHALLENGER 601	131
AIRBUS A310-300	14	CANADAIR CHALLENGER 604	2,014
AIRBUS A318	79	CANADAIR CHALLENGER 800 SRS (CRJ1/2)	339
AIRBUS A319	26,186	CANADAIR GLOBAL 5000	516
AIRBUS A319 CJ (EXEC)	146	CANADAIR GLOBAL EXPRESS	2,228
AIRBUS A320	24,589	CANADAIR REGIONAL JET 100	4
AIRBUS A320 (SHARKLETS)	1,244	CANADAIR REGIONAL JET 200 /440	10
AIRBUS A321	2,087	CANADAIR REGIONAL JET 900	2
AIRBUS A330-200 FREIGHTER	20	CESSNA 500/501 CITATION I	2
AVRO RJ100	4	CESSNA 510 CITATION MUSTANG	746
AVRO RJ85	30	CESSNA 525 CITATIONJET	219
BAE 146-100 PASSENGER	7	CESSNA 525A CITATIONJET 2	1,076
BAE 146-200 PASSENGER	26	CESSNA 525B CITATIONJET 3	214
BAE 146-300 PASSENGER	2	CESSNA 550/551/552 CITATION 2/SP/BRAVO	721
BEECHCRAFT/RAYTHEON/HAWKER 400/450/XP	105	CESSNA 560 CITATION 5/ULTRA	36
BOEING 727-100 PASSENGER	2	CESSNA 560E CITATION ENCORE	10
BOEING 727-200 WINGLETS	6	CESSNA 560XL CITATION EXCEL/XLS	2,226
BOEING 737-200 PASSENGER	56	CESSNA 650 CITATION III/VI/VII	28
BOEING 737-300 FREIGHTER	62	CESSNA 680 CITATION SOVEREIGN	350
BOEING 737-300 PASSENGER	92	CESSNA 750 CITATION X	273
BOEING 737-300 WINGLETS	4	CESSNA CITATION FAMILY	8
BOEING 737-400 FREIGHTER	78	DASSAULT FALCON (3 ENGINE) FAMILY	2
BOEING 737-400 PASSENGER	880	DASSAULT FALCON 10/100	10
BOEING 737-500	12	DASSAULT FALCON 20/200	16
BOEING 737-700	18	DASSAULT FALCON 200/2000/50/900	4
BOEING 737-700 WINGLETS	4	DASSAULT FALCON 2000	945
BOEING 737-800	8	DASSAULT FALCON 2000 DX/EX	28
BOEING 737-800 WINGLETS	11,402	DASSAULT FALCON 2000 LX	369
BOEING 737-900	4	DASSAULT FALCON 50	38
BOEING 737-900 WINGLETS	4	DASSAULT FALCON 50EX	120
BOEING 757-200 FREIGHTER	58	DASSAULT FALCON 7X	840
BOEING 757-200 PASSENGER	185	DASSAULT FALCON 900	691
BOEING 757-200 WINGLETS	609	DASSAULT FALCON 900EX	12
BOEING 757-300	12	ECLIPSE 500	2
BOEING 767-200 PASSENGER	2	EMBRAER 170	4
BOEING 767-200ER	122	EMBRAER 190	32
BOEING 767-300 PASSENGER	34	EMBRAER 195	20
BOEING 767-300 WINGLETS	78	EMBRAER LEGACY 600	1,153
BOEING 777-200ER	36	EMBRAER PHENOM 100	90
BOEING 787-800	4	EMBRAER PHENOM 300	240
BOEING BBJ (737-700)	186	EMBRAER RJ135	116

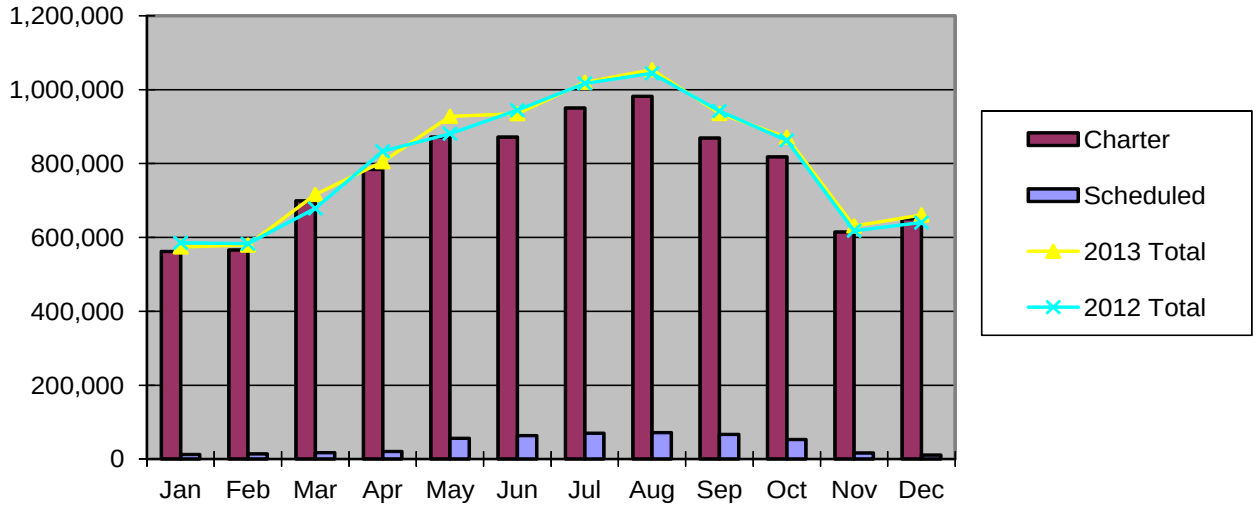
EMBRAER RJ145	101	AEROSPATIALE AS350/355 FAMILY	106
FAIRCHILD DORNIER 328 JET	10	AEROSPATIALE AS355/555	4
FOKKER 100	8	AEROSPATIALE AS365/565	4
FOKKER 70	14	AGUSTA A109	142
GATES LEARJET 31	16	BELL HELICOPTER FAMILY	10
GATES LEARJET 35/36	102	EUROCOPTER EC130	38
GATES LEARJET 40	24	EUROCOPTER EC135/635	26
GATES LEARJET 45	346	EUROCOPTER EC155	92
GATES LEARJET 55	22	MD HELICOPTERS MD900 EXPLORER	2
GATES LEARJET 60	375	ROBINSON R44	4
GULFSTREAM 100 / IAI 1125 ASTRA	2	SIKORSKY S-76	66
GULFSTREAM 100 SERIES	78	SIKORSKY S-92	4
GULFSTREAM 150	12	**Total**	**498**
GULFSTREAM 2	8	AEROSPATIALE/ALENIA ATR42-200/300	8
GULFSTREAM 200 / IAI 1126 GALAXY	395	AEROSPATIALE/ALENIA ATR42-500	2
GULFSTREAM 280	26	AEROSPATIALE/ALENIA ATR72	6
GULFSTREAM 3	52	ANTONOV AN-26	2
GULFSTREAM 4	170	BAE ATP FREIGHTER	616
GULFSTREAM 4, 300 AND 400 SERIES	1,979	BAE JETSTREAM 31	16
GULFSTREAM 400	50	BAE JETSTREAM 41	4
GULFSTREAM 450	93	BEECHCRAFT 200 KING AIR	244
GULFSTREAM 5	26	BEECHCRAFT 300/350 KING AIR	76
GULFSTREAM 5 AND 500 SERIES	2,352	BEECHCRAFT C90A/B/GT KING AIR	8
GULFSTREAM 550	320	BEECHCRAFT E90 KING AIR	10
GULFSTREAM 650	138	BEECHCRAFT TWIN TURBOPROP	20
HAWKER 4000	4	CASA 212 AVIOCAR	2
HAWKER/RAYTHEON 4000 HORIZON	150	CASA/IPTN CN-235	4
HS125 FAMILY	2	CESSNA 441 CONQUEST 2	26
HS125-100/200/300	2	DE HAVILLAND DHC-8 DASH 8-400	532
HS125-1000	30	FAIRCHILD DORNIER 328	2
HS125-700/750	273	FOKKER 50/60	26
HS125-800/850XP	856	LOCKHEED L-100/182/382 HERCULES	4
HS125-900/900XP	293	MITSUBISHI MU-2	2
MCD DOUGLAS MD-82	16	PIAGGIO P180	58
MCD DOUGLAS MD-83	24	PILATUS PC-12	90
MCD DOUGLAS MD-87	12	PIPER LIGHT A/C (TWIN TURBO)	2
RAYTHEON 390 PREMIER 1	130	PIPER PA31T TURBO NAVAJO/CHEYENNE I/II	4
ROCKWELL SABRE/SABRELINER	2	PIPER PA42 CHEYENNE 3/4	20
Total	**95,250**	PIPER PA46 (TURBO)	4
CESSNA 205/206/207	6	SAAB 340A	4
DIAMOND STAR DA-40/42	14	SOCATA TBM 700/850	6
PIPER LIGHT A/C (SINGLE PISTON)	2	SW SA-227CC/DC METRO 23	18
PIPER LIGHT AIRCRAFT	2	**Total**	**1,816**
PIPER PA31 NAVAJO	27		
Total	**51**	**Grand Total**	**97,615**

2.5. Passenger Statistics

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 9,710,771 passengers were handled at LLA during 2013: 9,239,556 on scheduled flights (95%) and 471,215 on charter flights (5%). This represents a small overall increase in passengers of 1% compared with 2012.

	2012			2013		
	Charter	Scheduled	**Totals**	Charter	Scheduled	**Totals**
Jan	11,564	574,080	**585,644**	562,279	12,160	**574,439**
Feb	14,323	568,656	**582,979**	565,767	13,693	**579,460**
Mar	14,424	664,201	**678,625**	698,855	17,573	**716,428**
Apr	24,444	808,910	**833,354**	784,229	20,847	**805,076**
May	57,051	823,889	**880,940**	871,924	55,943	**927,867**
Jun	66,364	878,258	**944,622**	871,781	63,262	**935,043**
Jul	69,243	947,910	**1,017,153**	950,358	69,691	**1,020,049**
Aug	74,208	970,026	**1,044,234**	982,310	71,502	**1,053,812**
Sep	69,970	872,030	**942,000**	869,009	66,411	**935,420**
Oct	55,289	807,685	**862,974**	818,075	53,013	**871,088**
Nov	15,375	602,938	**618,313**	614,941	16,195	**631,136**
Dec	12,748	627,577	**640,325**	650,028	10,925	**660,953**
Totals	**485,003**	**9,146,160**	**9,631,163**	**9,239,556**	**471,215**	**9,710,771**



2.6. Average passenger load on public transport flights

Average Passengers on Scheduled and Charter Flights			
Year	Charter*	Scheduled	**Total**
2009	169	125	**127**
2010	181	132	**134**
2011	181	132	**134**
2012	182	140	**142**
2013	177	143	**144**

*including chartered executive aircraft

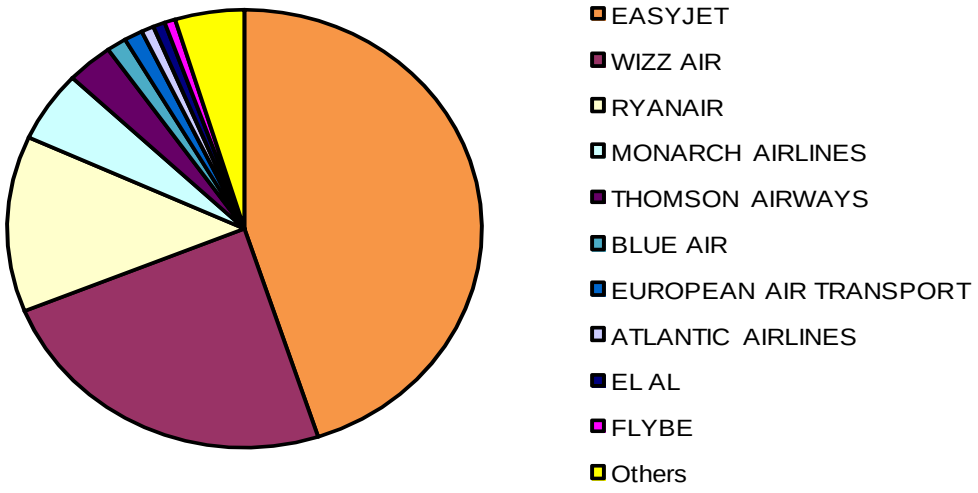
2.7 Passenger Breakdown by Region

	2012				2013			
	Domestic	EU	Non-EU	**Total**	Domestic	EU	Non-EU	**Total**
Jan	69,698	352,997	162,949	**585,644**	62,866	353,159	158,414	**574,439**
Feb	78,281	354,378	150,320	**582,979**	72,742	349,776	156,942	**579,460**
Mar	86,070	417,900	174,655	**678,625**	80,369	437,062	198,997	**716,428**
Apr	89,897	544,104	199,353	**833,354**	84,074	525,015	195,987	**805,076**
May	91,101	599,834	190,005	**880,940**	89,200	623,506	215,161	**927,867**
Jun	91,042	644,202	209,378	**944,622**	85,711	630,519	218,813	**935,043**
Jul	90,757	698,260	228,136	**1,017,153**	94,154	686,227	239,668	**1,020,049**
Aug	92,901	717,495	233,838	**1,044,234**	95,157	710,051	248,604	**1,053,812**
Sep	87,527	643,187	211,286	**942,000**	87,288	627,018	221,114	**935,420**
Oct	91,472	579,458	192,044	**862,974**	87,019	583,639	200,430	**871,088**
Nov	80,801	394,295	143,217	**618,313**	76,128	392,929	162,079	**631,136**
Dec	78,001	404,702	157,622	**640,325**	74,705	406,109	180,139	**660,953**
Totals	**1,027,548**	**6,350,812**	**2,252,803**	**9,631,163**	**989,413**	**6,325,010**	**2,396,348**	**9,710,771**

2.8. Movements by ten largest operators

Operator	**Movements**	**%**
EASYJET	32,348	45%
WIZZ AIR	17,185	24%
RYANAIR	9,331	13%
MONARCH AIRLINES	3,779	5%
THOMSON AIRWAYS	2,275	3%
BLUE AIR	966	1%
EUROPEAN AIR TRANSPORT	910	1%
ATLANTIC AIRLINES	615	1%
EL AL	588	1%
FLYBE	526	1%
Others	3,397	5%
Total	**71,920**	**100%**

N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.



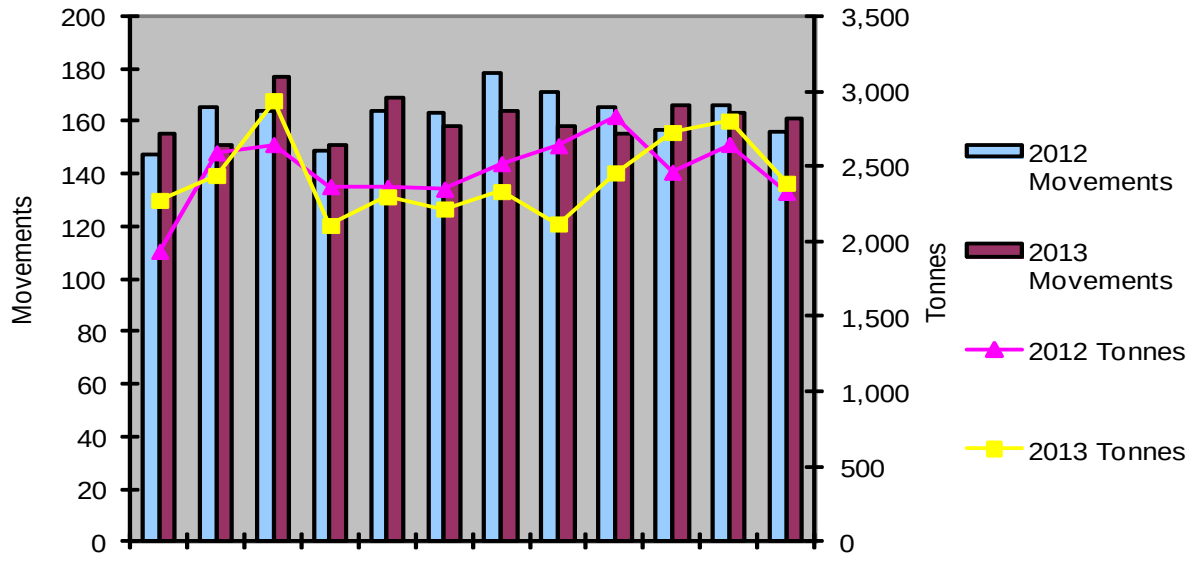
2.9. Movements and average seats by aircraft type

		Movements	Average Seats
EASYJET	AIRBUS A319	25,751	156
	AIRBUS A320	6,449	180
	AIRBUS A320 (SHARKLETS)	148	180
	Total	**32,348**	**162**
WIZZ AIR	AIRBUS A320	16,154	181
	AIRBUS A320 (SHARKLETS)	1,031	181
	Total	**17,185**	**181**
RYANAIR	BOEING 737-800 WINGLETS	9,331	189
	Total	**9,331**	**189**
MONARCH AIRLINES	AIRBUS A320	1,723	174
	AIRBUS A320 (SHARKLETS)	55	174
	AIRBUS A321	1,982	214
	BOEING 737-400 PASSENGER	8	168
	BOEING 757-200 PASSENGER	11	230
	Total	**3,779**	**197**
THOMSON AIRWAYS	BOEING 737-800 WINGLETS	1,676	189
	BOEING 757-200 PASSENGER	98	235
	BOEING 757-200 WINGLETS	499	233
	BOEING 767-300ER	2	265
	Total	**2,275**	**202**
BLUE AIR	AIRBUS A320	12	160
	BOEING 737-300 PASSENGER	64	141
	BOEING 737-400 PASSENGER	844	162
	BOEING 737-500	8	126
	MCD DOUGLAS MD-82	16	160
	MCD DOUGLAS MD-83	22	165
	Total	**966**	**161**
EUROPEAN AIR TRANSPORT	AIRBUS A300-600 FREIGHTER	872	N/A
	AIRBUS A300-B4/C4/F4 FREIGHTER	2	N/A
	BOEING 737-300 FREIGHTER	7	N/A
	BOEING 757-200 FREIGHTER	29	N/A
	Total	**910**	N/A
ATLANTIC AIRLINES	BAE ATP FREIGHTER	616	N/A
	Total	**616**	N/A
EL AL	BOEING 737-700	5	104
	BOEING 737-800	3	154
	BOEING 737-800 WINGLETS	221	153
	BOEING 767-200ER	104	189
	BOEING 767-300 PASSENGER	33	228
	BOEING 767-300ER	186	222
	BOEING 777-200ER	36	279
	Total	**588**	**202**
FLYBE	DE HAVILLAND DHC-8 DASH 8-400	512	78
	EMBRAER 175	2	88
	EMBRAER 195	12	118
	Total	**526**	**80**
Others	**Total**	**3,397**	**50**
Total		**71,920**	**174**

2.10. Total Cargo Movements & Tonnage

	2012		2013	
	Tonnes	Movements	Tonnes	Movements
Jan	1,934	147	2,274	155
Feb	2,590	165	2,439	151
Mar	2,645	164	2,937	177
Apr	2,365	149	2,106	151
May	2,361	164	2,298	169
Jun	2,348	163	2,216	158
Jul	2,518	178	2,332	164
Aug	2,637	171	2,117	158
Sep	2,832	165	2,457	155
Oct	2,461	157	2,726	166
Nov	2,646	166	2,802	163
Dec	2,327	156	2,388	161
Total	**29,663**	**1,945**	**29,092**	**1,928**

N.B The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because a proportion of cargo tonnage is carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in section 2.1 which shows dedicated cargo movements.



3. Routes

Destination	Code	Country	Charter Operator	Scheduled Operator
Aberdeen	ABZ	UK		easyJet
Alghero	AHO	Sardinia		Ryanair
Alicante	ALC	Spain		easyJet/Monarch
Amsterdam	AMS	Netherlands		easyJet
Antalya	AYT	Turkey	Thomson	
Arrecife	ACE	Spain (Canaries)	Thomson/Monarch	Monarch / Ryanair
Bacau	BCM	Romania		Blue Air
Barcelona	BCN	Spain		easyJet
Belfast Intl	BFS	UK		easyJet
Belgrade	BEG	Serbia		Wizz Air
Berlin	SXF	Germany		easyJet
Beziers	BZR	France		Ryanair
Bodrum	BJV	Turkey	First Choice/Thomson	Monarch
Bordeaux	BOD	France		easyJet
Bourgas	BOJ	Bulgaria	Thomson	Wizz Air
Bratislava	BTS	Slovakia		Ryanair
Brno	BRQ	Czech Rep		Wizz Air
Bucharest	BBU	Romania		Wizz Air / Blue Air
Budapest	BUD	Hungary		Wizz Air/easyJet
Chisinau	KIV	Moldova		Carpatair
Cluj-Napoca	CLJ	Romania		Wizz Air
Corfu	CFU	Greece	Thomson	Monarch / easyJet
Craiova	CRJ	Romania		Wizz Air
Dalaman	DLM	Turkey	First Choice/Thomson	Monarch
Debrecen	DEB	Hungary		Wizz Air
Dortmund	DTM	Germany		easyJet
Dublin	DUB	Ireland		Ryanair
Edinburgh	EDI	UK		easyJet
Faro	FAO	Portugal	First Choice/Thomson	easyJet/Monarch
Fuerteventura	FUE	Spain (Canaries)	First Choice/Thomson	Monarch/Ryanair
Funchal	FNC	Portugal (Madeira)	Thomson	
Gdansk	GDN	Poland		Wizz Air
Geneva	GVA	Switzerland		easyJet
Gerona	GRO	Spain		Ryanair
Gibraltar	GIB	Spain		Monarch
Glasgow	GLA	UK		easyJet
Grenoble	GNB	France		easyJet
Hamburg	HAM	Germany		easyJet
Heraklion	HER	Greece	Thomson	easyJet
Iasi	IAS	Romania		TAROM
Ibiza	IBZ	Spain (Balearics)	Thomson/First Choice	easyJet/Monarch
Inverness	INV	UK		easyJet
Istanbul	SAW	Turkey		easyJet
Katowice	KTW	Poland		Wizz Air
Kaunas	KUN	Lithuania		Wizz Air
Kefalonia	KEF	Greece	Thomson	
Kerry	KIR	Ireland		Ryanair
Kiev	IEV	Ukraine		Wizz Air
Kittila	KTT	Finland	Thomson	

Destination	Code	Country	Charter Operator	Scheduled Operator
Kosice	KSC	Slovakia		Wizz Air
Knock	NOC	Ireland		Ryanair
Larnaca	LCA	Cyprus	First Choice/Thomson	Monarch
Las Palmas	LPA	Spain (Canaries)	First Choice/Thomson/Monarch	Monarch / Ryanair
Lisbon	LIS	Portugal		easyJet
Ljubljana	LJU	Slovenia		Wizz Air
Lublin	LUZ	Poland		Wizz Air
Madrid	MAD	Spain		easyJet
Mahon	MAH	Spain (Balearics)	First Choice/Thomson/Monarch	easyJet/Monarch
Malaga	AGP	Spain	Thomson	easyJet/Monarch
Malta	MLA	Malta	Thomson	Ryanair
Marrakech	RAK	Morocco		Ryanair
Milan	MXP	Italy		easyJet
Monastir	MIR	Tunisia	First Choice/Thomson	
Montpellier	MPL	France		easyJet
Munich	MUC	Germany		Monarch
Murcia	MJV	Spain		Ryanair
Mykonos	MYK	Greece		easyJet
Nice	NCE	France		easyJet
Nimes	FNI	France		Ryanair
Olbia	OLB	Italy		easyJet
Palma	PMI	Spain (Balearics)	First Choice/Thomson/Monarch	easyJet/Monarch
Paphos	PFO	Cyprus	First Choice/Thomson	easyJet
Paris	CDG	France		easyJet
Pisa	PSA	Italy		easyJet
Poznan	POZ	Poland		Wizz Air
Prague	PRG	Czech Rep		Wizz Air
Reykjavik	RKV	Iceland		easyJet
Reus	REU	Spain	Thomson	Ryanair
Rhodes	RHO	Greece	Thomson	
Riga	RIX	Latvia		Wizz Air
Rome	FCO	Italy		Monarch
Rovaniemi	RVN	Finland	Thomson	
Rzeszów	RZZ	Poland		Ryanair
Salzburg	SZG	Austria	Thomson	easyJet
Sharm El Sheikh	SSH	Egypt	Thomson	easyJet/Monarch
Sofia	SOF	Bulgaria		Wizz Air
Skopje	SKP	Macedonia		Wizz Air
Split	SPU	Croatia		Wizz Air
Tel Aviv	TLV	Israel		El Al / easyJet
Tenerife	TFS	Spain (Canaries)	First Choice/Thomson/Monarch	Monarch / Ryanair
Thessalonika	SKG	Greece	Thomson	
Timisoara	TSR	Romania		Wizz Air
Tirgu Mures	TGM	Romania	Wizz Air	
Trapani	TPS	Italy (Sicily)		Ryanair
Varna	VAR	Bulgaria		Wizz Air
Vilnius	VNO	Lithuania	Wizz Air / Ryanair	
Warsaw	WAW	Poland		Wizz Air
Wroclaw	WRO	Poland		Wizz Air
Zakynthos	ZTH	Greece	Thomson/Monarch	
Zurich	ZRH	Switzerland		easyJet

(Destinations available as at 31st December 2013)

New route for 2013

For more information visit:- www.london-luton.co.uk

3.1 New Routes

NEW ROUTES 2013

Destination	Country	Launch	Airline
Chisinau	Moldova	19-Dec-13	Carpatair
Sharm El Sheikh	Egypt	07-Nov-13	Monarch
Iasi	Romania	29-Oct-13	TAROM
Craiova	Romania	29-Oct-13	Wizz Air
Donetsk*	Ukraine	02-Oct-13	Wizz Air
Kosice	Slovakia	17-Sep-13	Wizz Air
Olbia	Italy	15-May-13	easyJet
Mykonos	Greece	26-Apr-13	easyJet

**Routes started and ended in 2013*

2013	
AIRLINE	**NEW ROUTES**
Wizz Air	3
easyJet	2
Monarch	1
Carpatair	1
TAROM	1
TOTAL	**8**
NETT 2013	**3**

ALL ROUTES ENDING 2013

Destination	Country	Ended	Airline
Jersey	UK	27-Oct-13	Flybe
Isle of Man	UK	27-Oct-13	Flybe
Lodz	Poland	30-May-13	Wizz Air
Waterford	Ireland	06-Jan-13	Aer Lingus Regional

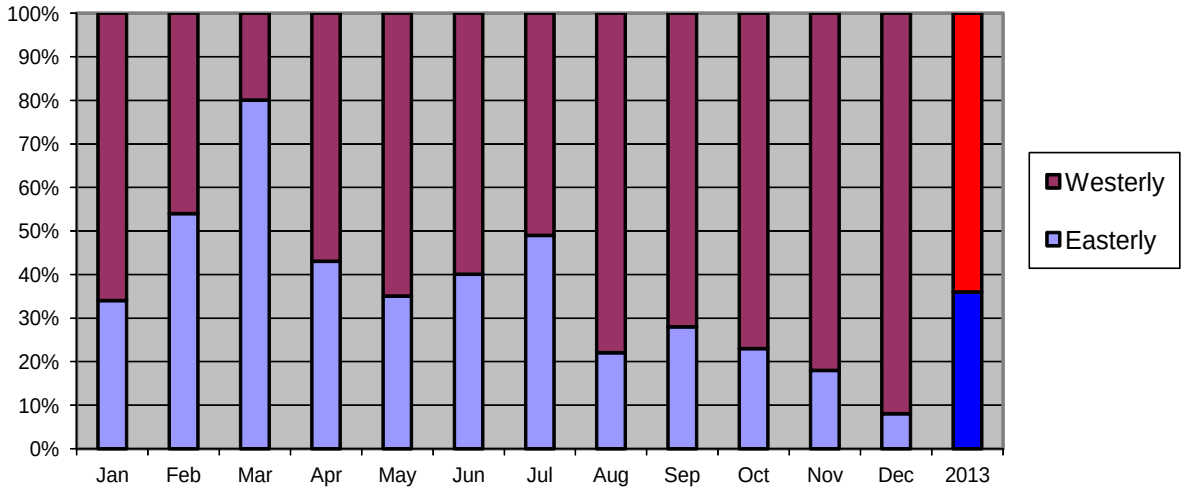
AIRLINE	ROUTES ENDED
Aer Lingus Regional	1
Wizz Air	2
Flybe	2
TOTAL	**5**

4. Runway Usage

The runway usage split (dictated primarily by wind direction) during 2013 was 36% easterly and 64% westerly (compared to 27% / 73% in 2012). A monthly breakdown is shown below, highlighting higher than average levels of easterly operations over the spring period, particularly during March 2013, in contrast to prolonged and sustained spells of westerly operations towards the end of the year, especially in December 2013. A breakdown of runway usage over the last five years is also shown, giving a historical split of 31% easterly and 69% westerly.

Year	Easterly	Westerly
2013	36%	64%
2012	27%	73%
2011	28%	72%
2010	36%	64%
2009	28%	72%
Average	**31%**	**69%**

Month	Easterly	Westerly
Jan	34%	66%
Feb	54%	46%
Mar	80%	20%
Apr	43%	57%
May	35%	65%
Jun	40%	60%
Jul	49%	51%
Aug	22%	78%
Sep	28%	72%
Oct	23%	77%
Nov	18%	82%
Dec	8%	92%
2013	**36%**	**64%**



4.1. Runway split of aircraft movements during 92-day summer period

In the UK it is standard practice to average noise levels over a 16 hour daytime period (07:00–23:00, local time) and a 92-day summer season (16th June – 15th September). As part of the Night Noise Policy, LLA also produces an 8 hour night-time contour on a quarterly basis.

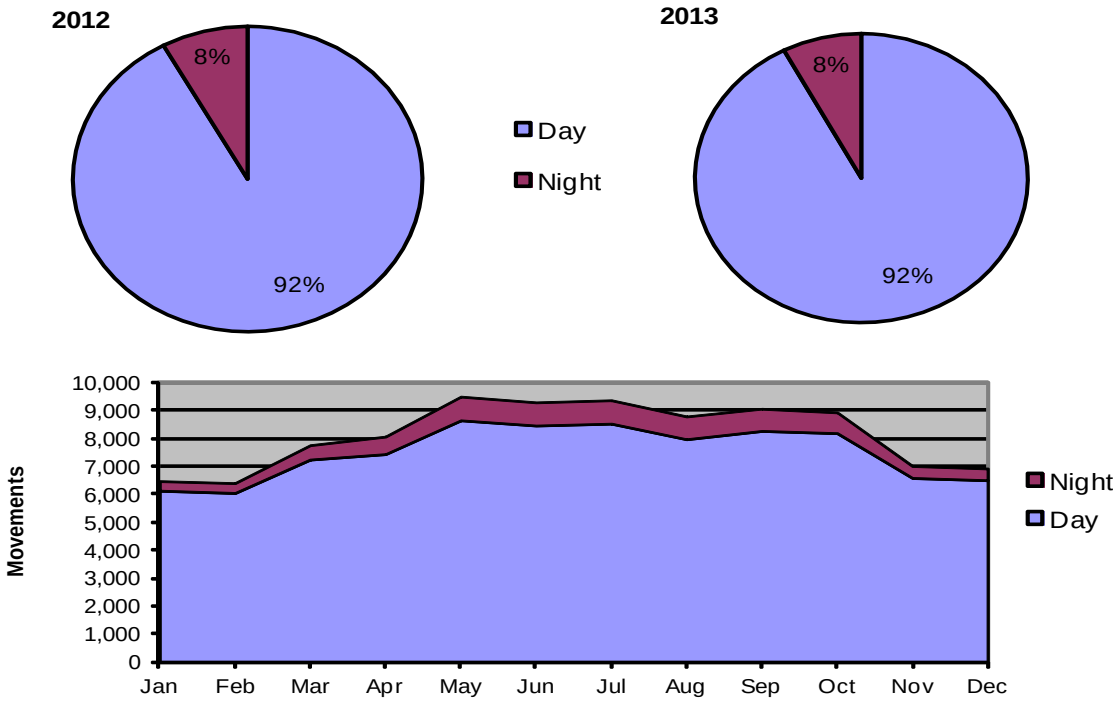
	Day (0700-2300 local)		Night (2300-0700 local)	
Year	Westerly	Easterly	Westerly	Easterly
2013	71%	29%	72%	28%
2012	86%	14%	86%	14%
2011	80%	20%	81%	19%
2010	78%	22%	76%	24%
2009	81%	19%	80%	20%
Average	**79%**	**21%**	**79%**	**21%**

4.2. Day / Night Ratio of Movements

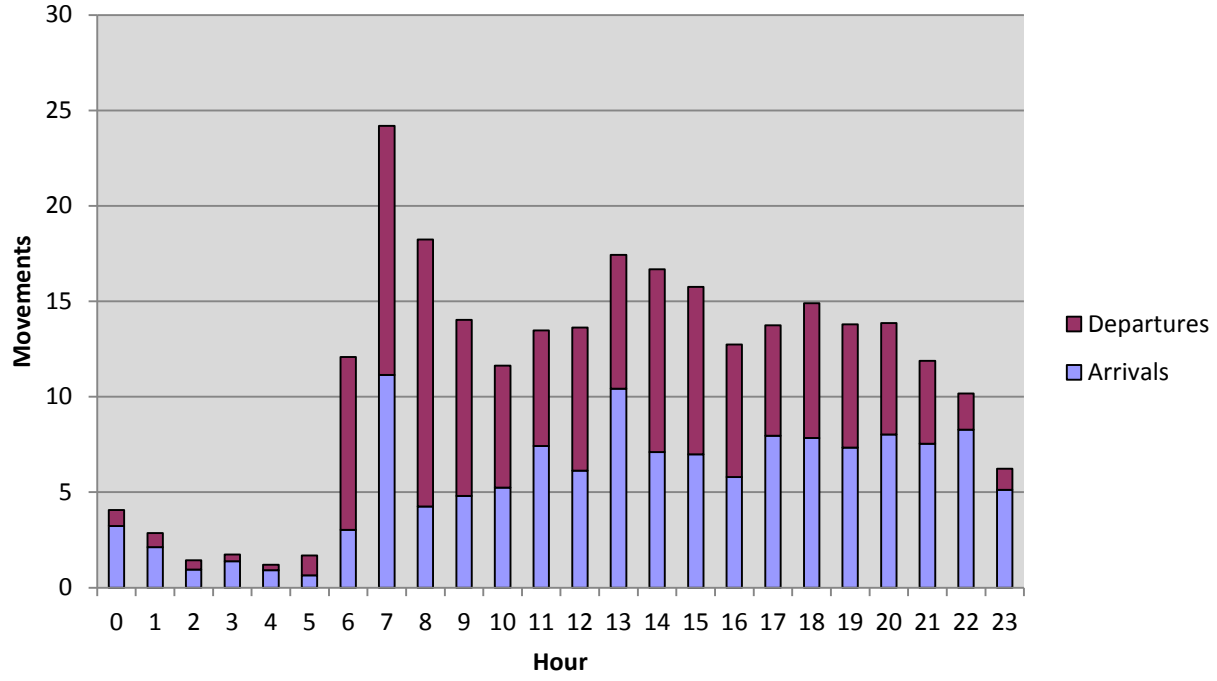
There were 7,557 night movements during 2013 (compared to 8,095 for 2012, a decrease of 7%), an average 21 movements per night (compared to 22 last year). Arriving aircraft accounted for 71% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft landing back at the Airport for the night, between 23:00 hrs and midnight. The average ratio of total aircraft movements during 2013 was 92% day / 8% night (in line with 92% day / 8% night in 2012).

The number of night movements quoted here within Section 4.2 will differ from those within Section 6 as the 8 hour Leq contour calculation period extends between 23:00 - 07:00, 7 days a week. The figures quoted here cover the night period, as defined in the Night Noise Policy for noise violation purposes, 23:00 until 06:00, Mon-Sat and until 07:00 on Sundays.

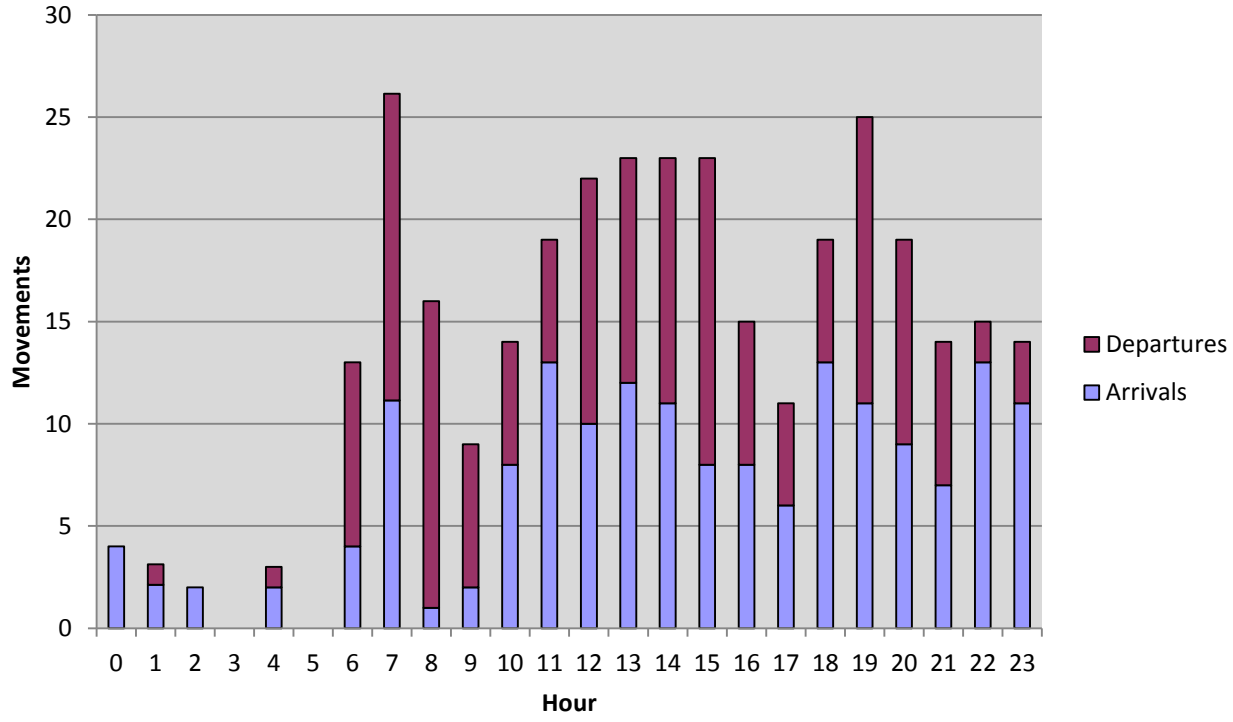
	Arrivals		Departures		Totals		
	Day	Night	Day	Night	Day	Night	Total
Jan	3,015	232	3,116	111	6,131	343	6,474
Feb	2,980	218	3,068	133	6,048	351	6,399
Mar	3,537	330	3,712	182	7,249	512	7,761
Apr	3,601	453	3,841	176	7,442	629	8,071
May	4,128	626	4,525	223	8,653	849	9,502
Jun	4,036	616	4,430	215	8,466	831	9,297
Jul	4,031	633	4,504	205	8,535	838	9,373
Aug	3,764	630	4,211	186	7,975	816	8,791
Sep	3,949	599	4,324	198	8,273	797	9,070
Oct	3,926	548	4,266	198	8,192	746	8,938
Nov	3,248	257	3,338	171	6,586	428	7,014
Dec	3,197	253	3,311	164	6,508	417	6,925
Total	**43,412**	**5,395**	**46,646**	**2,162**	**90,058**	**7,557**	**97,615**



4.3. Annual Average Hourly Movements



4.4. Hourly Movements on the 7th Busiest Day of 2013 (7th July)



Generally the busiest times of the day for annual average hourly movements during 2013 were 07:00-09:00 hrs, with smaller peaks 13:00-16:00 hrs. However, on the 7th July 2013 the peaks were 07:00–08:00 hrs, 12:00–16:00 hrs, and 19:00 –20:00 hrs.

The average busiest time for departing aircraft was 07:00-09:00 hrs annually and 07:00-09:00 hrs on 7th July 2013, with another peak between 15:00-16:00. The average busiest time for arrivals was 07:00-08:00 and 13:00-14:00 hrs annually, whilst the 7th busiest day saw peaks of arriving traffic at various times throughout

the day. The above graphs indicate a low level of average movements during the hours of 00:00–06:00 hrs, both annually and on the 7th busiest day of the year.

4.5. Departure Route Analysis

The following table reports the total number of departures on each flight route, differentiating between easterly (08) and westerly (26) operations. Night movements quoted below departed between 23:00 - 06:00, Mon-Sat and until 07:00 on Sunday.

		Clacton*		Compton		Olney		Other**		Heli	Total
		08	26	08	26	08	26	08	26		
Jan	Day	527	1,075	326	627	163	343	9	39	7	3,116
	Night	15	26	16	36	5	13	0	0	0	111
	Total	*542*	*1,101*	*342*	*663*	*168*	*356*	*9*	*39*	*7*	*3,227*
Feb	Day	822	681	536	492	253	225	28	17	14	3,068
	Night	35	22	33	21	12	5	5	0	0	133
	Total	*857*	*703*	*569*	*513*	*265*	*230*	*33*	*17*	*14*	*3,201*
Mar	Day	1,467	334	1,014	266	457	106	41	10	17	3,712
	Night	59	17	67	10	17	7	5	0	0	182
	Total	*1,526*	*351*	*1,081*	*276*	*474*	*113*	*46*	*10*	*17*	*3,894*
Apr	Day	743	1,028	621	803	247	333	18	32	16	3,841
	Night	26	48	27	50	5	13	1	2	4	176
	Total	*769*	*1,076*	*648*	*853*	*252*	*346*	*19*	*34*	*20*	*4,017*
May	Day	686	1,329	604	1,154	246	429	29	31	17	4,525
	Night	23	75	25	82	4	8	1	2	3	223
	Total	*709*	*1,404*	*629*	*1,236*	*250*	*437*	*30*	*33*	*20*	*4,748*
Jun	Day	820	1,180	648	1,057	277	373	25	27	23	4,430
	Night	43	61	30	53	9	10	1	3	5	215
	Total	*863*	*1,241*	*678*	*1,110*	*286*	*383*	*26*	*30*	*28*	*4,645*
Jul	Day	956	1,033	909	915	289	320	37	35	10	4,504
	Night	51	44	51	48	3	7	0	0	1	205
	Total	*1,007*	*1,077*	*960*	*963*	*292*	*327*	*37*	*35*	*11*	*4,709*
Aug	Day	410	1,408	353	1,375	137	445	9	55	19	4,211
	Night	21	62	16	77	1	5	0	3	1	186
	Total	*431*	*1,470*	*369*	*1,452*	*138*	*450*	*9*	*58*	*20*	*4,397*
Sep	Day	540	1,398	462	1,224	161	453	16	47	23	4,324
	Night	27	54	26	70	5	13	0	1	2	198
	Total	*567*	*1,452*	*488*	*1,294*	*166*	*466*	*16*	*48*	*25*	*4,522*
Oct	Day	433	1,520	391	1,191	149	504	20	39	19	4,266
	Night	18	63	15	63	9	24	2	1	3	198
	Total	*451*	*1,583*	*406*	*1,254*	*158*	*528*	*22*	*40*	*22*	*4,464*
Nov	Day	294	1,387	188	798	107	479	11	49	25	3,338
	Night	12	64	13	60	2	17	0	3	0	171
	Total	*306*	*1,451*	*201*	*858*	*109*	*496*	*11*	*52*	*25*	*3,509*
Dec	Day	146	1,506	67	944	46	532	10	47	13	3,311
	Night	8	73	2	51	4	19	0	4	3	164
	Total	*154*	*1,579*	*69*	*995*	*50*	*551*	*10*	*51*	*16*	*3,475*
Day Total		*7,844*	*13,879*	*6,119*	*10,846*	*2,532*	*4,542*	*253*	*428*	*203*	*46,646*
Night Total		*338*	*609*	*321*	*621*	*76*	*141*	*15*	*19*	*22*	*2,162*
Grand Total		8,182	14,488	6,440	11,467	2,608	4,683	268	447	225	48,808

** Clacton/Dover/Detling departures have been merged as the immediate flight routes follow the same path.*

*** This category relates to those aircraft that are not required to follow Noise Preferential Routes, such as Test/Training flights.*

4.6. Arrivals Route Analysis

The following table reports the total number of arrivals, differentiating between easterly (08) and westerly (26) operations. Night movements quoted below arrived between 23:00 - 06:00, Mon-Sat and until 07:00 on Sunday. This report also includes percentage figures for flights that have achieved a Continuous Descent Approach (CDA), helping reduce both noise and fuel consumption, which involves continuous descent with no more than one section of level flight greater than 2.5Nm in length, following descent from 5000ft altitude.

		Arrivals				CDA*		
		08	26	Heli	Total	08 (%)	26 (%)	Total (%)
Jan	Day	1,024	1,984	7	3,015	85	83	**84**
	Night	93	139	0	232	79	84	**82**
	Total	***1,117***	***2,123***	***7***	***3,247***	***85***	***83***	***84***
Feb	Day	1,594	1,373	13	2,980	87	86	**87**
	Night	121	97	0	218	75	72	**74**
	Total	***1,715***	***1,470***	***13***	***3,198***	***86***	***85***	***86***
Mar	Day	2,802	718	17	3,537	88	85	**88**
	Night	269	61	0	330	78	84	**79**
	Total	***3,071***	***779***	***17***	***3,867***	***87***	***85***	***87***
Apr	Day	1,593	1,988	20	3,601	89	89	**89**
	Night	201	251	1	453	83	89	**86**
	Total	***1,794***	***2,239***	***21***	***4,054***	***89***	***89***	***89***
May	Day	1,564	2,551	13	4,128	92	88	**89**
	Night	158	466	2	626	87	87	**87**
	Total	***1,722***	***3,017***	***15***	***4,754***	***91***	***88***	***89***
Jun	Day	1,625	2,389	22	4,036	94	88	**91**
	Night	228	387	1	616	87	87	**87**
	Total	***1,853***	***2,776***	***23***	***4,652***	***93***	***88***	***90***
Jul	Day	1,992	2,027	12	4,031	95	93	**94**
	Night	325	308	0	633	90	87	**89**
	Total	***2,317***	***2,335***	***12***	***4,664***	***95***	***92***	***93***
Aug	Day	849	2,896	19	3,764	94	92	**93**
	Night	112	516	2	630	87	88	**88**
	Total	***961***	***3,412***	***21***	***4,394***	***93***	***92***	***92***
Sep	Day	1,101	2,820	27	3,949	93	91	**91**
	Night	184	415	0	599	89	85	**86**
	Total	***1,285***	***3,235***	***27***	***4,548***	***92***	***90***	***91***
Oct	Day	866	3,040	20	3,926	92	87	**88**
	Night	135	411	2	548	90	84	**84**
	Total	***1,001***	***3,451***	***22***	***4,474***	***89***	***86***	***88***
Nov	Day	593	2,632	23	3,248	90	84	**85**
	Night	48	209	0	257	89	77	**79**
	Total	***641***	***2,841***	***23***	***3,505***	***90***	***84***	***85***
Dec	Day	277	2,903	17	3,197	93	84	**85**
	Night	11	241	1	253	91	78	**78**
	Total	***288***	***3,144***	***18***	***3,450***	***93***	***83***	***84***
Day Total		***15,880***	***27,321***	***210***	***43,412***	***91%***	***88%***	***89%***
Night Total		***1,885***	***3,501***	***9***	***5,395***	***85%***	***85%***	***85%***
Grand Total		**17,765**	**30,822**	**219**	**48,807**	**90%**	**87%**	**88%**

4.7. Flight routes and sample flight tracks

Figures 4.9 and 4.10 show indicative flight routes for easterly and westerly operations. Flight routes shown are typical 3km swathes for departing aircraft on Noise Preferential Routings (NPRs) and arrivals which are established on final approach. Departure routes are valid up to an altitude of 3000ft during the daytime and 4000ft at night, after which time Air Traffic Control at the London Terminal Control Centre (LTCC) can give the aircraft a more direct heading.

Figures 4.11 and 4.12 display actual radar flight data taken over a 24 hour period during summer 2013 for both westerly and easterly operations. Arriving traffic is shown in red with departures in green.

Figures 4.13 and 4.14 show the same 24 hour periods as above, displaying the aircraft radar data in altitude bands up to 10,000ft above mean sea level. These radar tracks show a single mode of operation only i.e. easterly or westerly operations and include both arriving and departing aircraft.

Figures 4.15, 4.16 and 4.17 display aircraft track density plots for the summer period 16th June – 15th September 2013. A track density plot is a map which displays the pattern of aircraft flight tracks passing over the region around the Airport during a specified period. The system analyses the number of flights passing over each grid element of an array defined by the user.

The track density plot takes into account all London Luton aircraft and provides a useful indication of the general patterns for flight operations.

Figures 4.15 and 4.16 show arrivals or departures only, with 4.17 showing all LLA movements.

The colour coding from blue to yellow represents the range 3 to over 150 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element during the 92 day summer period was less than 3 flights.

The yellow areas represent locations where operations are more densely concentrated over the given period.

It should be noted that the following sample flight tracks only include operations for LLA and overflights from other airports have been omitted for clarity.

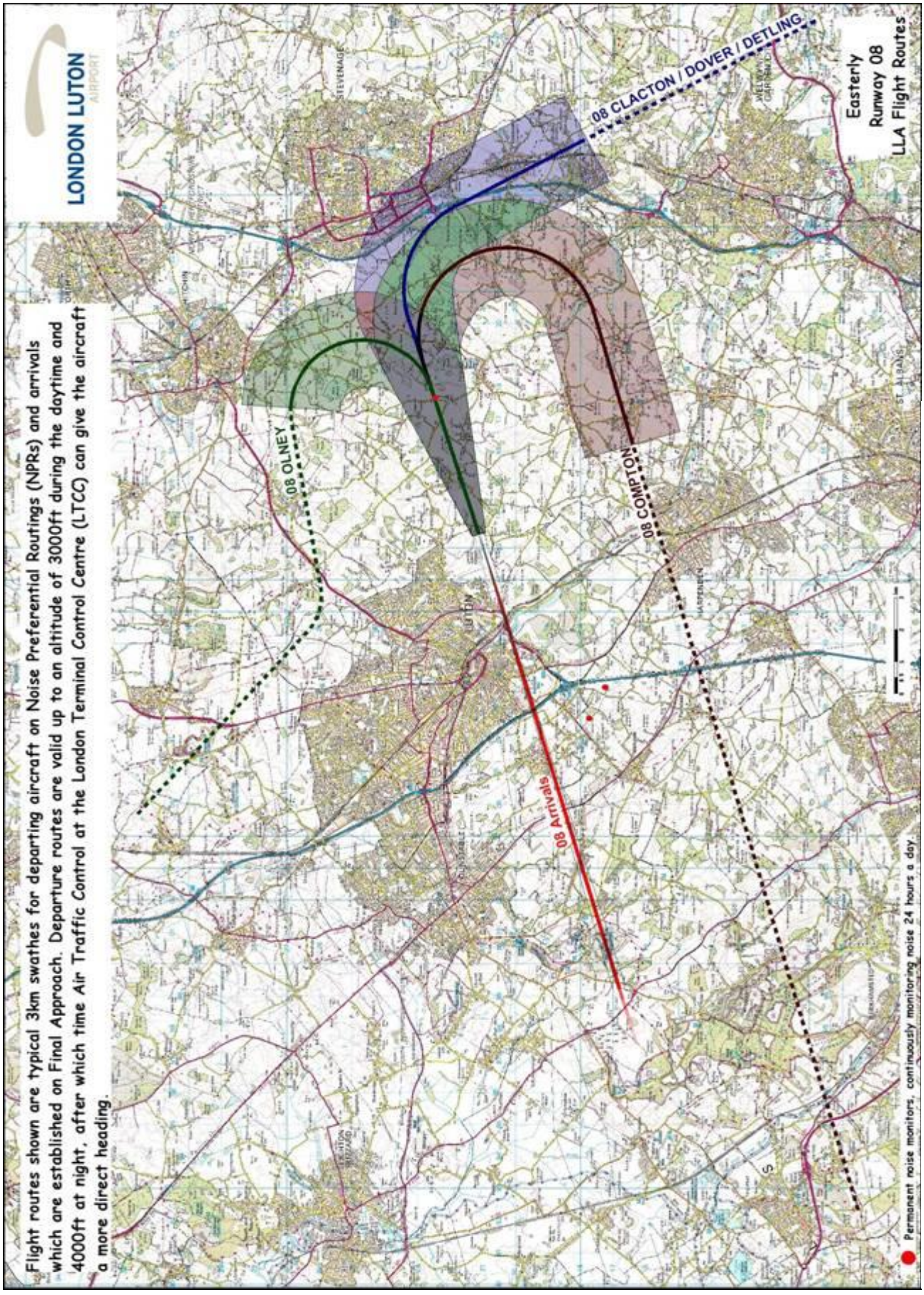
4.8. Brookmans Park Departure Routes

During westerly operations, all aircraft on the Clacton/Dover/Detling departure routes follow the same course until they reach a reporting point known as the Brookmans Park beacon. For over 10 years the Airport has been working with airlines, NATS (our Air Traffic Control provider) and the CAA to look at ways track keeping can be improved on this route, as aircraft routinely pass outside of the NPR corridor and overfly the northern parts of Hemel Hempstead and St. Albans. In 2011 a trial was undertaken with easyJet to determine if reducing the speed of aircraft from 230-250 knots to 220 knots on the second turn to the east and initiating the turn point around 1 nautical mile earlier, enabled aircraft to track closer to the nominal route centreline.

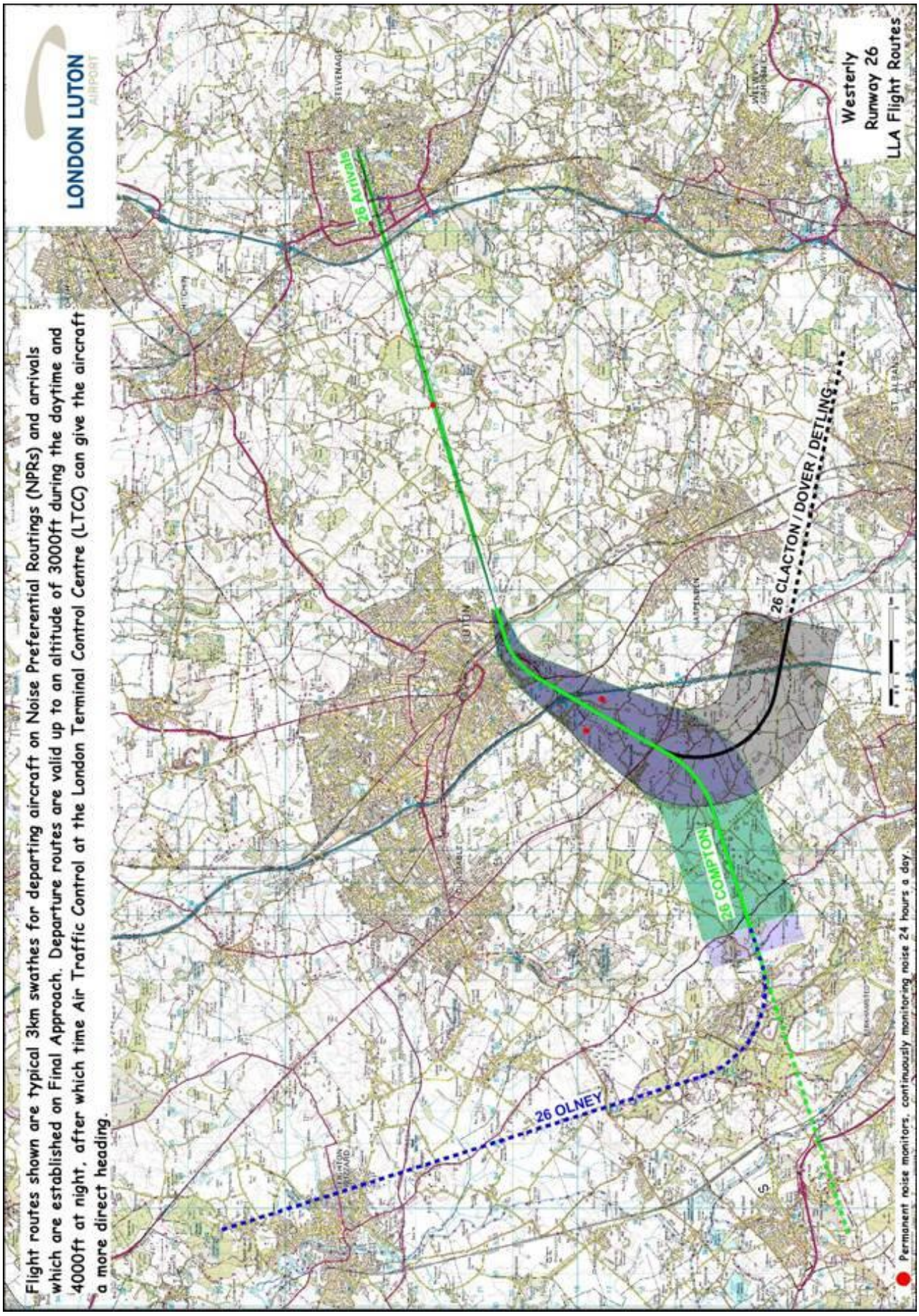
Whilst the easyJet trial was successful in terms of aircraft following the nominal track more closely, following extensive community feedback it became apparent that the nominal track centreline was not necessarily in the best place anymore to avoid centres of population, particularly in relation to Redbourn.

Further trials were carried out in 2013 using RNAV1 navigation procedures to determine whether track-keeping can be improved using this technology. Further information on the outcome of these trials and progress made to resolve this issue has been provided in Section 8.10.

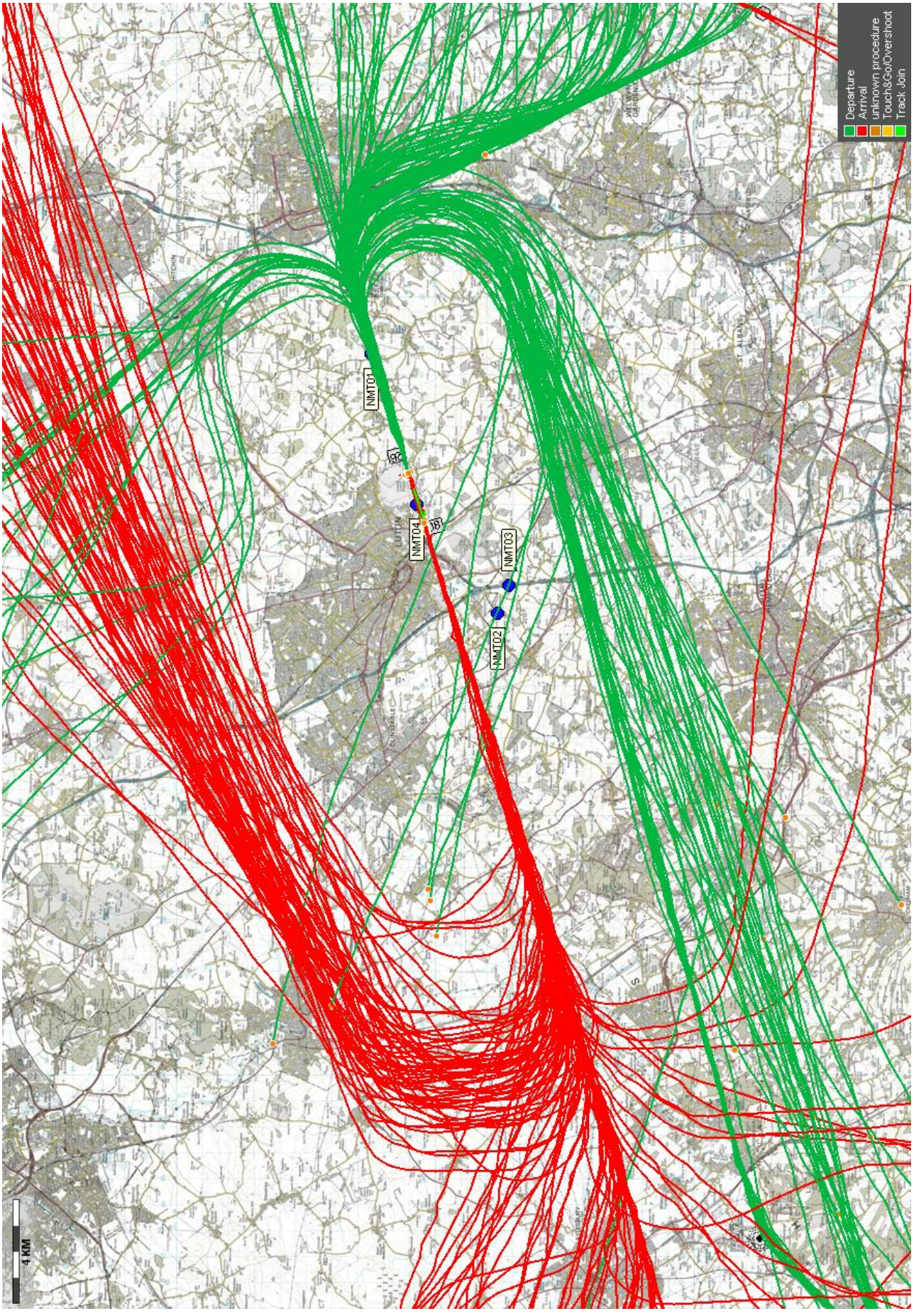
4.9. Plan showing Easterly (08) flight routes



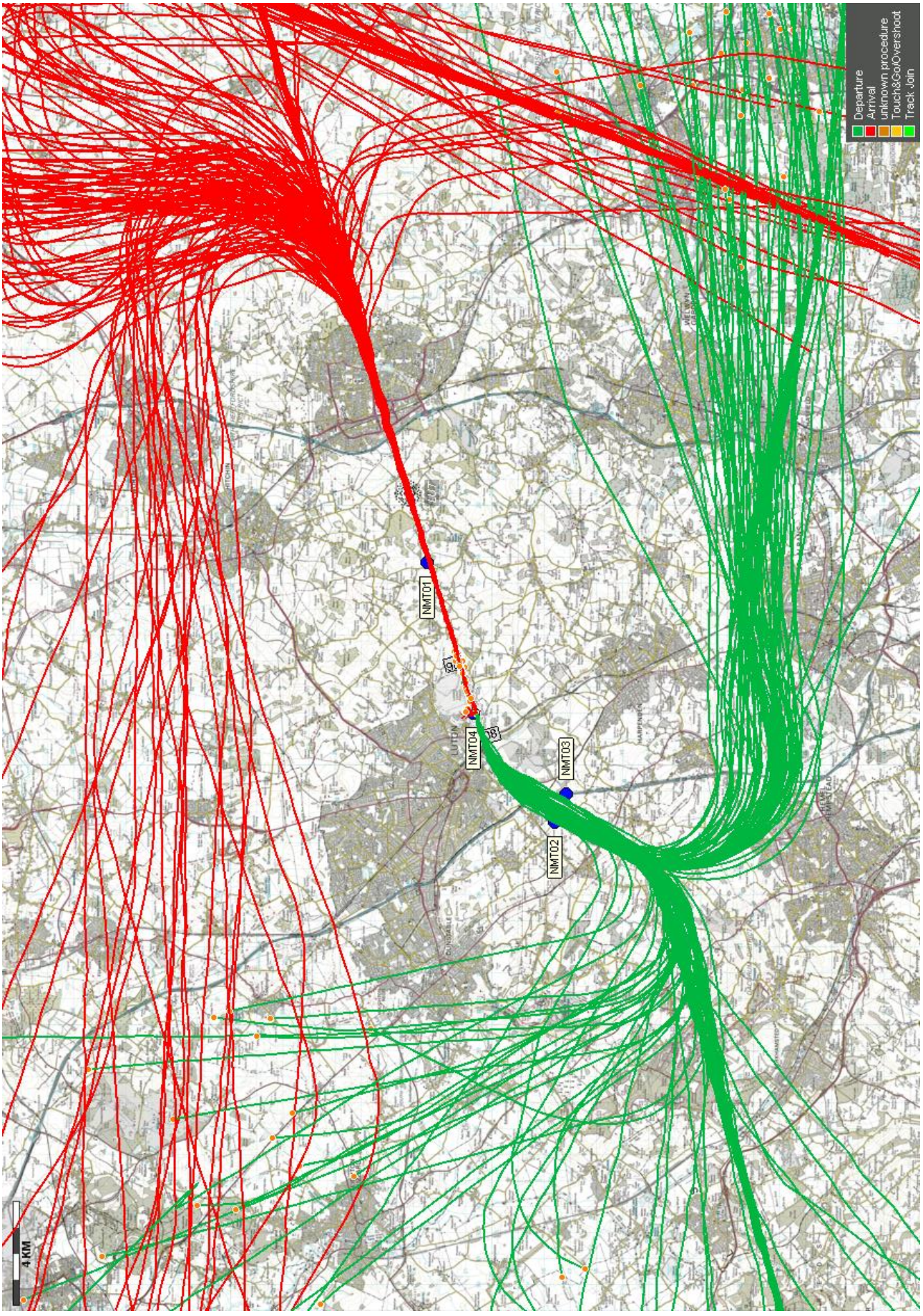
4.10. Plan showing Westerly (26) flight routes



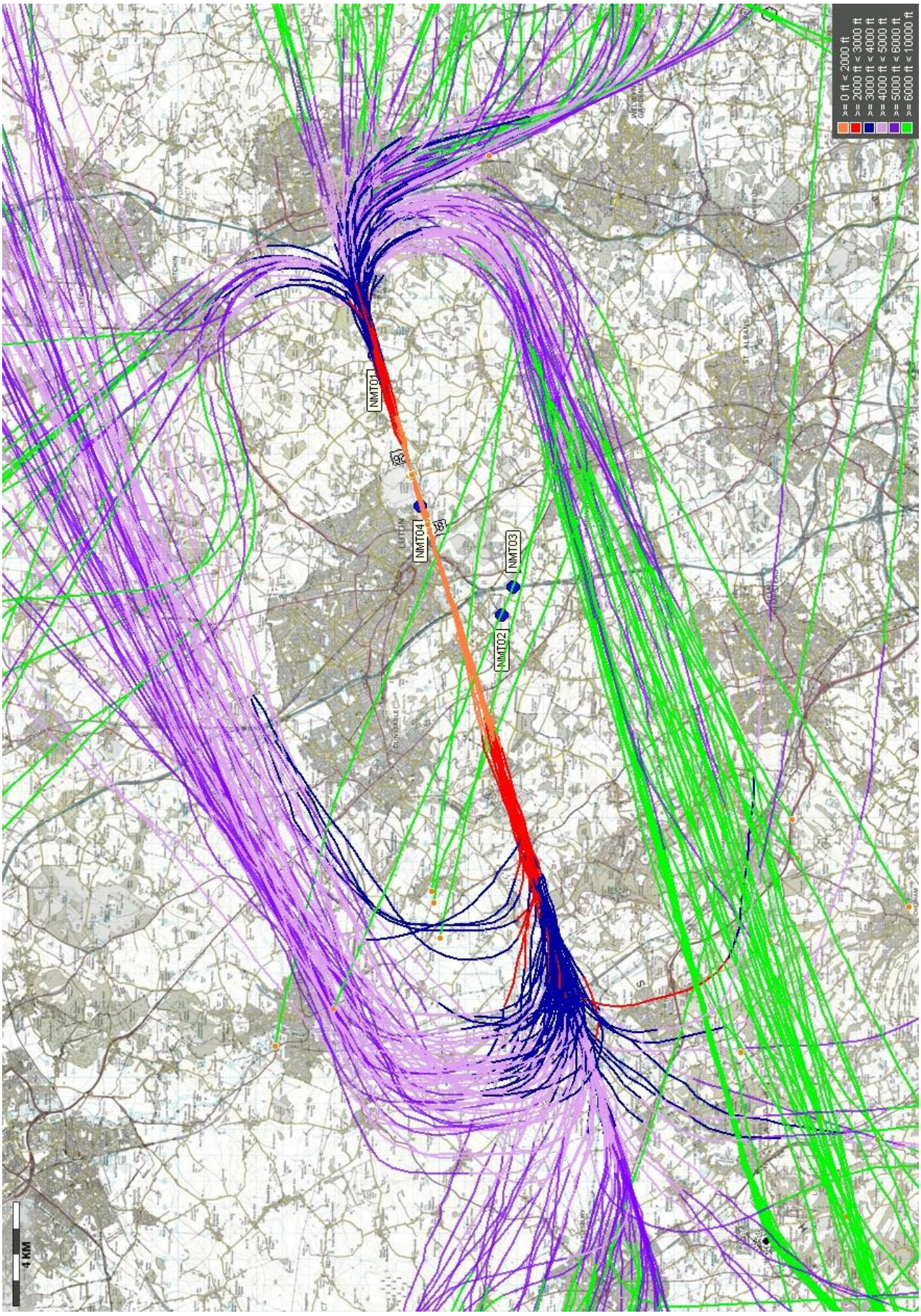
4.11. Arrivals and Departures – Easterly (08) Flight Routes (24 hour period)



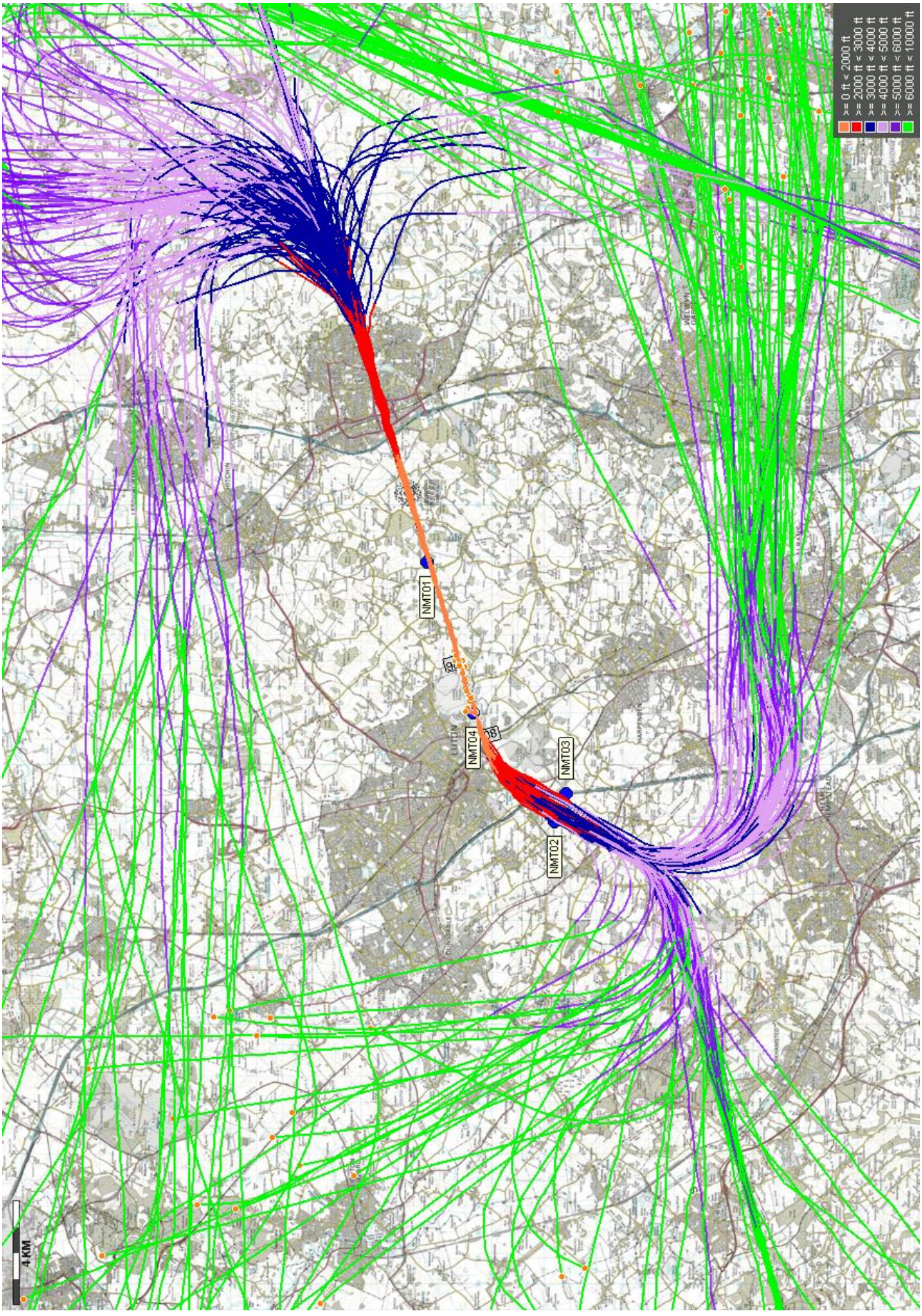
4.12. Arrivals and Departures – Westerly (26) Flight Routes (24 hour period)



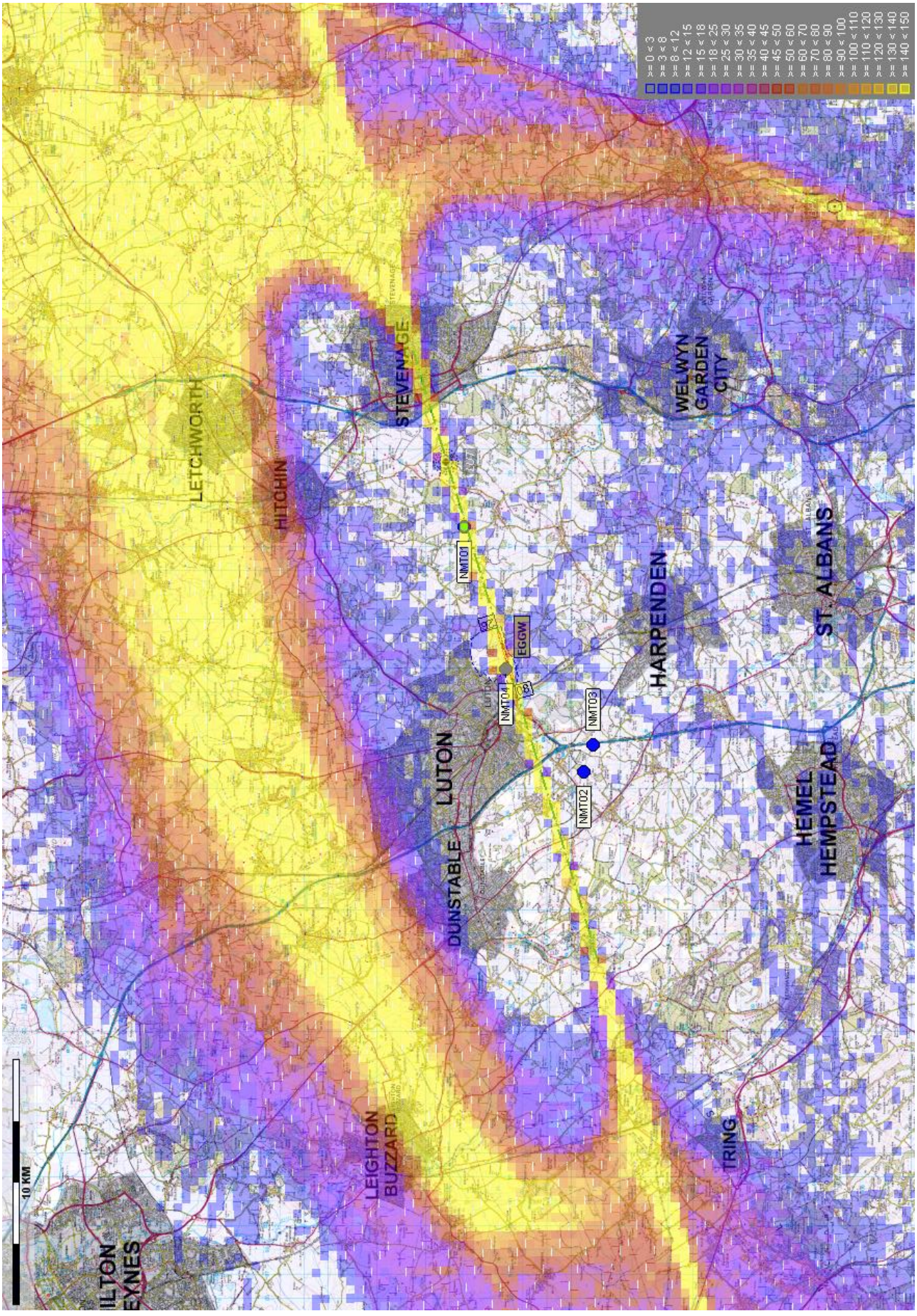
4.13. Flight Levels – Easterly (08) Flight Routes (24 hour period)



4.14. Flight Levels – Westerly (26) Flight Routes (24 hour period)

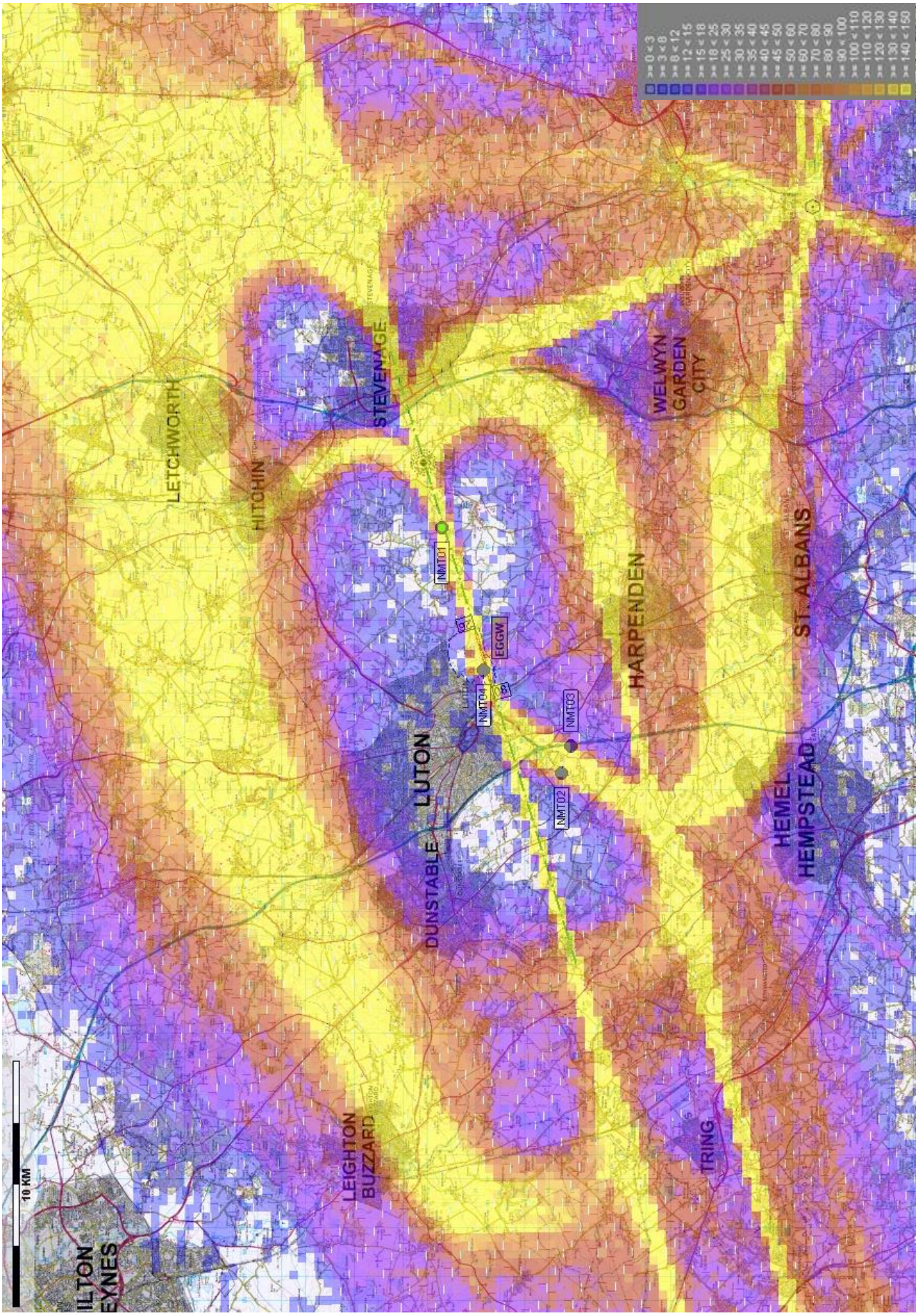


4.15. Plot Density – 16th June – 15th September 2013 - Arrivals only



4.16. Plot Density – 16th June – 15th September 2013 - Departures only

4.17. Plot Density – 16th June – 15th September 2013 - Arrivals and Departures



5. Noise Monitoring Data

The aircraft noise generated by the operation of the Airport has always been an important consideration and is incorporated in the planning framework for the area in which the Airport is located (see Section 11). Regard must be paid to the Borough of Luton Local Plan, so aircraft noise is monitored and reviewed by the LLACC on a quarterly basis.

Furthermore, in response to the Environmental Noise Directive (2002/49/EC), which requires all Member States within the European Union to produce Noise Maps and Action Plans for the main sources of environmental noise, including airports, a Draft Noise Action Plan was prepared by the Airport during 2009. This was produced in partnership with the LLACC, the Air Traffic Control provider and airline partners and a 16 week consultation period on this document was launched on 28th September 2009. Following consideration of consultation responses and taking into account these views, a final Draft Noise Action Plan was submitted to the Department for Environment, Food and Rural Affairs (DEFRA), for approval, at the end of January 2010. LLA published the final Noise Action Plan in January 2012, following formal adoption by the Secretary of State for Environment, Food and Rural Affairs. Under Section 7 of this report there is a progress update on the actions outlined within this Noise Action Plan.

A review of the LLA Noise Action Plan 2010-2015 was required by DEFRA in 2013 to incorporate updated noise mapping data from 2011. The updated version, covering the period 2013-2018 will be consulted on and submitted to DEFRA for approval once the planning decision and related conditions have been confirmed.

5.1. Departure Noise Levels

LLA uses the International Civil Aviation Organisation (ICAO) standard for noise monitoring at the Airport. This covers all times of the day and night and all seasons, but it is standard practice that only departures are reported. Figures 4.9 and 4.10 show the locations of the monitoring points, which are set at 6,500m from the aircraft start of roll, at either end of the runway. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area, which is separately measured by Leq. The maximum-recorded noise level for each departure is used. All aircraft type departures are recorded not just jets, however helicopters and small light aircraft are not required to follow Noise Preferential Routings (NPRs) so they will not be recorded.

The detection threshold for the noise monitoring terminals is set at the lowest level to record the maximum number of aircraft noise events. However, a number of smaller aircraft types such as business jets and propeller aircraft, typically with a Maximum Take-Off Weight (MTOW) of less than 30,000kg, get very close to but do not reach the detection threshold. Ambient background noise is also an important factor in detecting aircraft noise as strong winds and specific incidents such as loud road traffic, emergency vehicle sirens, lawn mowers, tractors, drills etc. can register noise levels louder than an aircraft overhead, which results in not all aircraft movements being correlated with noise events. Generally the louder noise events have more certainty of being correlated with aircraft movements.

During 2013 no departures exceeded the 94dB(A) daytime noise violation level, whilst there were 4 night noise violations (a combination of three A30B cargo jets and one B734 passenger jet aircraft). Continuous monitoring indicates that the vast majority of aircraft operated with individual maximum noise levels well below the current violation levels.

During the daytime 99% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 87% registering below 76dB(A) and 37% of correlated daytime departures registering below 73dB(A). Throughout the year 369 correlated daytime departures (1%) registered maximum noise levels above 79dB(A) but there were no daytime noise exceedences.

The night period is taken as 23:00 – 06:00 local time, Monday to Saturday, and until 07:00 on a Sunday. During the night 97% of correlated departures recorded maximum noise levels below 79dB(A), with 82% below 76dB(A) and 49% of correlated night departures registering below 73dB(A). During the year 40 correlated night departures (3%) registered maximum noise levels above 79dB(A) with 4 departures exceeding the night noise violation level of 82dB(A). Details of these noise penalties are listed in section 5.5.

5.2. Noise and Track Monitoring System

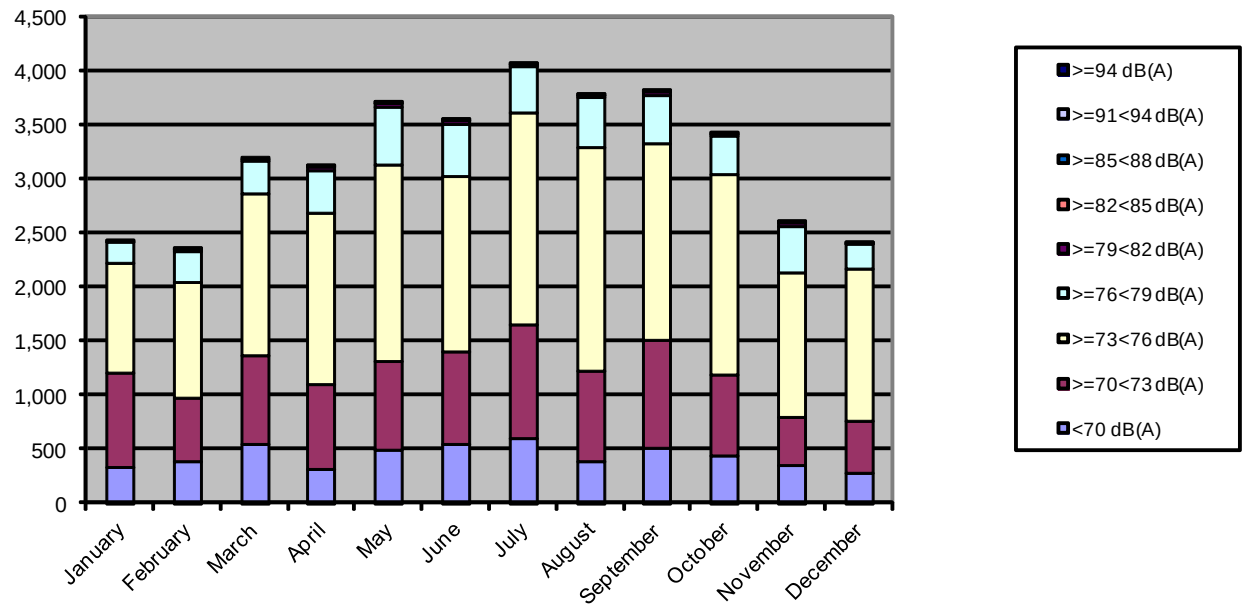
The Topsonic Noise and Track Monitoring system has been operational for 100% of the time during 2013. New features and system enhancements continue to improve the functionality and capabilities available to the Airfield Environment Office and the Topsonic system has been utilised in compiling the details within this report.

TraVis, an online flight-tracking tool enables the general public to see for themselves the actual flown tracks of LLA aircraft departures and arrivals. This can be viewed online at the following link on the airport website. http://www.london-luton.co.uk/en/flighttracking/ .

5.3. Daytime Noise Levels

The following table identifies maximum daytime noise levels recorded by departing aircraft at the fixed noise monitoring terminals between the hours of 06:00 and 23:00 local time, Monday to Saturday and from 07:00 until 23:00 on Sunday.
(Any aircraft exceeding the Daytime Noise Violation Limit of 94dB(A) is fined accordingly)

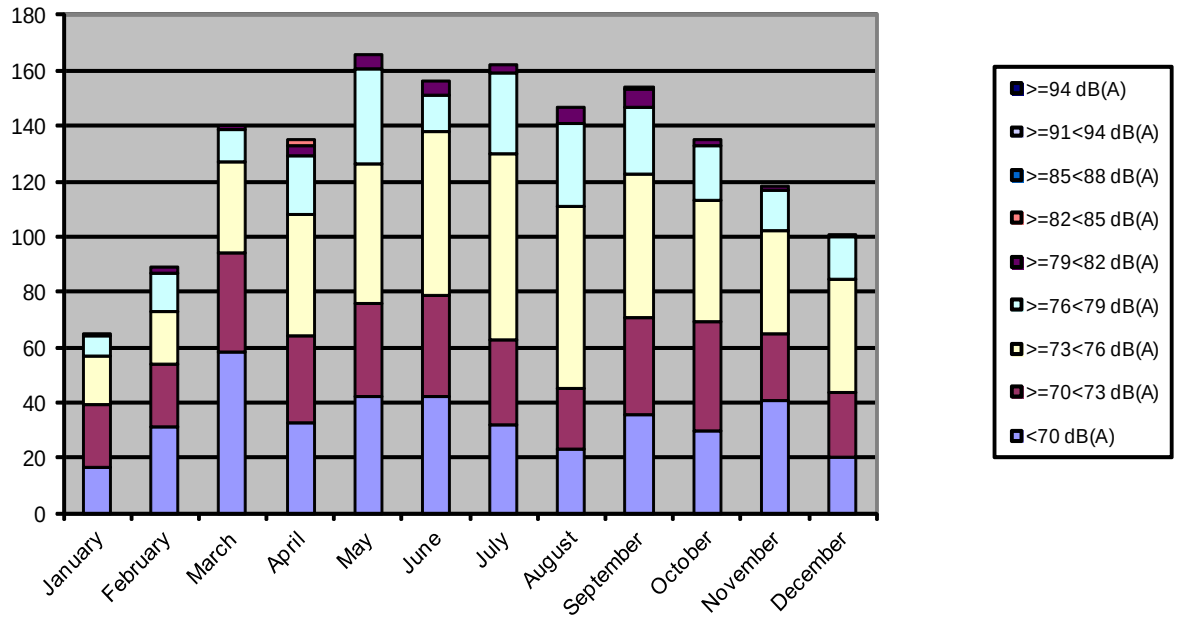
	Number of Departures (Daytime)										
	<70 dB(A)	**>=70<73 dB(A)**	**>=73<76 dB(A)**	**>=76<79 dB(A)**	**>=79<82 dB(A)**	**>=82<85 dB(A)**	**>=85<88 dB(A)**	**>=88<91 dB(A)**	**>=91<94 dB(A)**	**>=94 dB(A)**	**Total**
January	325	873	1,005	196	8	0	1	0	0	0	2,408
February	366	591	1,079	275	24	1	1	1	0	0	2,338
March	535	811	1,507	298	21	5	0	2	0	0	3,179
April	305	787	1,574	402	27	1	1	2	0	0	3,099
May	485	812	1,822	527	39	3	6	3	0	0	3,697
June	526	862	1,626	481	30	6	2	2	0	0	3,535
July	583	1,057	1,954	425	22	5	4	1	0	0	4,051
August	380	838	2,056	464	23	4	2	0	0	0	3,767
September	490	1,005	1,816	444	40	5	1	1	0	0	3,802
October	417	753	1,850	359	25	3	2	0	0	0	3,409
November	328	451	1,341	426	31	2	1	1	0	0	2,581
December	269	470	1,409	232	7	2	1	0	0	0	2,390
% Total	*13.1%*	*24.3%*	*49.8%*	*11.8%*	*0.8%*	*0.1%*	*0.1%*	*0.0%*	*0.0%*	*0.0%*	100.0%
Total	**5,009**	**9,310**	**19,039**	**4,529**	**297**	**37**	**22**	**13**	**0**	**0**	**38,256**



5.4. Night Noise Levels

The following table identifies maximum night-time noise levels recorded by departing aircraft at the fixed noise monitoring terminals between the hours of 23:00 and 06:00 local time, Monday to Saturday and until 07:00 on Sunday morning.
(Any aircraft exceeding the Night Noise Violation Limit of 82dB(A) is fined accordingly)

	Number of Departures (Night)										
	<70 dB(A)	>=70<73 dB(A)	>=73<76 dB(A)	>=76<79 dB(A)	>=79<82 dB(A)	>=82<85 dB(A)	>=85<88 dB(A)	>=88<91 dB(A)	>=91<94 dB(A)	>=94 dB(A)	Total
January	17	22	18	7	0	1	0	0	0	0	65
February	31	23	19	14	2	0	0	0	0	0	89
March	58	36	33	12	1	0	0	0	0	0	140
April	33	31	44	21	4	2	0	0	0	0	135
May	42	34	50	35	5	0	0	0	0	0	166
June	42	37	59	13	5	0	0	0	0	0	156
July	32	31	67	29	3	0	0	0	0	0	162
August	23	22	66	30	6	0	0	0	0	0	147
September	36	35	52	24	6	1	0	0	0	0	154
October	30	39	44	20	2	0	0	0	0	0	135
November	41	24	37	15	1	0	0	0	0	0	118
December	20	24	41	15	1	0	0	0	0	0	101
% Total	*25.8%*	*22.8%*	*33.8%*	*15.0%*	*2.3%*	*0.3%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*100%*
Total	**405**	**358**	**530**	**235**	**36**	**4**	**0**	**0**	**0**	**0**	**1,568**



5.5. Noise Violations

LLA operates a noise violation policy whereby a surcharge of between 300% and 600% of the combined Landing and Navigation Service Charge is applied in respect of any landing prior to a take-off on which noise violation levels, as set out below, are exceeded. These violation limits encourage airlines to operate modern and quieter aircraft types.

The daytime noise violation level of 94dB(A) is in line with the other major London airports whilst the current night noise violation level of 82dB(A) is now lower than at the designated London airports.

For Day Flights

06:00 – 22:59 Local Time (Monday to Saturday)
07:00 – 22:59 Local Time (Sunday)

>94 dB(A) 400% surcharge

For Night Flights

23:00 – 05:59 Local Time (Monday to Saturday)
23:00 – 06:59 Local Time (Sunday)

>82 – 85 dB(A) 300% surcharge

>85 – 88 dB(A) 500% surcharge

>88 dB(A) 600% surcharge

5.6. Daytime Noise Violations during 2013

There were no violations of the daytime noise level in 2013, in line with 2012.

5.7. Night Noise Violations during 2013

There were a total of 4 violations of the 82dB(A) night noise violation level in 2013 (details below), compared to 3 in 2012.

Date / Time (Local)	Aircraft Type	Noise Level	Penalty
11/01/2013 04:01 hrs	A30B (MNG Cargo)	82.6dB(A)	300% of runway charge
19/04/2013 02:50 hrs	A30B (MNG Cargo)	82.4dB(A)	300% of runway charge
26/04/2013 02:50 hrs	A30B (MNG Cargo)	82.5dB(A)	300% of runway charge
11/09/2013 01:13 hrs	B734 (Blue Air)	82.6dB(A)	300% of runway charge

6. Noise Contours

6.1. Leq

Since 1989 the preferred measure of aircraft noise has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK, the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700 – 2300 for an average day between the 16th June and 15th September. In addition, LLA also produces contours for the 8 hour night period between 2300 and 0700 for an average summer night in terms of the LAeq, 8h indicator.

The day-time contours show the LAeq,16h values in 3 dB(A) steps from 57 dB(A) to 72 dB(A). The night contours show the LAeq, 8h values also in 3 dB(A) starting at 48 dB(A). These values relate to guidance provided in Planning Policy Guidance Note 24 – Planning & Noise.

Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the Airport and also the departure routes flown. In addition, changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, known as the modal split, which is determined by the prevailing wind direction.

The Aircraft Noise Model

The noise contours for the Airport are produced using INM (the Integrated Noise Model) version 7.0d, which is the method used by many other airports in the UK.

The 2012 contours were produced using INM version 7.0c. On 30th May 2013, INM version 7.0d was released. The main changes in the new version relate to the addition of new aircraft types, although none of these currently operate in significant numbers at London Luton Airport. Following a validation exercise, it was concluded that the update does not have a significant effect on the contours.

6.2. Annual Noise Contours Summer 2013

Work has been completed on the production of the annual noise contours for summer 2013 covering the standard summer period from the 16th June to the 15th September inclusive, using the latest version of INM version 7.0d.

The day-time results for 2013 are shown below, together with the equivalent results for the previous summer. Figures for the base year of 1984 and the predicted contour for 1999 are also shown, for comparison purposes:

Contour areas (Daytime)

$L_{Aeq, 16\ hour}$ **Day-time**	***1984 (km^2)***	***1999 (km^2)***	**2012 *(km^2)***	**2013 *(km^2)***	**Difference 2012-2013 (km^2)**
>72	*1.63*	*1.5*	0.8	0.8	0.0
>69	*2.80*	*2.5*	1.4	1.3	-0.1
>66	*4.86*	*4.4*	2.6	2.3	-0.3
>63	*9.1*	*7.3*	5.2	4.8	-0.4
>60	*17.18*	*11.8*	8.7	8.4	-0.3
>57	***31.52***	***19.6***	**14.7**	**13.8**	**-0.9**

The night-time results for 2013 are shown below, together with the equivalent results for the previous summer. Figures for the base year of 1984 and the predicted contour for 1999 are also shown, for comparison purposes:

Contour areas (Night-time)

$L_{Aeq, 8\ hour}$ Night-time	*1984 (km^2)*	*1999 (km^2)*	2012 (km^2)	2013 (km^2)	Difference 2011-2012 (km^2)
>72	*0.79*	*1.1*	0.4	0.4	0.0
>69	*1.39*	*1.8*	0.6	0.6	0.0
>66	*2.42*	*3.0*	1.0	0.9	-0.1
>63	*4.01*	*5.2*	1.7	1.5	-0.2
>60	*7.06*	*8.3*	3.7	2.9	-0.8
>57	*13.05*	*13.2*	6.7	5.7	-1.0
>54	*24.48*	*21.6*	11.5	9.8	-1.7
>51	*44.92*	*36.0*	20.0	17.2	-2.8
>48	***85.04***	***60.6***	**36.0**	**30.7**	**-5.3**

Considering the 57 dB LAeq,16h day-time noise contour there is a small decrease in area of approximately 6% when comparing the 2013 contour with the 2012 contour. Considering the 48 dB LAeq,8h night-time noise contour there is a significant decrease in area of approximately 15% when comparing the 2013 contour with the 2012 contour. This is mainly due to the decrease in movements.

The 2013 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

The modal split for summer 2013 was 71% westerly / 29% easterly compared with 86% westerly / 14% easterly in summer 2012.

In terms of movements, the daytime movements (over the 92 day contour period) decreased from 24,294 in 2012 to 23,649 in 2013 and the night-time movements also decreased from 4,414 to 3,711, year on year.

6.3. Contour Population Counts

The population counts for this year were calculated using the CACI Ltd, 2012 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted.

6.4. Day-time Contour Results Summer 2013

$L_{Aeq, 16\ hour}$ Day-time	2012 Dwellings	2012 Population	2013 Dwellings	2013 Population
>72	0	0	0	0
>69	0	0	0	0
>66	5	10	3	6
>63	383	1,064	383	1,064
>60	1,103	3,006	1,156	3,164
>57	**3,034**	**7,321**	**2,975**	**7,128**

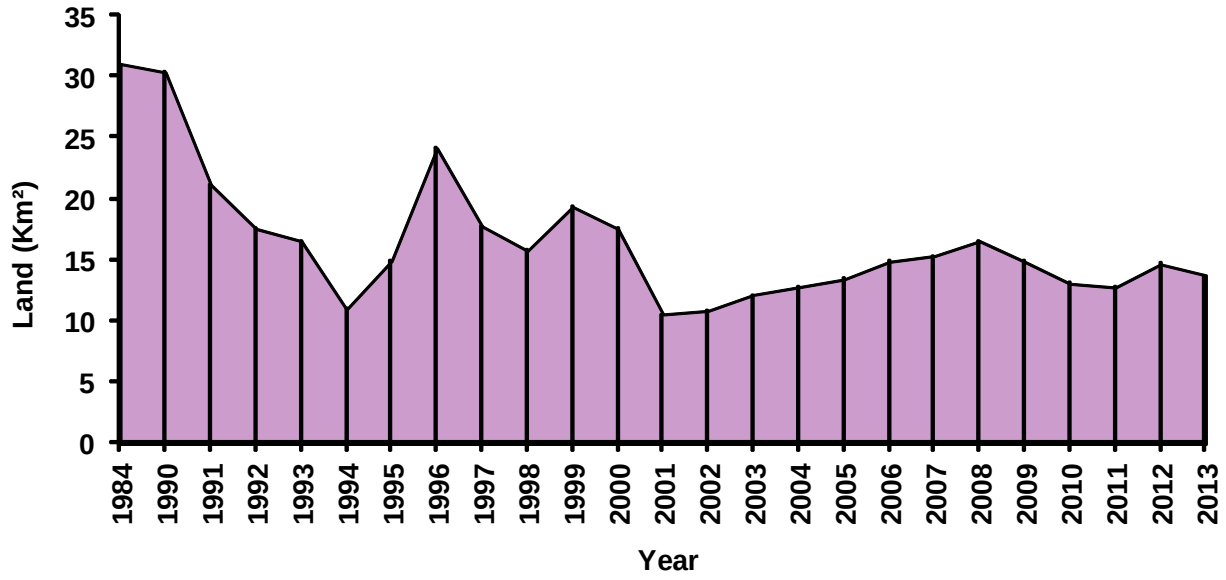
6.5. Night-Time Contour Results Summer 2013

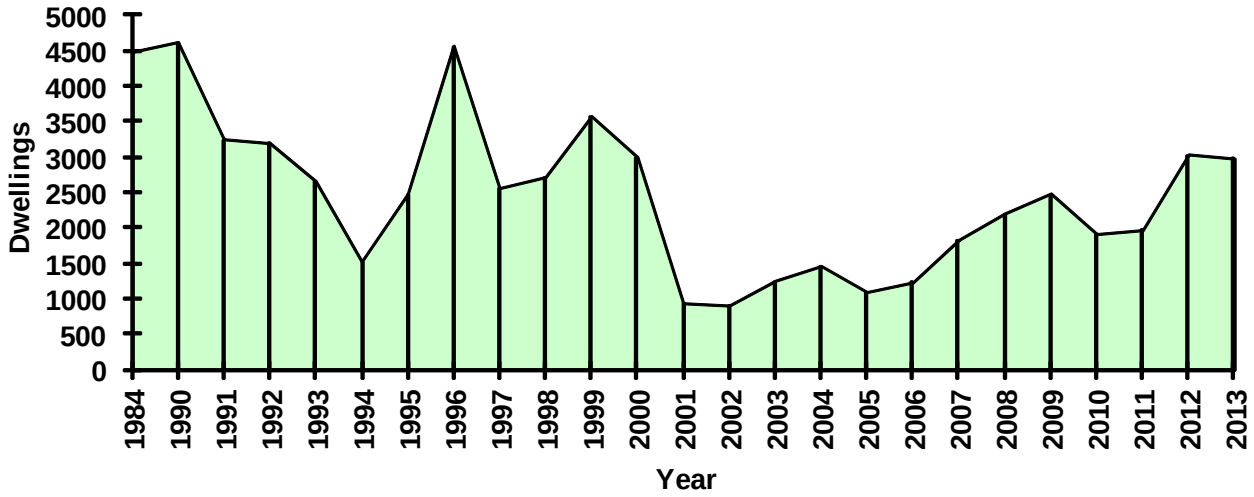
$L_{Aeq, 8hour}$ Night-time	2012 Dwellings	2012 Population	2013 Dwellings	2013 Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	1	2	1	2
>60	15	36	10	27
>57	634	1,740	540	1,478
>54	1,673	4,563	1,619	4,377
>51	3,958	9,304	3,577	8,475
>48	**6,701**	**15,790**	**6,390**	**14,974**

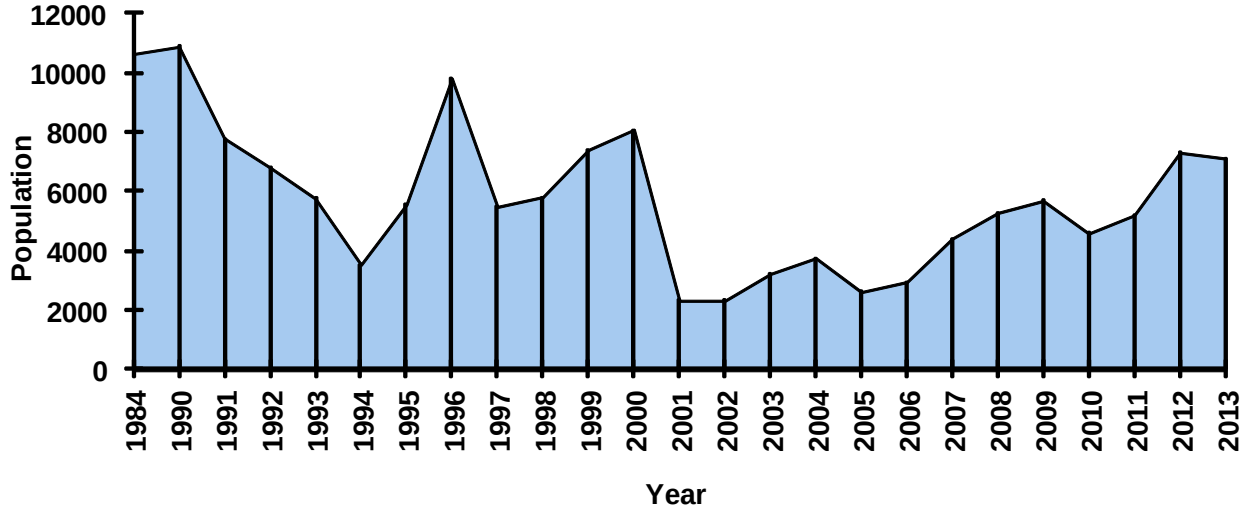
In the above tables the results for households and resident populations are cumulative, i.e. values presented for larger contours (geographically) include the values for those contours within them.

When looking at the day-time results there are generally small decreases in the numbers of dwellings and the population within the contours when comparing 2013 with 2012. For the 57 dB(A) contour the decrease is around 3%. For the night-time contours there are consistent decreases in the numbers of dwellings and the population within the contours when comparing 2013 with 2012, for example for the 48 dB(A) contour the decrease in both is around 5%. The reductions are mainly due to reduction of flight movements.

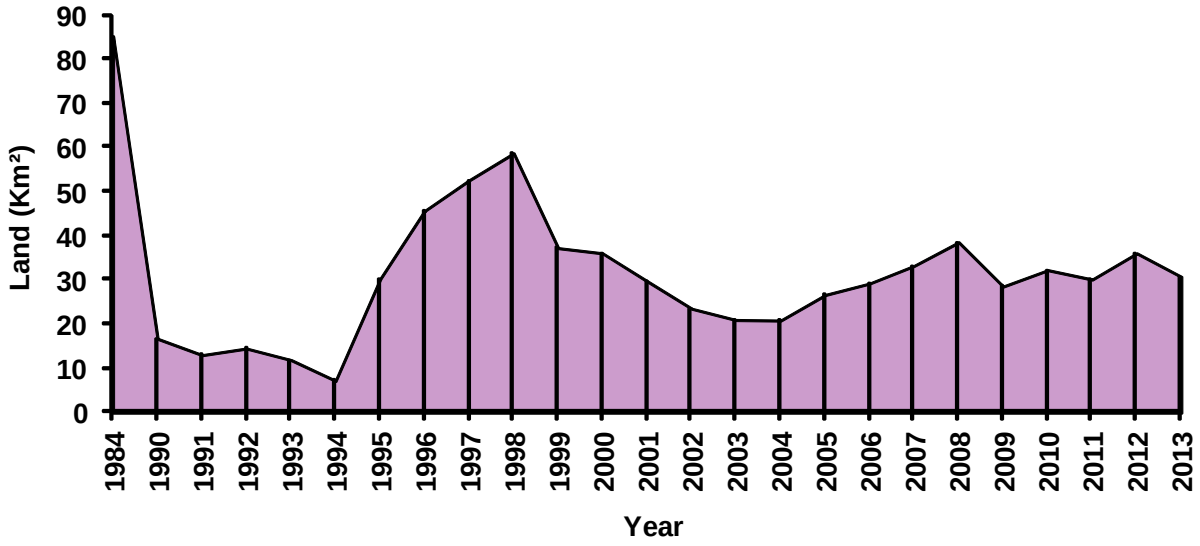
6.6. Noise Impact Within 16-Hour (Day) Leq Contours Summer 2013

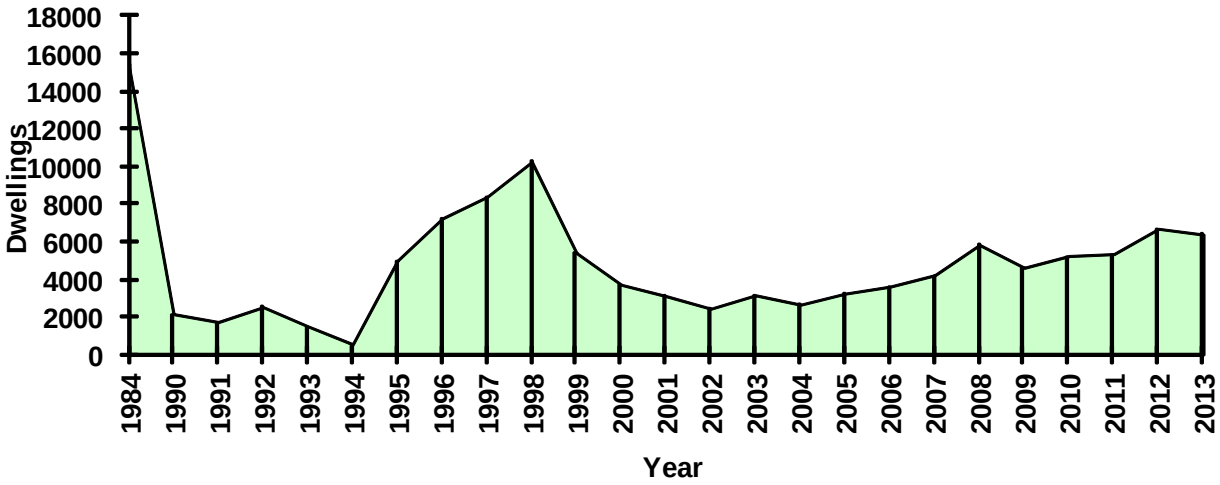


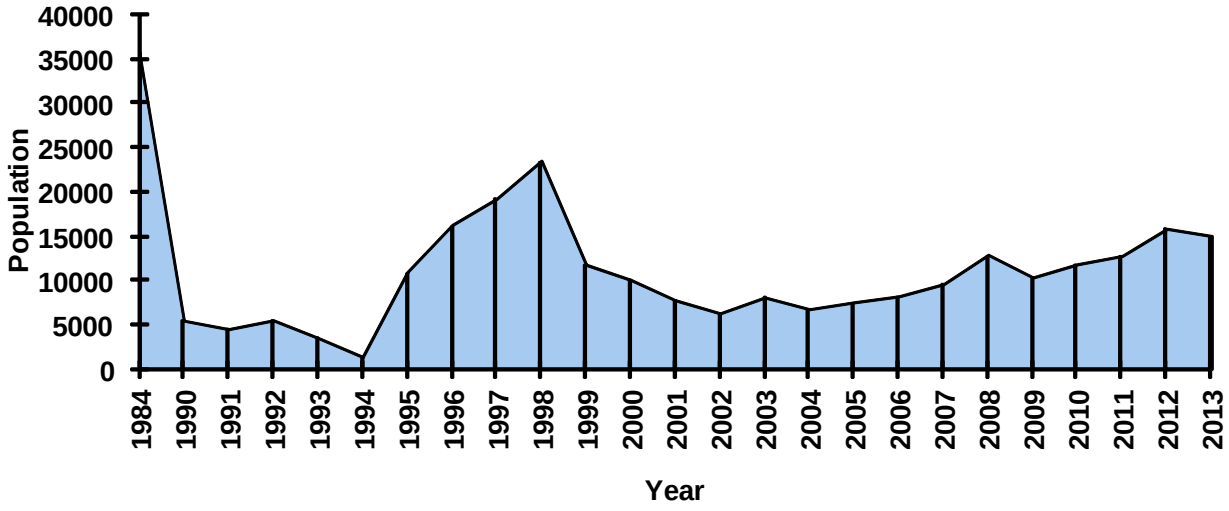




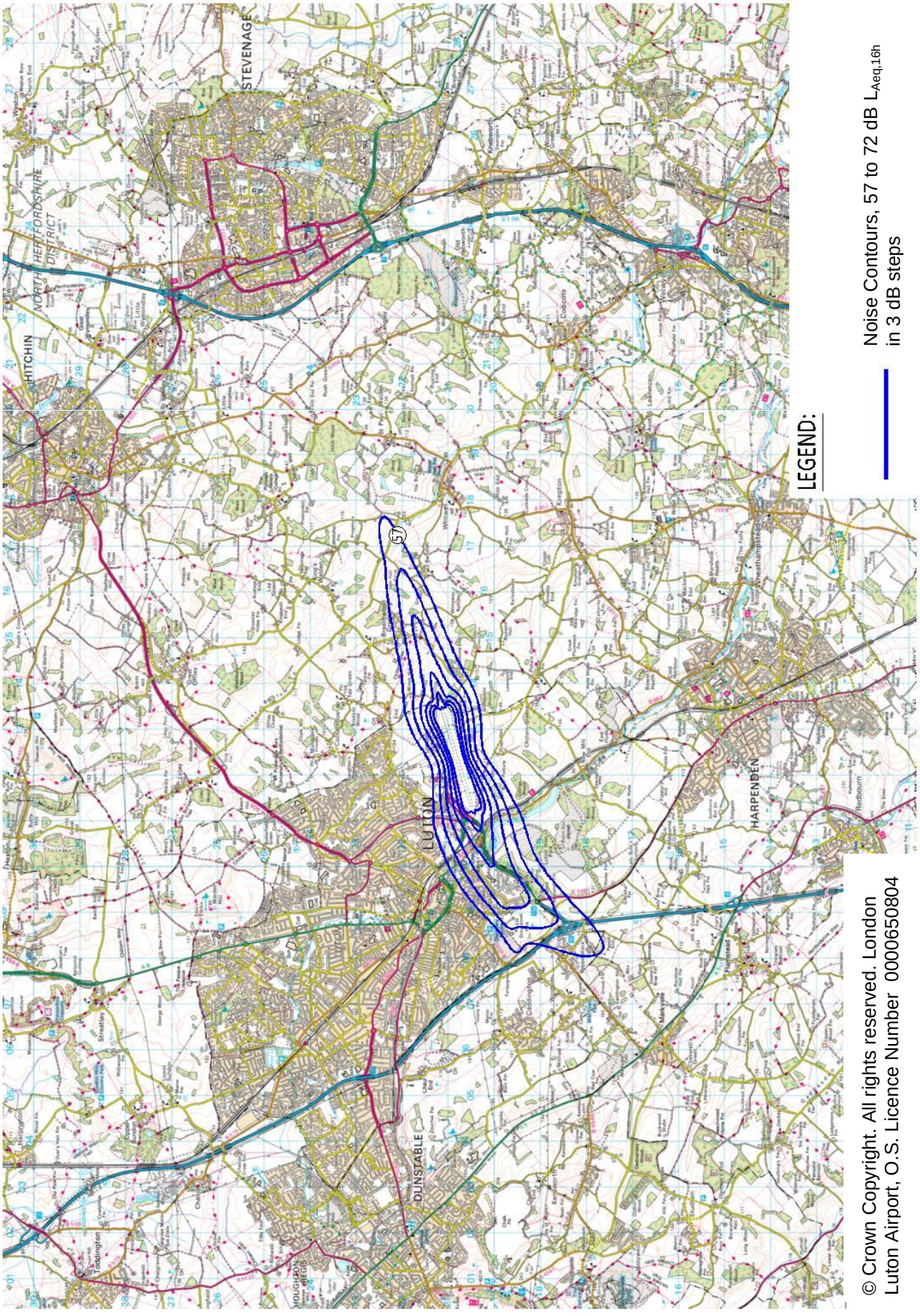
6.7. Noise Impact Within 8-Hour (Night) Leq Contours Summer 2013



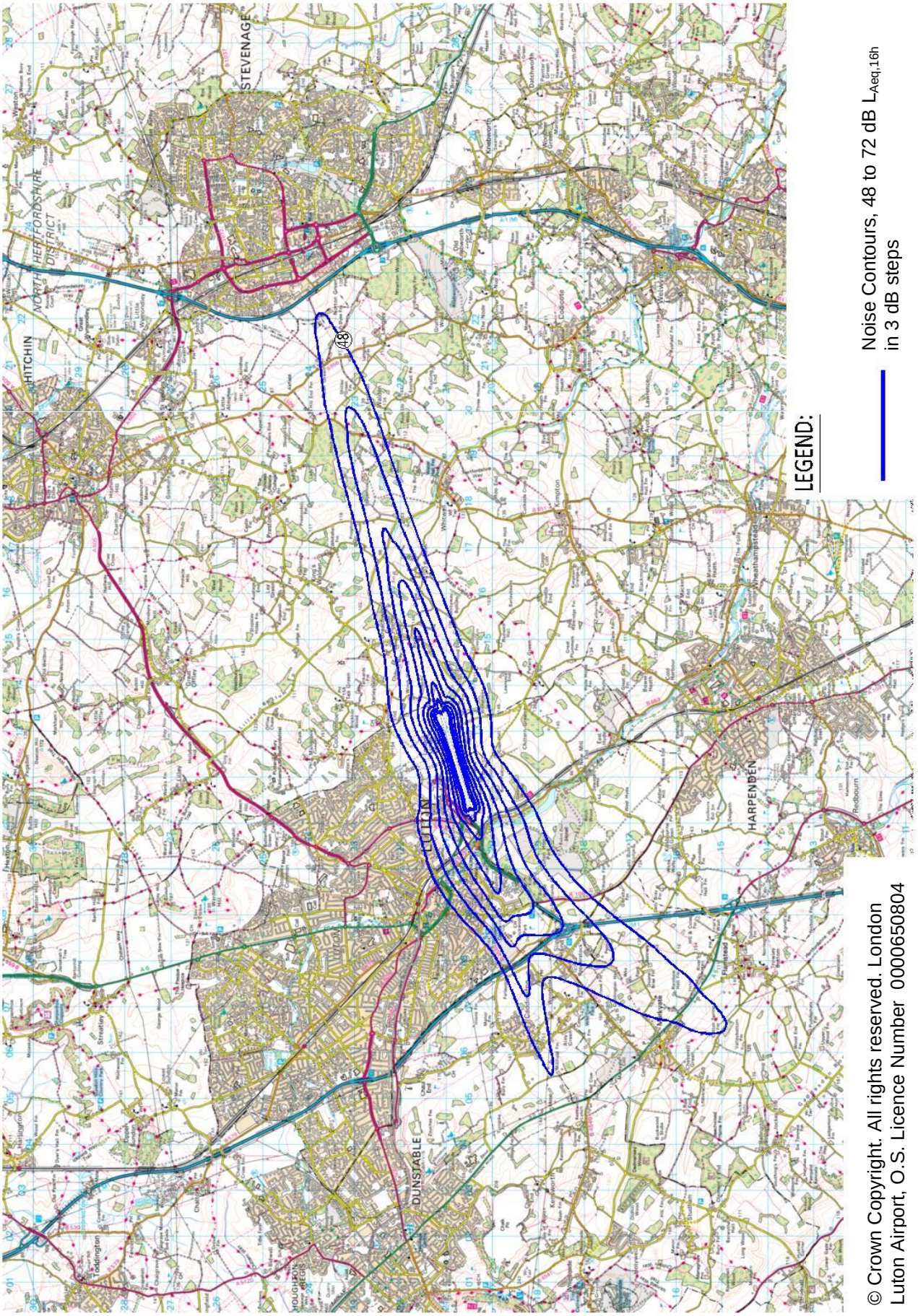




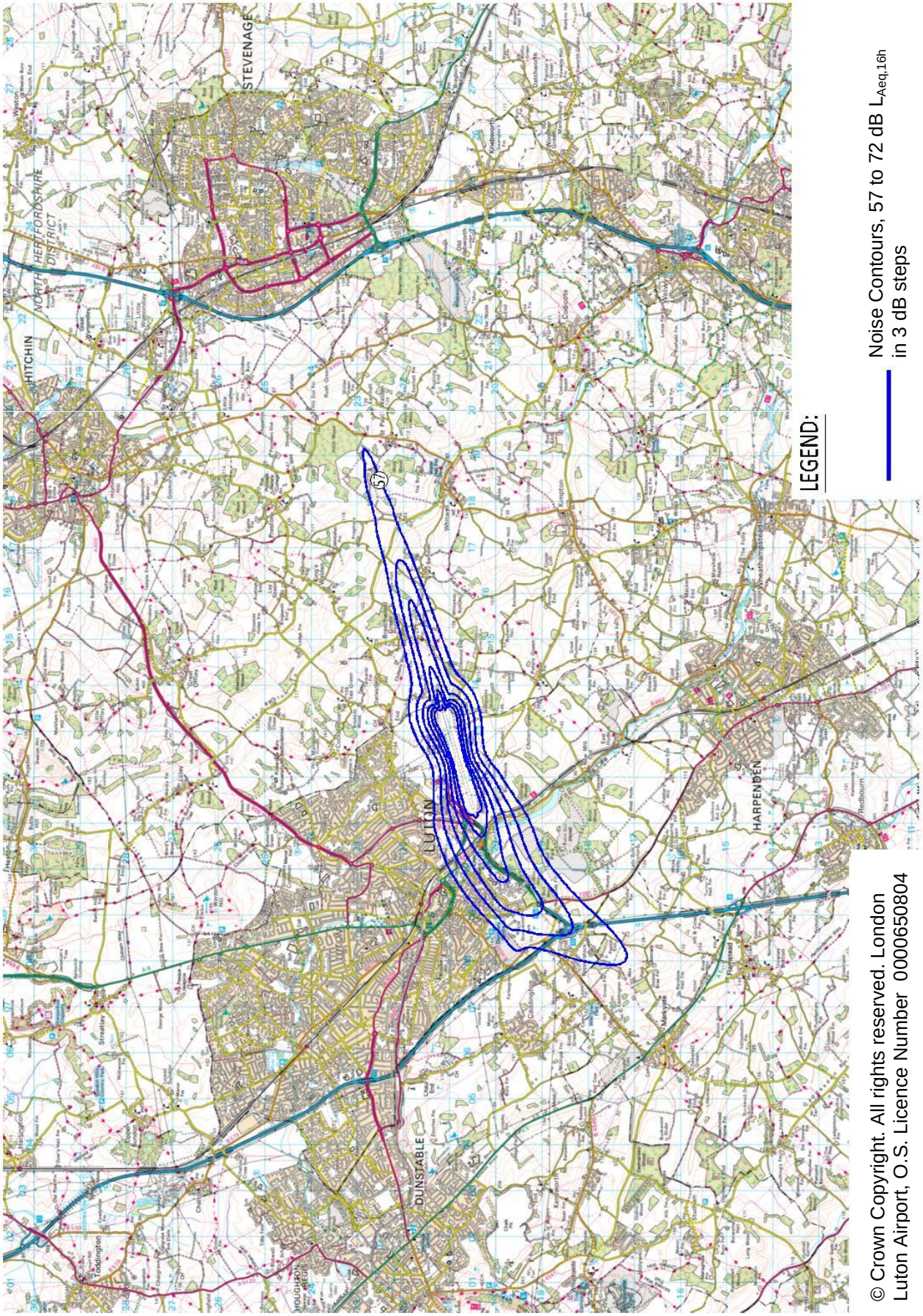
6.8. Annual Day Noise Contours Summer 2013



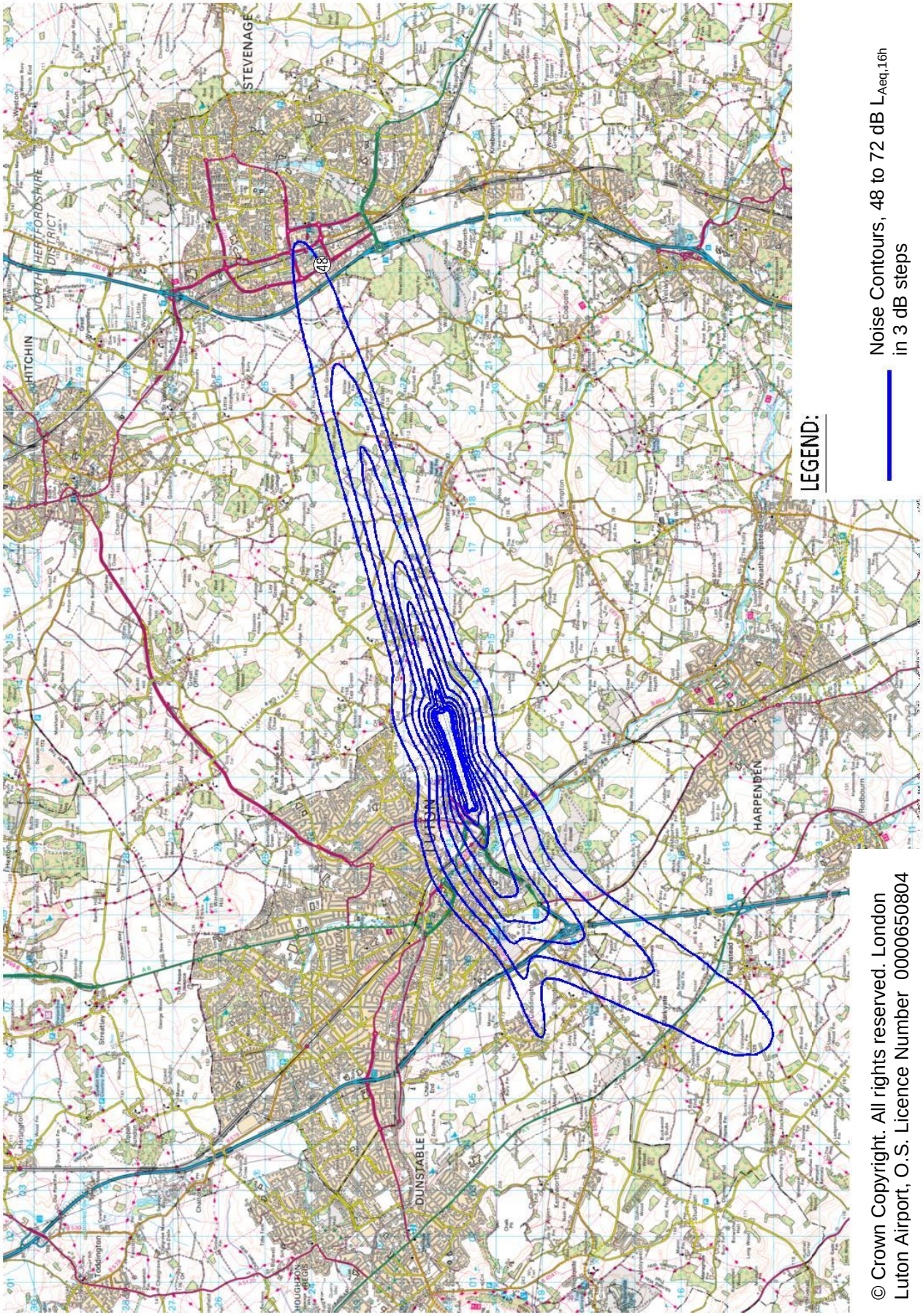
6.9. Annual Night Noise Contours Summer 2013



6.10. Annual Day Noise Contours Summer 2012



6.11. Annual Night Noise Contours Summer 2012



6.12. Annual Noise Contours 2013

Again using the latest INM software (version 7.0d) the annual Lden noise contours for 2013 have been produced in accordance with the Noise Action Plan, which states that from 2013 the airport will "*produce L_{den} noise contours annually, based on an annual average 24 hour period and present to the LLACC (via NTSC).*" The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2013, with a 10 dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2013.

6.13. Annual Lden Noise Contour Results 2013

Contour Value (dB(A) L_{den})	Contour Area (km^2)	Population[1]	Dwellings[2]
>75	0.7	0	0
>70	1.6	0	0
>65	5.0	1,100	450
>60	12.4	5,200	1,900
>55	**31.8**	**14,800**	**6,150**

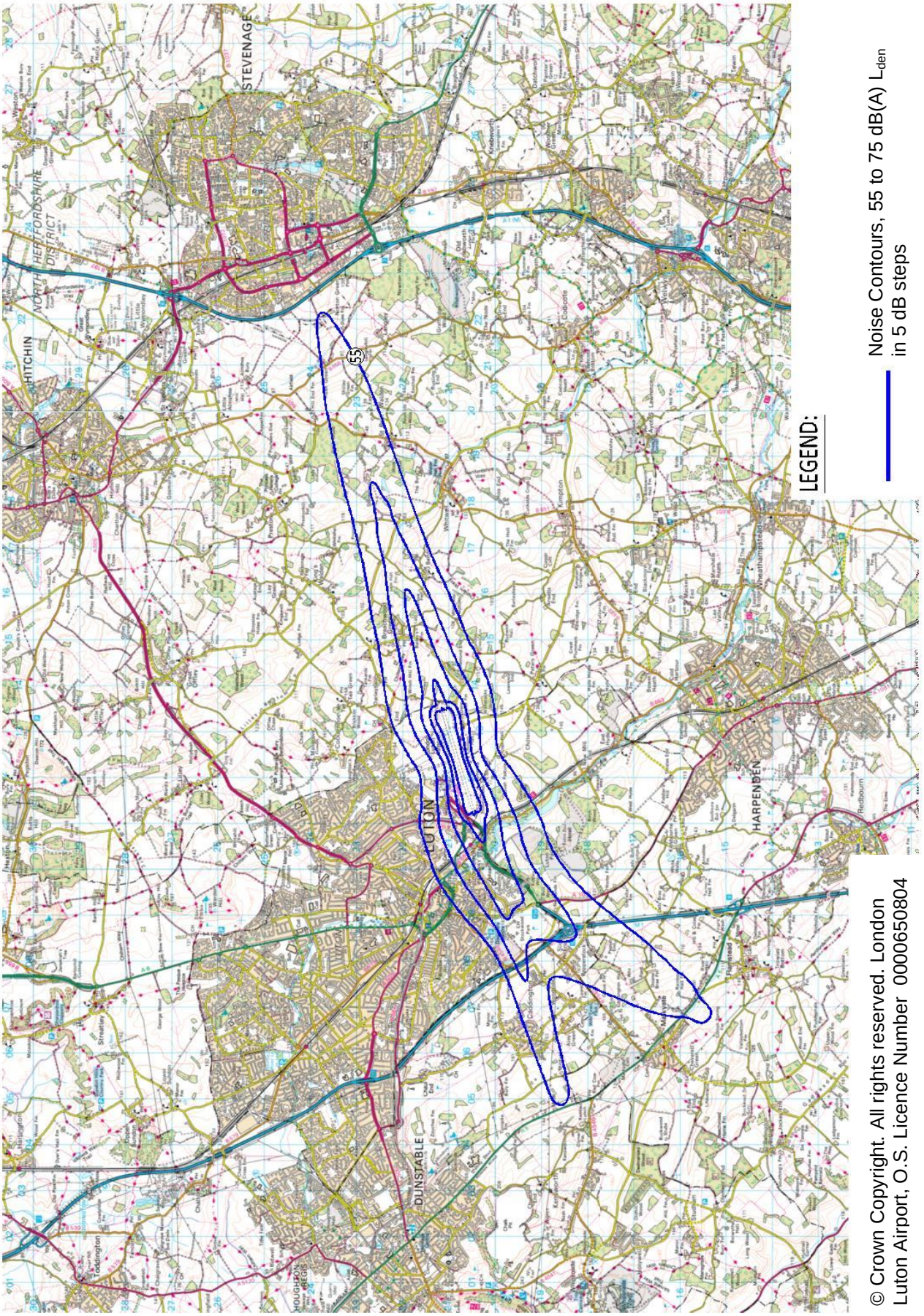
[1] Population counts rounded to the nearest 100
[2] Dwelling counts rounded to the nearest 50

6.14. Annual Lnight Noise Contour Results 2013

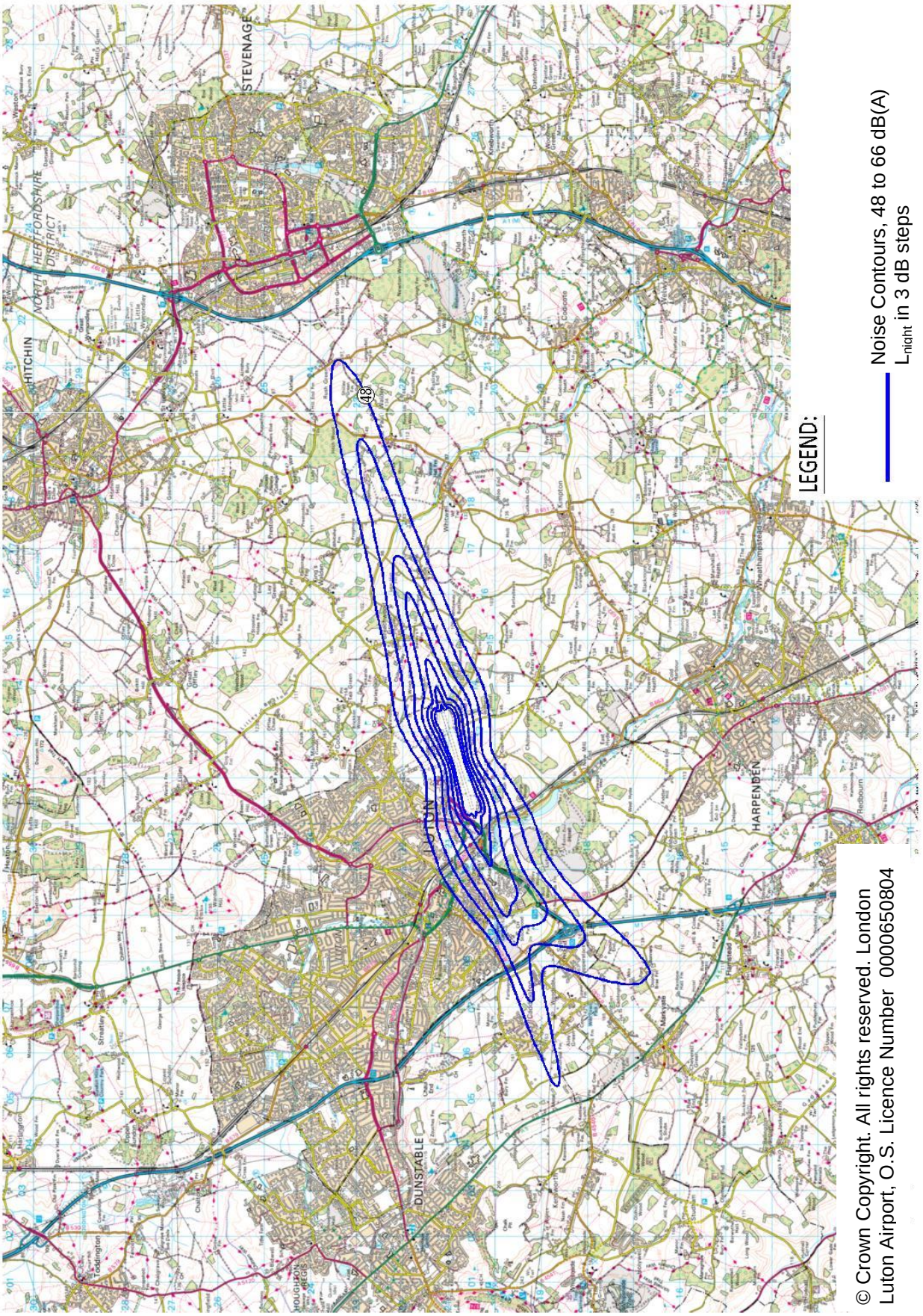
Contour Value (dB(A) L_{night})	Contour Area (km^2)	Population[1]	Dwellings[2]
>66	0.8	0	0
>63	1.2	0	0
>60	2.2	0	0
>57	4.6	800	300
>54	8.1	2,400	900
>51	14.2	6,100	2,350
>48	**24.6**	**11,900**	**4,900**

[1] Population counts rounded to the nearest 100
[2] Dwelling counts rounded to the nearest 50

6.15. Annual Lden Noise Contours 2013



6.16. Annual Lnight Noise Contours 2013



6.17. Quarterly Night Noise Contours

The Night Jet Policy, which became effective from 1st April 2002, undertook to provide noise contour information for an average night for each quarter, with the results shown below.

6.18. Night Noise Contour Results (km²)

L_{Aeq}, 8hr Night	Jan – Mar 2012	Jan – Mar 2013	Apr – Jun 2012	Apr – Jun 2013	Jul – Sep 2012	Jul – Sep 2013	Oct - Dec 2012	Oct - Dec 2013
>72	0.2	0.2	0.4	0.4	0.4	0.4	0.3	0.3
>69	0.4	0.4	0.6	0.6	0.6	0.6	0.4	0.4
>66	0.6	0.6	0.9	0.9	1.0	0.9	0.7	0.7
>63	1.0	0.9	1.5	1.4	1.7	1.5	1.1	1.0
>60	1.6	1.5	3.0	2.8	3.6	3.0	1.8	1.8
>57	3.2	3.0	5.9	5.5	6.6	5.9	3.7	3.7
>54	6.2	5.8	10.1	9.5	11.3	10.1	6.8	6.8
>51	10.4	10.1	18.0	16.8	19.7	17.9	11.7	11.7
>48	18.3	17.6	31.2	29.3	35.5	31.6	20.5	20.4
W/E Split (%)	*69/31*	*40/60*	*61/39*	*63/35*	*86/14*	*69/31*	*75/25*	*81/19*

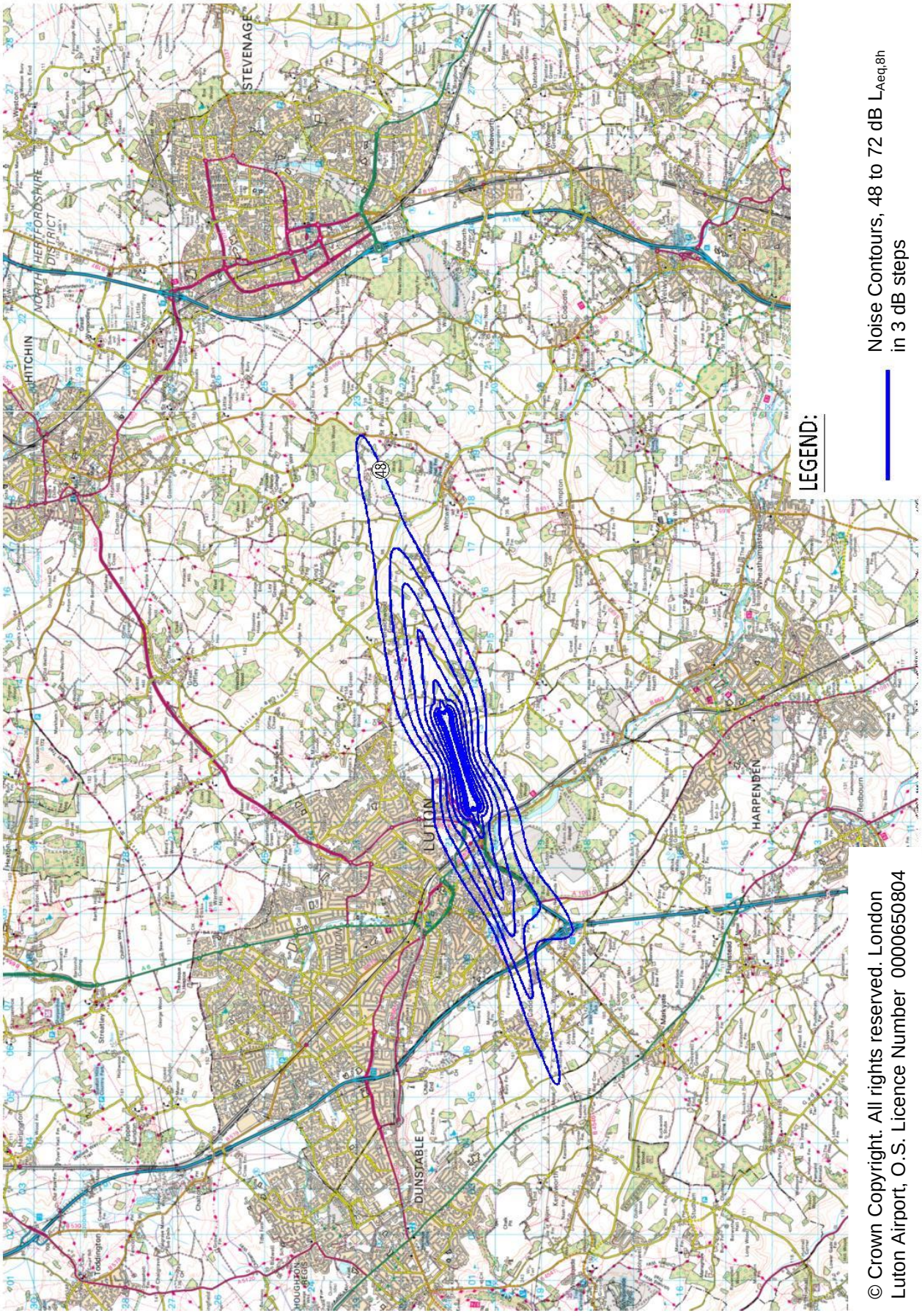
6.19. Night Noise Movements by INM Aircraft Type

At the request of the LLACC the movement numbers in the table below, outlining those aircraft types which were previously grouped in 'other' and which were 10 or more, have been disaggregated. For aircraft types with less than 10 movements in a period or types that were not explicitly presented in previous periods, 'n/a' is shown.

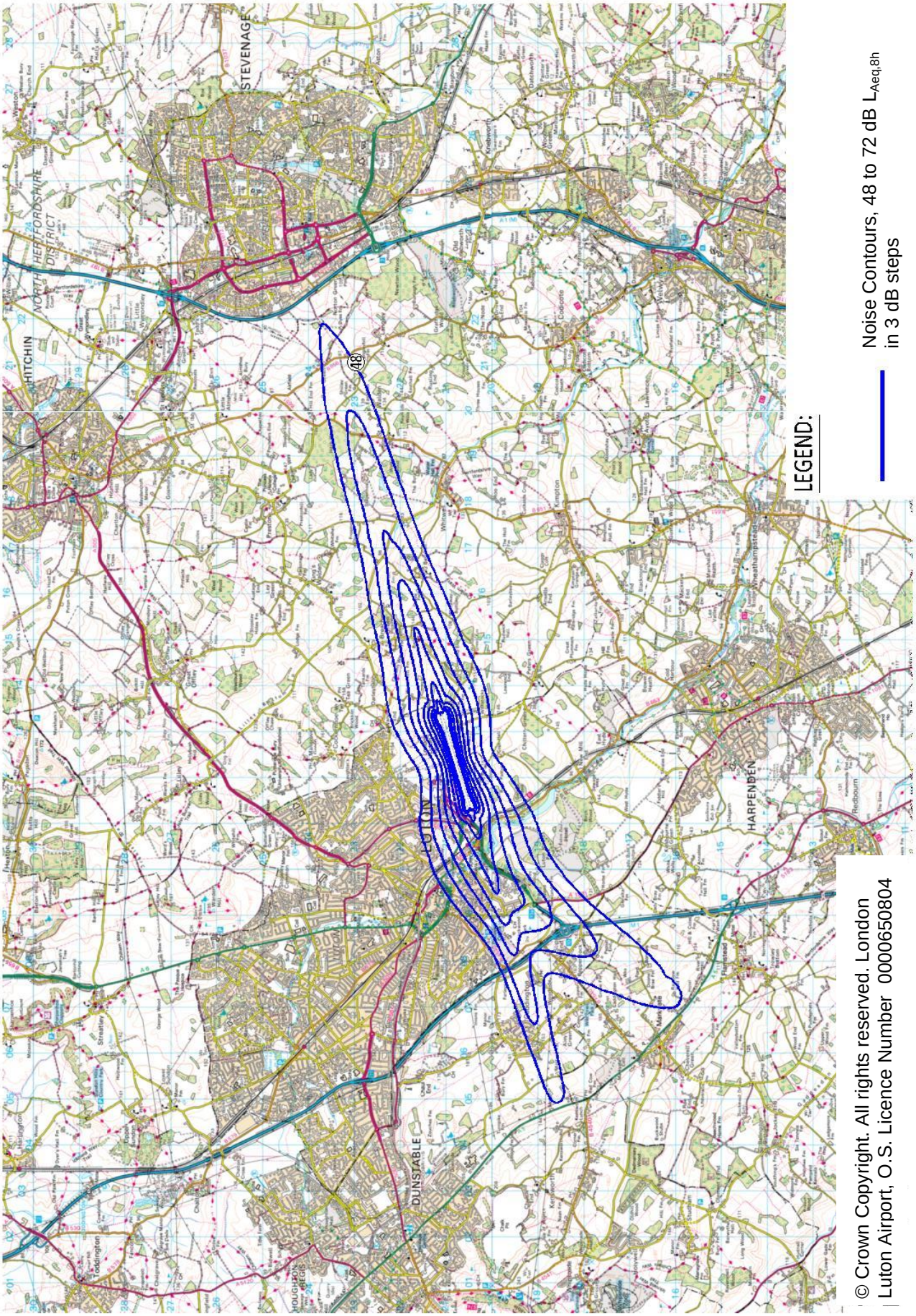
Aircraft Type	Jan – Mar 2012	Jan – Mar 2013	Apr – Jun 2012	Apr – Jun 2013	Jul – Sep 2012	Jul – Sep 2013	Oct – Dec 2012	Oct – Dec 2013
737300	18	n/a	27	n/a	21	n/a	14	42
737400	32	21	100	81	104	97	47	31
737700	12	17	10	13	15	n/a	15	15
737800	209	258	508	605	619	727	347	372
757RR	32	25	92	72	105	100	60	44
A300-622R	29	121	94	97	98	125	97	123
A300B4-203	88	n/a	22	21	19	n/a	10	n/a
A319-131	360	246	950	755	1024	839	364	311
A320-211	352	312	1061	761	1288	786	501	473
A321-232	68	71	147	124	176	175	100	101
A330-301	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15
BAE146	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CL600[1]	73	81	97	110	86	83	25	80
CL601[1]	10	16	22	15	95	18	168	20
CNA441[1]	n/a	17	12	12	n/a	14	13	20
CNA500	n/a	11	22	15	n/a	11	n/a	12
CNA510	n/a	10	18	28	21	10	n/a	20
CNA525C	21	20	41	45	36	41	26	41
CNA55B	n/a	11	n/a	n/a	28	n/a	23	11
CNA560XL	27	43	46	46	39	39	47	50
CNA680	n/a	n/a	n/a	12	n/a	n/a	11	n/a
CNA750	n/a	n/a	n/a	10	n/a	n/a	n/a	n/a
DO328[1]	132	133	131	141	137	137	132	133
EMB145	18	19	41	61	32	46	39	54
F10062	62	39	24	62	35	46	22	42
GIV	69	52	88	79	74	84	61	66
GV[1]	158	188	180	211	93	171	105	212
IA1125	n/a	10	n/a	15	15	n/a	11	n/a
LEAR35[1]	38	45	90	70	26	42	68	45
Other	63	54	44	42	134	80	51	64
Total	**1871**	**1820**	**3877**	**3503**	**4320**	**3671**	**2357**	**2397**

[1] In the 2012 AMR, some or all of these movements were shown against alternative INM aircraft types, due in part to use of an earlier version of the INM software. For example the majority of the 2013 movements against the DO328 were modelled for 2012 using the BAEATP.

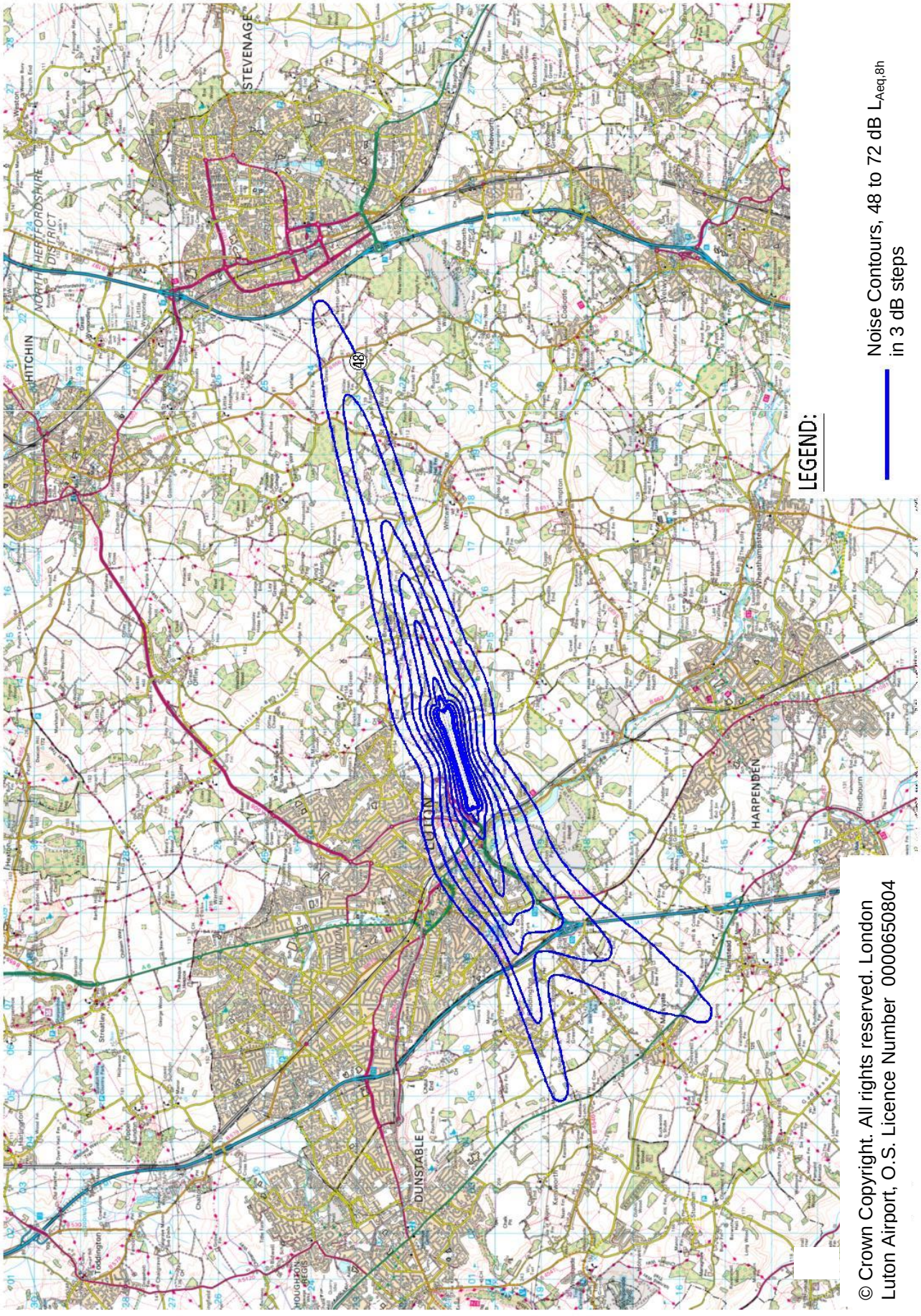
6.20. Quarterly Night Noise Contours 2013 Jan – Mar



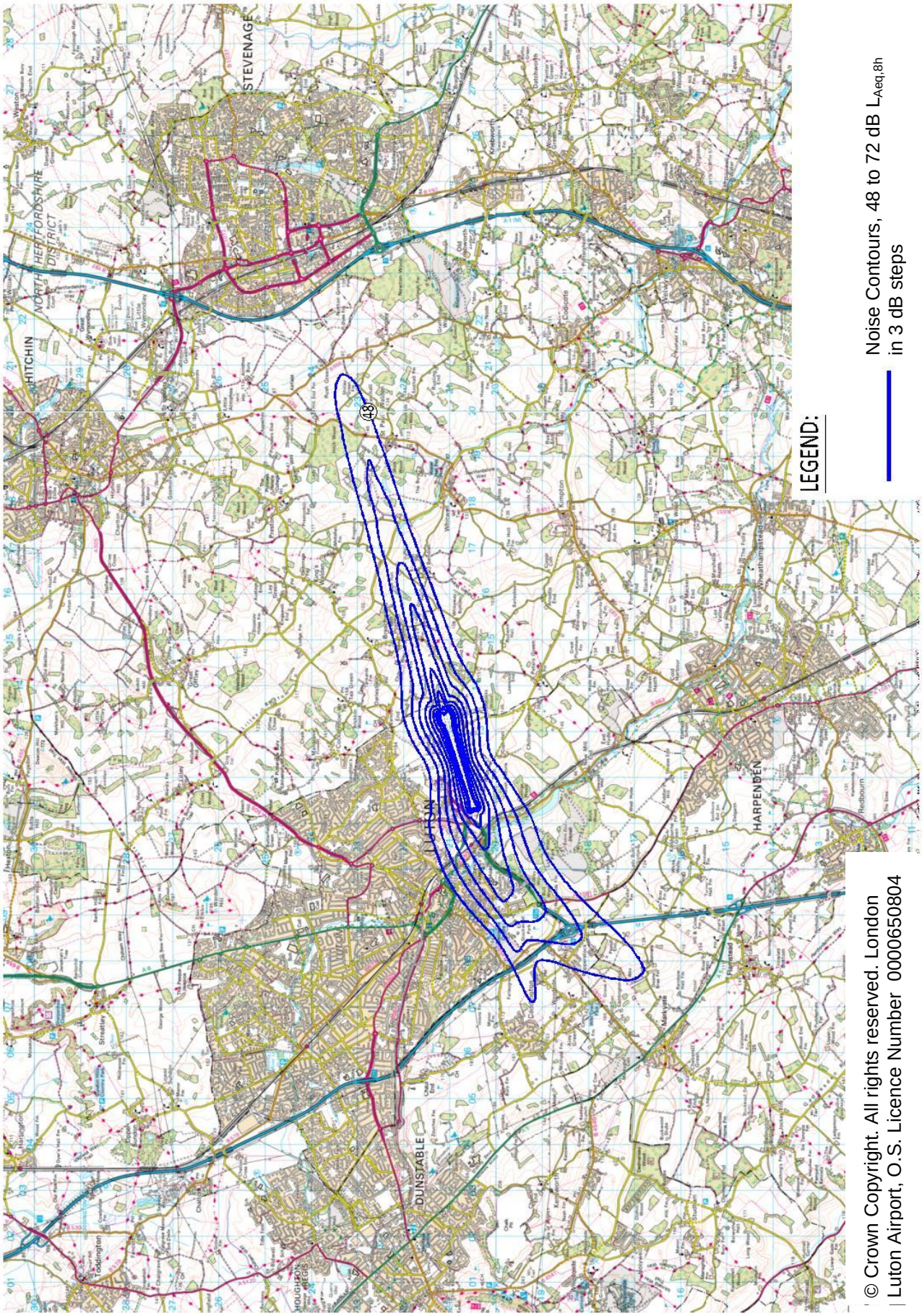
6.21. Quarterly Night Noise Contours 2013 Apr – Jun



6.22. Quarterly Night Noise Contours 2013 Jul – Sep



6.23. Quarterly Night Noise Contours 2013 Oct – Dec



7. *Noise Action Plan*

The table below provides an update on the actions in the Noise Action Plan. Those actions highlighted in orange have been deferred from the original date in the published Noise Action Plan, whilst those in green have been actioned during 2013.

	Action	Noise problem	Timescale
1	Operate and maintain a noise and track-keeping system to monitor aircraft operations, reporting statistics quarterly to the LLACC (via NTSC)	A-F	Ongoing
2	Produce L_{den} noise contours annually, based on an annual average 24 hour period and present to LLACC (via NTSC)	A-F	2013 (Actioned)
3	Undertake regular analysis of aircraft activity and noise to identify where a review of procedures may help minimise disturbance	A-F	Ongoing
4	Monitor % compliance of Continuous Descent Approaches (CDA) both day and night, reporting quarterly to the LLACC (via NTSC)	A, C, D	Ongoing
5	Undertake community visits with a portable handheld noise monitoring device, on request	A-F	Ongoing
6	Acquire a new 'permanent' mobile noise monitor which can be left in community locations for extended periods to measure aircraft noise and compare with published noise contours	A-F	2011 (Actioned)
7	Present quarterly night contours to the LLACC (via NTSC)	A-F	Ongoing
8	Investigate, log and respond to all complaints relating to London Luton Airport aircraft activity, reporting in-depth statistics quarterly to the LLACC (via NTSC)	A-F	Ongoing
9	Quarterly Airfield Environment Office Reports to be available to view on the London Luton Airport website as well as the LLACC website	N/A	Ongoing
10	Monitor helicopter operations to/from London Luton Airport to ensure they avoid, where possible, the most densely populated areas	C	Ongoing
11	Calibrate noise and track-keeping system and INM noise contour model on an annual basis	N/A	Ongoing
12	Monitor the track-keeping compliance and follow up with operators, as necessary	C	Ongoing
13	Monitor the number of marginally compliant Chapter 3 aircraft (approximately 10% of total movements during 2009)	B	Ongoing
14	Monitor and report progress against Noise Action Plan actions to the LLACC (via NTSC), providing statistics annually in the Annual Monitoring Report	A-G	2013 (Actioned)
15	Review the voluntary Night Noise Policy at least every five years, in consultation with the LLACC (via NTSC)	A-D	2015
16	Encourage daytime operations through higher landing fees at night	A, B	Ongoing
17	Fine any departing aircraft exceeding noise limits, to encourage airlines to operate the quietest aircraft types, (82dB(A) at night and 94dB(A) during the daytime)	A, B	Ongoing
18	Discourage residential development close to the airport boundary or areas affected by aircraft noise, in liaison with Local Authorities.	A-F	Ongoing
19	Review the current Night Noise Policy	A-D	2010 (Actioned)
20	Divert all noise violation limit penalties from airport operations to support the noise management programme and Community Trust Fund	A-G	Ongoing
21	Regular liaison with airline operators via a 'Flight Ops' Committee to ensure adherence to existing standard procedures and encourage innovation	A-F	Ongoing
22	Review operational procedures in relation to noise with support of the 'Flight Ops' committee and NTSC	A-F	Ongoing
23	Work with operators to encourage the voluntary phase out of noisiest aircraft	A, B, D, E, F	Ongoing
24	Continue to review procedures for helicopter operations with the support of air traffic control	C	Ongoing

25	Work with operators on the voluntary phase out of marginally compliant Chapter 3 high aircraft i.e. hushkitted aircraft	A, B, D, E, F	2014
26	Explore with the 'Flight Ops' Committee/NTSC penalties for flying off track after the introduction of RNAV-1 departure routes	C	2014
27	Work with airlines, air traffic control, NATS and other stakeholders to introduce new technologies and environmental improvements	A-F	Ongoing
28	Review the Engine Ground Running policy to minimise disturbance during the night and late in the evening	A	2013 (Actioned)
29	Undertake a review of day noise violation limits, in conjunction with the 'Flight Ops' Committee/NTSC	B	Ongoing
30	Implement a noise insulation scheme for non-residential noise sensitive buildings	G	2013 (Actioned)
31	Implement a new departure code of practice to minimise noise impact	A, C, F	2011 (Actioned)
32	Operate within existing planning limits	A-F	Ongoing
33	Actively participate and support the work of the industry and Airport Operators Association with respect to its 'Sustainable Aviation' programme	N/A	Ongoing
34	Liaise with London Heathrow and other airports with respect to non-London Luton overflying traffic, where necessary	C, D, E, F	Ongoing
35	Work with the LLACC (via NTSC), the 'Flight Ops' committee and NATS to identify airspace improvements which may enhance the noise environment	A-F	Ongoing
36	Agree key performance indicators and targets for noise 'actions', where appropriate, with the LLACC (via NTSC)	A-G	2012 (Actioned)
37	Set a target for day and night CDA compliance with air traffic control	A-D	2012 (Actioned)
38	Assess the impact of London Luton Airport traffic on the Chilterns AONB and explore potential for operational improvements	E	Ongoing
39	Lower the night noise violation limit	A-F	2010 (Actioned)
40	Attend public meetings on request, where appropriate, to discuss the airport's operation	N/A	Ongoing
41	Provide an information pack to first time complainants and those wishing to relocate into the area	N/A	Ongoing
42	Formally engage with air traffic control and airline/other operators to help improve noise management/track keeping	N/A	Ongoing
43	Host visits from local residents and MPs to discuss community concerns and to demonstrate the Noise and Track-Keeping system	N/A	Ongoing
44	Prepare an Annual Monitoring Report, in conjunction with Luton Borough Council, incorporating detailed statistics on all aspects of the airport's operations	N/A	Ongoing
45	Review format of the Annual Monitoring Report to incorporate Noise Action Plan progress	N/A	2013 (Actioned)
46	Establish a committee with Environmental Health Officers of Local Authorities (Herts, Beds and Bucks) to discuss the impact of the airport's operations and the Noise Action Plan	N/A	2014
47	Continue to offer email, telephone and website as options for complaints and enquiries	N/A	Ongoing
48	Review our noise complaint handling system and consider follow up surveys in conjunction with the LLACC (via NTSC)	N/A	2013 (Actioned)
49	Invite members of the public to visit the Environment Office to review noise and track information	N/A	Ongoing
50	Engage effectively with the LLACC and NTSC	N/A	Ongoing
51	Engage with local planning authorities to ensure they are informed about noise matters	N/A	Ongoing
52	Review communication material, the noise information pack and the London Luton Airport website with respect to noise/noise management	N/A	2013 (Actioned)
53	Hold community surgeries to give local people an opportunity to discuss issues in person with representatives from the Community Relations and Environment Department	N/A	2014

54	Introduce a web-based noise and track system for public access on the London Luton Airport website	N/A	2012 (Actioned)
55	Improve communication with transient and non-based operators/users to ensure environmental and operational procedures are understood and adhered to	A-F	2011 (Actioned)

***Noise Problem**: A - Night operations; B – Noisier aircraft; C – Track-keeping; D – Arriving aircraft; E – Preservation of quiet areas; F – Westerly departures; G – Mitigation and compensation.*

Actioned during 2013

Action 2: L_{den} noise contours for 2013 have been produced and published in this AMR.

Action 13: Marginally compliant Chapter 3 aircraft are monitored through Topsonic, the noise and track keeping system.

Action 14: Progress against the NAP actions have been published in this AMR.

Action 23: Voluntary phase-out of the noisiest aircraft is encouraged through the Noise Violation Limits, and through discussions at the Flight Opeations Committee (FLOPC). This will also form part of the Noise Control Scheme required to be submitted to the council as part of the planning conditions.

Action 28: The Engine Ground Running policy was last revised in 2010 as part of the night noise policy. A subsequent review in 2013 concluded that the policy is currently fit for purpose, however a further review will be undertaken as part of the development of the Noise Control Scheme required to be submitted to the council as part of the planning conditions.

Action 29: Daytime noise violation limits have been reviewed as part of the planning application, and a progressive reduction will be implemented in line with the planning conditions.

Action 30: A noise insulation scheme was implemented for non-residential properties, whereby acoustic insulation was offered to any noise sensitive properties such as schools and hospitals exposed to noise levels ≥63 dB $L_{Aeq,}$ as recommended in the guidance in the 2003 Aviation White Paper. Cutenhoe Learning and Community Village was identified as the only property that met the criteria. A noise assessment was undertaken and acoustic insulation subsequently installed.

Action 34: Liaison occurs between Heathrow and other London airports regarding noise issues such as overflights and complaints.

Action 38: The impact of aircraft over the Chilterns is continually assessed as part of LLAOL's quarterly and annual contour and complaints analysis. Furthermore the impact of a potential Airspace Change Proposal on the Chilterns has been assessed along the Runway 26 Brookmans Park departure route as part of the RNAV1 trials. Similar assessments will be undertaken as further improvements in navigation technologies are considered along other departure routes.

Action 45: Progress against the NAP actions have been published in this AMR.

Action 48: LLAOL's noise complaints handling system has been reviewed, and procedures written as part of the development of LLAOL's Environmental Management System.

Action 52: The website has been reviewed, out-dated contents removed and new information uploaded.

Postponed during 2013

Action 25: LLAOL will work with operators to encourage phase out of marginally compliant Chapter 3 high aircraft as part of the Noise Control Scheme to be submitted to the council as part of the planning conditions.

Action 26: This has been postponed due to the fact that RNAV-1 has not yet been introduced on any of the routes out of London Luton Airport. An RNAV-1 trial was undertaken on the Clacton/Dover/Detling Runway 26 departures during 2013, and an Airspace Change Proposal is anticipated to go to consultation at the beginning of 2014.

Action 46: The action to establish a committee with Environmental Health Officers of Local Authorities (Herts, Beds and Bucks) to discuss the impact of the airport's operations and the Noise Action Plan was postponed until 2014.

Action 53: Community surgeries were postponed until 2014.

8. Complaints

8.1. Total Complaints relating to LLA aircraft operations

	2012	2013
Total No. of Complaints relating to LLA aircraft operations	938	1,022
No. of Complainants	355	379
No. of Events (eliciting a complaint)	3,079 (1,594*)	2,164 (1,606**)
Average No. of Complaints per Complainant	*2.6*	*2.7*
Average No. of Events per Complainant	*8.7 (4.5*)*	*5.7 (4.2**)*
Average No. of Events per Complaint	*3.3 (1.7*)*	*2.1 (1.6**)*
No. of Aircraft Movements per Complaint	*105*	*96*
No. of Aircraft Movements per Event	*32 (62*)*	*45 (61**)*

** Figures excluding 1,485 events reported by four individuals, two residents in Harpenden and two individuals from the same household in Redbourn.*
*** Figures excluding 558 events reported by just one resident of Harpenden.*

During 2013 a total of 1,022*** complaints (on average 3 complaints per 24 hours) relating to LLA aircraft operations were received by the Airfield Environment Office, compared with 938 in 2012.

A further 72 complaints (90 events) not attributable to LLA traffic were received throughout 2013 compared with 75 (190 events) last year. 24 of these complaints (33%) related to non-LLA helicopters operating to/from other airfields.

A total of 379 individuals reported concerns to the Airfield Environment Office during the year, in comparison to 355 in 2012. Statistics identify that 152 individuals (40%) were reporting concerns for the first time and that 256 of the complainants (68%) contacted the airport only once during the year.

**** It should be noted that RNAV1 trials, incorporating a number of operators following a revised departure flight route on the 26 Clacton/Dover heading, was underway between 6th March and 22nd June 2013. Following a number of Stakeholder Engagement Briefings, liaison with the LLACC and details published in a newsletter on the airport website, local residents were encouraged to provide feedback (both positive or negative) on any perceived change in flight patterns and/or noise during the duration of the trial. Due to heightened awareness in local communities, approximately 30% of all complaints received during the trial period reported specific disturbance from aircraft following the 26 Clacton/Dover flight route (a combination of aircraft following RNAV1 trial procedures and operators flying non-trial procedures).*

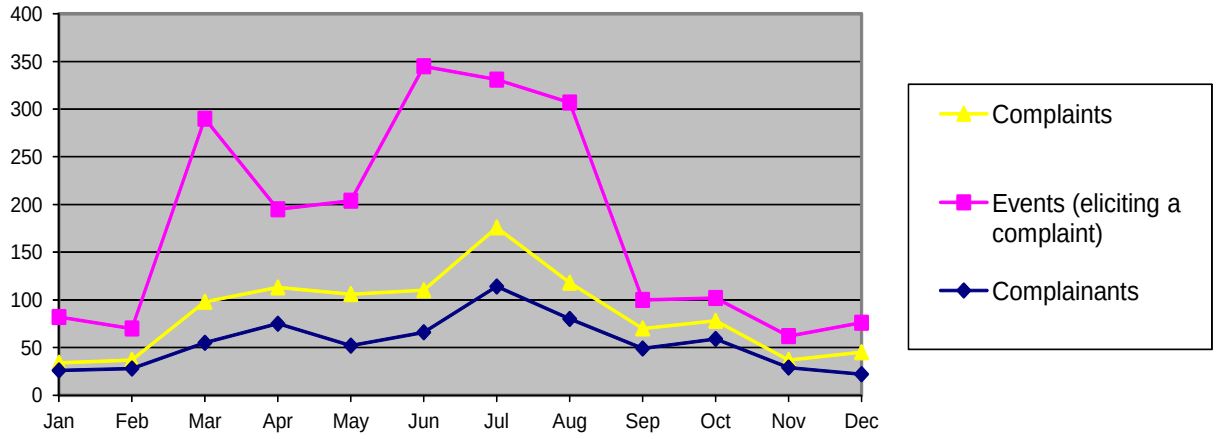
Within the 1,022 complaints received during 2013, a total of 2,164 events (eliciting a complaint) were listed, compared to 3,079 events in 2012. However, it should be noted that 558 events this year (26%) were reported by just one individual in Harpenden.

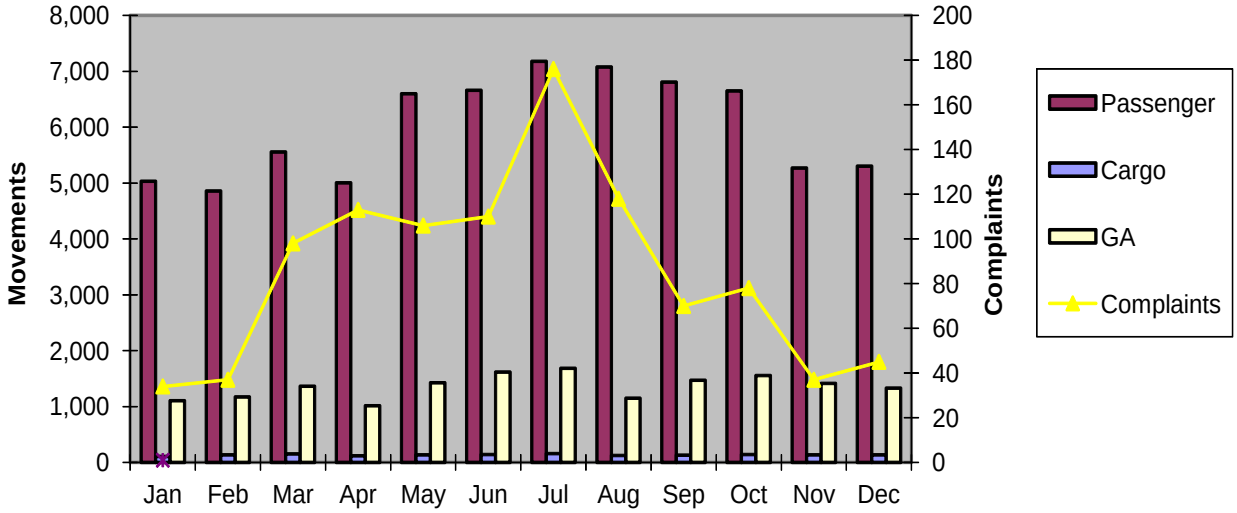
During 2013 a further 810 events were reported by one other individual in Harpenden but, in agreement with the LLACC, these events are no longer included in statistics although a total of 33 complaints from this complainant, reporting general disturbance and frequency (both day and night), have been incorporated in all statistics.

8.2. Monthly complaint statistics

	Complaints	Events (eliciting a complaint)	Complainants
Jan	34	82	26
Feb	37	70	28
Mar	98	290	55
Apr	113	195	75
May	106	204	52
Jun	110	345	66
Jul	176	331	114
Aug	118	307	80
Sep	70	100	49
Oct	78	102	59
Nov	37	62	29
Dec	45	76	22
Totals	**1,022**	**2,164**	**379***

* This total number of complainants annually takes into account a number of repeat complainants.





8.3. Breakdown of Reported Disturbance

It is important to note that the reasons detailed below are those reported by the complainant and not the result of any subsequent investigation.

Disturbance	Day	Night	General*	Total
Aircraft Noise	584	276	97	**957**
Off Track	272	39	10	**321**
Low-Flying	166	36	13	**215**
Frequency	101	20	36	**157**
Air Quality	2	0	0	**2**
Safety	2	0	0	**2**

It should be noted that complaints received may relate to more than one type of disturbance (i.e. noisy, low and off track) and the above figures will therefore not correlate to the total number of complaints.

** The 'General' category relates to non-specific reports of disturbance.*

8.4. Areas of Reported Concerns

Reported Concerns	No. of Complaints	% of Total Complaints
Departures - Westerly	442	43.2%
Departures - Easterly	196	19.2%
Arrivals - Easterly	214	20.9%
Frequency/Gen. Distrubance	74	7.2%
Arrivals - Westerly	28	2.7%
Go - Arounds	39	3.8%
Ground Noise	5	0.5%
Positioning Flights	3	0.3%
Helicopters	9	0.9%
Engine Ground Runs	7	0.7%
Air Quality	2	0.2%
Total	**1,022**	**100%**

During the year 163 individuals reported a total of 374 complaints concerning night noise disturbance from LLA operations (on average one complaint per night). This amounts to 37% of all complaints received in 2013, compared to 286 night noise complaints during 2012 (from 144 individuals). It should be noted that 26% of the reported night disturbance reports during 2013 originated from just three individuals, one in Harpenden, one in Hemel Hempstead and one in Kensworth. A further 20 complaints reported disturbance relating to overflights to or from other airports during the night period.

Within the 442 complaints concerning westerly departures 108 were of a general nature, 293 to specific aircraft following the Clacton/Dover/Detling route, 16 to aircraft on the Compton route and 19 following the Olney heading. Six other complaints involved positioning flights following off-airways flight routes.

Of the 196 complaints attributed to easterly departures 26 were of a general nature, 130 to specific aircraft following the Compton heading, 27 to aircraft on the Olney flight route and 4 to aircraft on the Clacton/Dover/Detling heading. A further 9 complaints involved positioning flights following off-airways flight routes.

Whilst 135 of the 214 complaints concerning easterly arrivals reported general disturbance, 79 related specifically to aircraft on approach to land from the Lorel Reporting Point.

8.5. Nature of Disturbance

Noise was cited as a main disturbance in 94% of complaints and 31% of complaints involved aircraft being perceived as off-track. Concerns of aircraft flying low were reported in 21% of complaints and in 15% of complaints the frequency of operations was reported. It should be noted that complaints received may relate to more than one type of disturbance (i.e. noisy, low and off-track).

Of the 1,022 complaints relating to LLA aircraft operations registered during the year 746 complaints (73%) were clearly correlated to a specific aircraft type although many complaints were of a general nature.

8.6. Complaints by Aircraft Type

Aircraft Type*	No. of correlated complaints	% of Total complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per correlated complaint**
A320/A321 (Monarch/Wizz Air/easyJet/GA)	151	14.8%	27,920	185
A319 (easyJet)	123	12.0%	26,332	214
A306 (MNG Cargo)	111	10.9%	1,133	10
B737-800 (Ryanair/Thomsonfly/EL Al/GA)	82	8.0%	11,410	139
B737-400 (MNG Cargo/Blue Air/GA)	60	5.9%	958	16
A30B (MNG Cargo/DHL)	29	2.8%	34	1
ATP (Atlantic Airlines)	27	2.6%	616	23
GLF4/GLF5 (GA)	20	2.0%	4,990	250
B767 (El Al/Thomsonfly/GA)	16	1.6%	236	15
Global Express (GA)	15	1.5%	2,228	149
MD82/83 (Blue Air)	11	1.1%	40	4
B757 (Thomson/Monarch/DHL/GA)	18	1.8%	864	48
Helicopter	9	0.9%	498	55
B737-200 (GA)	5	0.5%	56	11
GLF2/GLF3 (GA)	5	0.5%	60	12
Other Private Aircraft	*53*	5.2%	*20,026*	378
Other Passenger Operations	*9*	0.9%	*194*	22
Other Cargo Operations	*2*	0.2%	*20*	10
Total	**746**	**73.0%**	**97,615**	**131**

* Operators in brackets refer to the predominant operator(s) of aircraft type.

** This is the total number of aircraft movements per correlated complaint
i.e. 97,615 movements / 746 correlated complaints = 131

8.7. Origin of Complaints

The chart below identifies the areas around the Airport from which complaints were received:

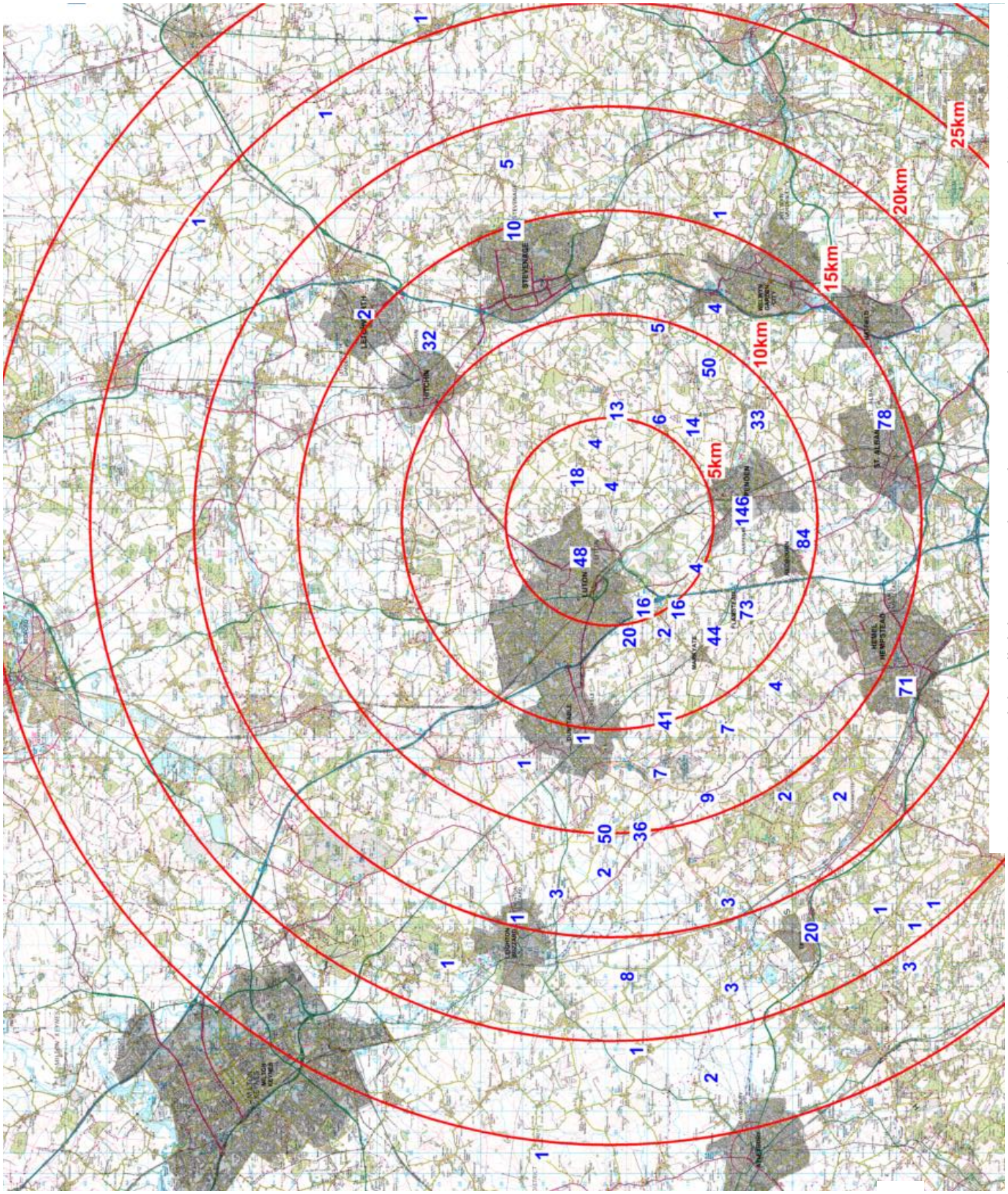
Location	Complaints	Events* (eliciting a complaint)	Complainants	*Average complaints per complainant*	*Average Events per Complainant*
Ashwell	1	0	1	*1*	*0*
Ayot St Lawrence	50	36	4	*12.5*	*9*
Bellingdon	1	1	1	*1*	*1*
Bendish	4	6	1	*4*	*6*
Berkhamsted	2	0	1	*2*	*0*
Blackmore End	14	16	5	*2.8*	*3.2*
Breachwood Green	18	18	9	*2*	*9*
Buckland Common	1	1	1	*1*	*1*
Buntingford	1	0	1	*1*	*0*
Caddington	20	20	15	*1.3*	*1.3*
Cholesbury	1	1	1	*1*	*1*
Codicote	5	6	4	*1.3*	*1.5*
Dagnall	9	8	4	*2.3*	*2*
Diamond End	4	4	2	*2*	*2*
Dunstable	1	1	1	*1*	*1*
Dunton	1	6	1	*1*	*6*
Eaton Bray	50	113	24	*2*	*4.7*
Edlesborough	36	59	22	*1.6*	*2.7*
Flamstead	73	167	21	*3.5*	*8*
Gaddesden Row	4	1	4	*1*	*0.3*
Great Billington	3	1	1	*3*	*1*
Gubblecote	3	35	1	*3*	*35*
Gustard Wood	5	8	2	*2.5*	*4*
Harpenden	146	744	38	*3.8*	*20*
Heath and Reach	1	2	1	*1*	*2*
Hemel Hempstead	71	102	8	*8.9*	*12.8*
Hitchin	32	52	3	*10.7*	*17.3*
Houghton Regis	1	1	1	*1*	*1*
Hulcott	2	1	1	*2*	*1*
Kensworth	41	93	11	*3.7*	*8.5*
Kimpton	6	5	6	*1*	*0.8*
Kinsbourne Green	4	4	4	*1*	*1*
Leighton Buzzard	1	1	1	*1*	*1*
Letchworth	2	5	2	*1*	*2.5*
Little Gaddesden	2	2	2	*1*	*1*
Luton	48	61	30	*1.6*	*2*
Markyate	44	39	18	*2.4*	*2.2*
Mentmore	8	53	1	*8*	*53*
Northall	2	1	2	*1*	*0.5*
Pepperstock	16	38	5	*3.2*	*7.6*
Pitstone	3	1	2	*1.5*	*0.5*
Redbourn	84	94	25	*3.7*	*3.8*
Sandon	1	0	1	*1*	*0*
Slip End	16	16	6	*2.7*	*2.7*
St Albans	78	150	29	*2.7*	*5.2*
St Leonards	3	3	3	*1*	*1*
Stevenage	10	24	9	*1.1*	*2.7*
Studham	7	2	6	*1.2*	*0.3*
Tewin Wood	1	2	1	*1*	*2*
Tring	20	104	4	*5*	*26*
Walkern	5	2	4	*1.3*	*0.5*
Welwyn	4	7	3	*1.3*	*2.3*
Wheathampstead	33	28	11	*3*	*2.5*
Whipsnade	7	9	2	*3.5*	*4.5*
Whitwell	13	8	5	*2.6*	*1.6*
Wingrave	1	0	1	*1*	*0*
Woodside	2	2	2	*1*	*1*
Totals	**1,022**	**2,164 (1,606 **)**	**379**	***2.7***	***5.7 (4.2**)***

* Where complaints are of a general nature (i.e. frequency or general disturbance), individual events may not have been specified.

** Figures excluding 558 events reported by just one resident in Harpenden.

Furthermore one individual in Harpenden has continued to report a large number of events throughout the year. Whilst these events are no longer included in statistics (in agreement with the LLACC) the complaints received from this individual (reporting general disturbance and frequency) are still included in the complaints total and this individual is included in the complainants total.

8.8. Location of Complaints 2013



8.9. Method of Complaint Receipt

How Received	% of Total Complaints
E-mail	73%
Telephone	26.5%
Letter	0.5%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Airfield Environment Office by the following means:

Postal Address: **Airfield Environment Office**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY

Direct Telephone: **([redacted] (24 hours)**

Direct email*: noise@ltn.aero

***** A link also exists on the www.london-luton.co.uk website, providing a template for reporting concerns relating to aircraft activity, which is then sent directly to the Airfield Environment Office for logging, investigation and response.

8.10. Community Relations

RNAV1 Trials

Following on from the easyJet flight trial in 2011 to help find a way to improve track-keeping on the 26 Clacton/Dover/Detling flight route, discussions continued with the CAA-Directorate of Airspace Policy (DAP), to agree the best way forward regarding the design of a new route structure based on results of that trial. As a result a dedicated SID/NPR Task Force was set up, chaired by Neil Thompson, London Luton Airport Operations Director, involving high level representatives from DAP, NATS, Airline partners and other UK Airports. This group met on a regular basis and following extensive analysis and further simulation, work was carried out by easyJet before a final procedural design for a revised Standard Instrument Departure (SID) route on the 26 Clacton/Dover/Detling heading was completed. Progress updates were reported regularly to the London Luton Airport Consultative Committee (LLACC) and the Noise & Track Sub-Committee (NTSC) and to all those affected communities.

A number of individual Stakeholder Engagement Briefings were held throughout January and February 2013 to provide progress updates on proposals for the design of an RNAV1 westerly departure route for the 26 Clacton/Dover/Detling heading. Details relating to proposal for 'live' trials, incorporating two alternative options, over a 12 week period starting 7th March 2013 were explained and attendees were asked to encourage local residents to provide feedback (both positive or negative) on any perceived change in flight patterns and/or noise during the duration of the trial. This feedback would then be assessed independently along with all relevant noise monitoring data before a decision was then taken as to whether or not to proceed with a formal Airspace Change Proposal consultation. The LLACC and NTSC members and all those who attended the Stakeholder meetings were advised that an RNAV1 Briefing document was available to download from the Airport website.

RNAV1 trials, involving a number of operators flying a revised departure flightpath on the 26 Clacton/Dover flight route during periods of westerly operations took place between 7th March and 22nd June 2013. The LLACC and NTSC members were involved at all stages of the process and full details regarding the background and objective of the two trials (210knots & 220knots) were published on the Airport website. Local residents were asked to provide feedback on any perceived changes in noise levels and/or flightpaths throughout the duration of the trials. A detailed noise monitoring programme was also undertaken, whereby a dedicated portable noise monitoring trailer was located in a number of sites along the flight route to determine the actual noise levels experienced in those communities, pre-trial, during and post-trial. At the end of the trial all operators reverted to non-trial procedures and a detailed assessment was carried out, taking into account all stakeholder feedback received.

On 26th November 2013 the Airport held a further stakeholder meeting at Putteridge Bury, to provide a progress update on the analysis results from the RNAV1 trials and to outline proposals to proceed with a formal Airspace Change Proposal consultation early in 2014, in accordance with CAA guidelines (CAP 725), for a revised flight route on the 26 Clacton/Dover/Detling heading using RNAV1 procedures (220knots). All interested parties were invited to attend this briefing, along with NATS and the LLACC/NTSC members. Below is a list of those communities/organisations represented at that stakeholder meeting.

- Central Bedfordshire Council
- Dacorum Borough Council
- Flamstead Parish Council
- Harpenden Town Council
- Herts Association of Parish & Town Councils
- Luton Borough Council
- Markyate Parish Council
- Redbourn Parish Council
- Sandridge Parish Council
- Slip End Parish Council
- St Albans District Council
- Wheathampstead Parish Council
- NATS (Luton)
- NATS (Terminal Control – Swanwick)
- HALE
- HarpendenSky
- LADACAN
- LLATVCC
- S.O.S.

Community Visits to the Airport

Invitations are often extended to local residents and the LLACC members to visit the Airfield Environment Office for a demonstration of the Aircraft Noise & Track Monitoring System, to discuss specific concerns and to view for themselves flight tracks of LLA aircraft operations in their area.

In addition to the various RNAV1 Stakeholder Briefings outlined above, the Airport hosted a visit from a local resident of St Albans in May 2013, in order to clarify the general impact of Luton aircraft operations in that area and to explain the objectives of the RNAV1 trials underway at that time. At the beginning of October 2013, the Operations Director hosted a further meeting with this St Albans resident to update them on the analysis work being undertaken following the end of the RNAV1 trials and to discuss general concerns regarding track-keeping of Luton departures in relation to their property.

Towards the end of May 2013, the Operations Director met with a resident of Flamstead (also representing HALE and LADACAN) to provide a progress update on the RNAV1 trials. A member of the team from Bickerdike Allen Partners (BAP) was also present at this meeting to discuss the methodology for analysis of noise data. In July 2013, the Operations Director arranged a further meeting with this Flamstead resident in order to discuss the detailed analysis work being undertaken following the end of the RNAV1 trials on 22nd June 2013.

Airport Visits to the Community

Whilst no invitations were received by the Airfield Environment Office during 2013, Airport representatives were invited to attend the Bedfordshire Business Excellence Awards in November 2013 and were delighted that London Luton Airport won the **"Community Investment"** award. The judges' criteria were "A proud Bedfordshire based company planning continued growth within the community. A company that can demonstrate successes within the community including financial investment, fundraising activities and steps taken to ensure the employee base reflects the local community".

Throughout 2013, London Luton Airport staff continued to take part in a variety of fundraising events and volunteering activities within the local community, in support of our charity partner Sue Ryder.

9. Employment

9.1. Introduction

Employment at and surrounding London Luton Airport (LLA) contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the Airport. Thus any analysis of the Airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the Airport boundary has been conducted, the results of which are summarised below.

9.2. Methodology

The methodology for this year's analysis is the same as for the previous year. Administrative data sources were used to conduct the survey instead of sending out questionnaires as was the case up to the 2009 survey. The methodology was changed from previous years to be more cost and time efficient in the use of data which was both already purchased and covered the majority of the same information which the survey had historically asked for. The other major advantage was that the Standard Industrial Classification was already listed on the data source thus eliminating the need for businesses to self-classify.

The Inter Departmental Business Register (IDBR) was used as the main data source. This Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted (source: ONS website www.statistics.gov.uk).

An initial list was received from London Luton Airport of companies within their boundary. The listing was matched against the IDBR. Companies outside the Airport boundary were identified by the street names/areas as follows:

- Spittlesea Road
- Part of Frank Lester Way
- President Way
- Wigmore House
- Part of Airport Way
- Barratt Industrial Park
- Airport Executive Park

Nine companies who appeared on the list but not the IDBR had imputed figures gained from Airport colleagues and/or planning applications.

The industrial classification used has been updated to the SIC 2007 coding framework used by the Office for National Statistics. This means that the coding will have changed from that found up to the 2009 report. Revision is necessary due to "the need to adapt the classifications to changes in the world economy. The revised classifications reflect the growing importance of service activities in the economy over the last 15 years, mainly due to the developments in information and communication technologies (ICT)". (Source: UK Standard Industrial Classification of Economic Activities 2007 (SIC 2007) Structure and explanatory notes, http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html).

For the purposes of full interpretation of the results, it should be noted that the sections used in the pre-2010 report map to the new sections as follows:

Previous Codes	New Codes
Forwarding of Freight	Transportation and Storage
General Public Service Activities	Public Administration and Defence etc
Hotels and Restaurants	Accommodation and Food Service Activities
Non Scheduled Passenger Air Transport	Transportation and Storage
Other Supporting Air Transport Activities	Transportation and Storage
Public (Scheduled) Passenger Air Transport	Transportation and Storage
Renting of Automobiles	Administrative and Support Service Activities
Retail Trade	Wholesale and Retail Trade etc
Tour Operators	Administrative and Support Service etc
Travel Agencies	Administrative and Support Service etc
Wholesale of Petroleum Products	Wholesale and Retail Trade etc
Miscellaneous (Airline/Aviation Related)	Not Used
Miscellaneous (Non Airline/Aviation Related)	Not Used

Note: Individual companies may have moved within the coding structure

9.3. Total Employment in and around the Airport

Using main section headings from the Standard Industrial Classification 2007 (SIC 2007), the following was found. Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	400
Administrative and Support Service Activities	1,800
Arts, Entertainment and Recreation	#
Financial and Insurance Activities	#
Human Health and Social Work	#
Information and Communication	#
Manufacturing	1,400
Professional, Scientific and Technical Activities	#
Public Administration & Defence; Compulsory Social Security	#
Transportation and Storage	4,400
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	300
Grand Total	**8,400**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data

Due to confidentiality issues we are bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

The table illustrates that there are an estimated 8,400 employees in and around the Airport. This is an increase from last year's estimate of 8,200.

9.4. Employment By Working Pattern

The IDBR provides employment figures by full and part time working pattern. The following is found:

Standard Industrial Classification 2007, Section Names	Full Time Employees
Accommodation and Food Service Activities	200
Administrative and Support Service Activities	1,500
Arts, Entertainment and Recreation	#
Financial and Insurance Activities	#
Human Health and Social Work	#
Information and Communication	#
Manufacturing	1,300
Professional, Scientific and Technical Activities	#
Public Administration and Defence; Compulsory Social Security	#
Transportation and Storage	3,500
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	200
Grand Total	**6,800**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data

Standard Industrial Classification 2007, Section Names	Part Time Employees
Accommodation and Food Service Activities	200
Administrative and Support Service Activities	#
Arts, Entertainment and Recreation	#
Financial and Insurance Activities	#
Human Health and Social Work	#
Information and Communication	#
Manufacturing	#
Professional, Scientific and Technical Activities	#
Public Administration and Defence; Compulsory Social Security	#
Transportation and Storage	900
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	#
Grand Total	**1,300**

 # Figures have been suppressed where there are less than three companies in a given Sector and/or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data.

There were several companies who did not state their full/part time working split on the IDBR therefore the figures above do not add to the total employment figures.

The percentage split of full/part time employees found at the Airport, compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of Luton Airport	81.1%	15.7%
Luton UA	76.0% (confidence limit 3.1)	23.5% (confidence limit 3.1)

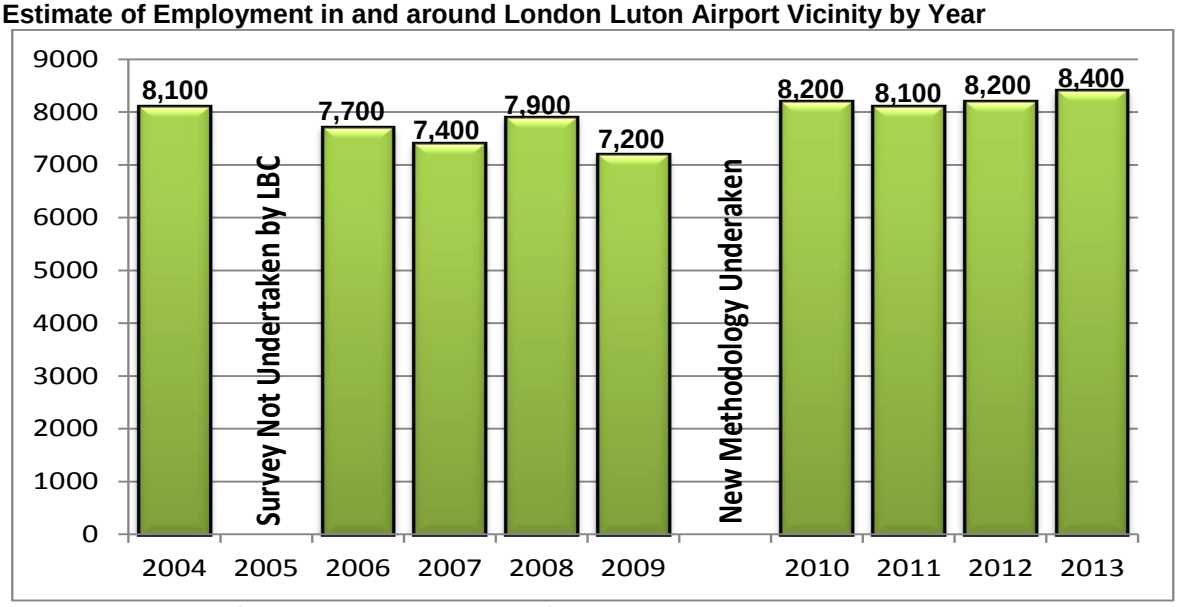
Source for Luton UA Figures: Annual Population Survey, Office for National Statistics Jan 2013 – Dec 2013, latest data. Figures are percentages of those in employment.

Full and part-time working patterns in the vicinity of the Airport differs from that found within Luton as a whole, but the proportion of part time employees has increased since the last survey which may have contributed to the overall increase in employee numbers.

9.5. Time Series

As previously stated, due to the methodological differences employed between years, it is not possible to directly compare the total employment figures over time. However, in the interest of completeness, the following figures from previous years can be used as a proxy measure of changing patterns.

Estimate of Employment in and around London Luton Airport Vicinity by Year



Source: AMR Employment Surveys 2004 and 2006-2013

9.6. Conclusion

In conclusion, there are around 8,400 employees working in the vicinity of the Airport which is slightly more than the 2012 estimate and may have been driven in part by an increase in part time employment. Whether this pattern is set to continue will be seen in future estimates. Please note that due to confidentiality issues we are bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

10. Surface Access

10.1. Road Traffic

The information contained in this section is based on traffic counts conducted at 8 sites during the period 12th-18th September 2013. This period is comparable with previous summer traffic counts and avoids any periods when significant changes in traffic characteristics can occur.

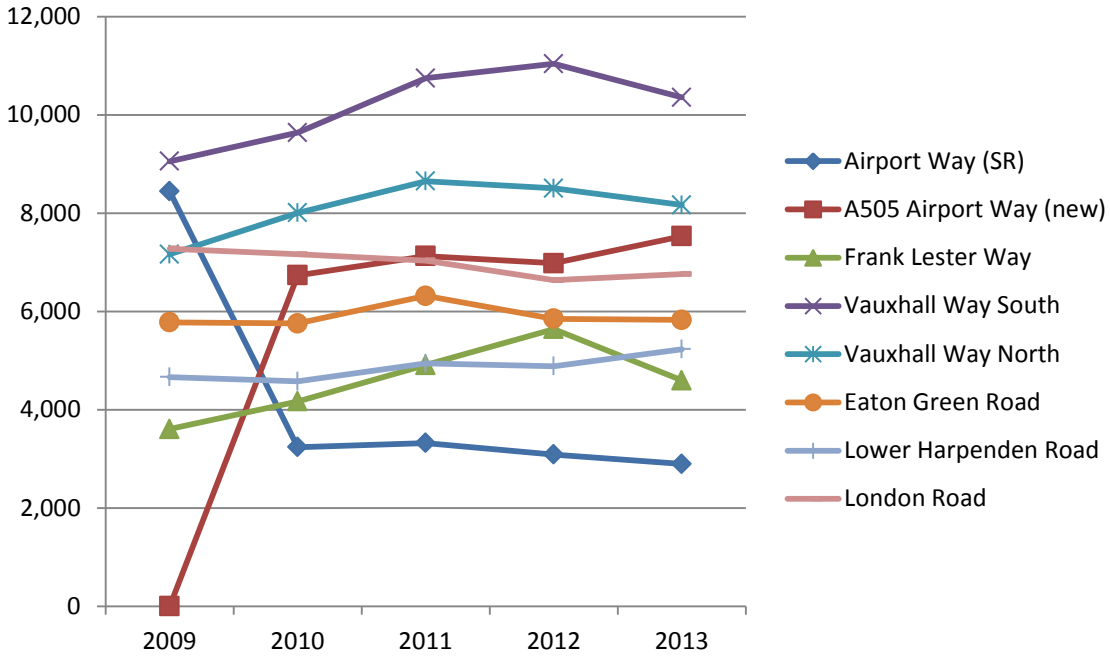
The table and graph below show an increase in 12hr/5day traffic flows between 2012 and 2013 on 2 of the 8 monitored roads, the highest increase being +553 (+7.3%) on Airport Way (new). The most significant decrease in traffic is -1,045 (-22.7%) on Frank Lester Way. However, it should be noted that there was a significant increase in traffic on Frank Lester Way in the 2012 survey, which was attributed to drivers avoiding highway works along Eaton Green Road during that time.

The roads further away from the Airport boundary will also be carrying traffic related to other developments or through traffic and therefore potentially carrying a lower percentage of airport related traffic. In both cases the count indicates a decrease in traffic on these routes from a similar period in 2012.

Summer 2009 - 2013 Traffic Counts (Average 12 hrs/5 day)						
	Map ref	**2009**	**2010**	**2011**	**2012**	**2013**
Airport Way (SR)	*599*	8,443	3,237	3,323	3,088	2,897
A505 Airport Way (new)	*925*	0*	6,735	7,127	6,979	7,532
Frank Lester Way	*445*	3,606	4,170	4,908	5,642	4,597
Sub-total		***12,049***	***14,142***	***15,358***	***15,709***	***15,026***
Vauxhall Way South	*520*	9,055	9,638	10,746	11,039	10,355
Vauxhall Way North	*603*	7,164	8,005	8,652	8,505	8,164
Eaton Green Road	*677*	5,780	5,755	6,317	5,849	5,826
Lower Harpenden Road	*106*	4,666	4,576	4,942	4,885	5,232
London Road	*393*	7,277	7,163	7,037	6,634	6,759
Sub-total		***33,942***	***35,137***	***37,694***	***36,912***	***36,336***
Total		**45,991**	**49,279**	**53,052**	**52,621**	**51,362**

** Road not open*

Summer 2009 - 2013 Traffic Counts (Average 12 hrs/5 day)

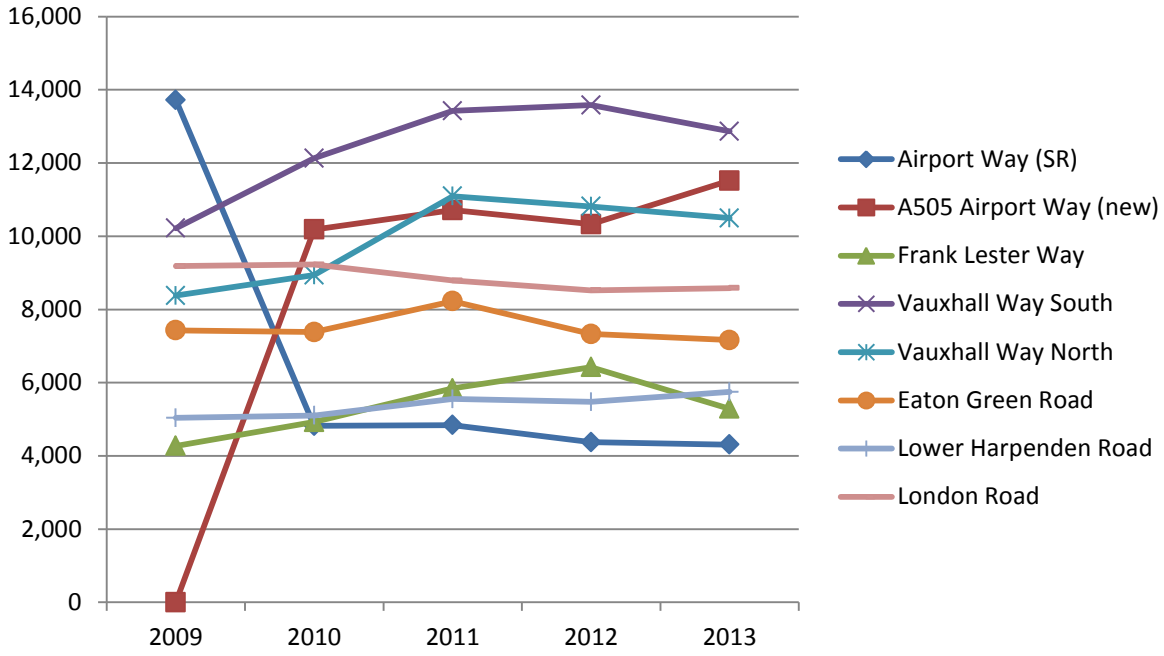


For the 24-hour week (24/7), the table and graph reveal similar patterns to the 12hr/5day traffic counts. The highest increase in traffic is +1,188 (10.3%) on Airport Way (new), while the most significant decrease in traffic is -1,137 (-21.5%) on Frank Lester Way.

Summer 2009 - 2013 Traffic Counts (Average 24 hrs/7 day)						
	Map ref	**2009**	**2010**	**2011**	**2012**	**2013**
Airport Way (SR)	*599*	13,721	4,818	4,840	4,374	4,309
A505 Airport Way (new)	*925*	0*	10,185	10,714	10,330	11,518
Frank Lester Way	*445*	4,275	4,925	5,842	6,426	5,289
Sub-total		***17,996***	***19,928***	***21,396***	***21,130***	***21,116***
Vauxhall Way South	*520*	10,217	12,131	13,421	13,582	12,865
Vauxhall Way North	*603*	8,380	8,939	11,093	10,813	10,496
Eaton Green Road	*677*	7,431	7,383	8,226	7,330	7,161
Lower Harpenden Road	*106*	5,040	5,104	5,555	5,475	5,746
London Road	*393*	9,181	9,225	8,788	8,523	8,582
Sub-total		***33,942***	***35,137***	***37,694***	***36,912***	***36,336***
Total		**58,245**	**62,710**	**68,479**	**66,853**	**65,966**

* Road not open

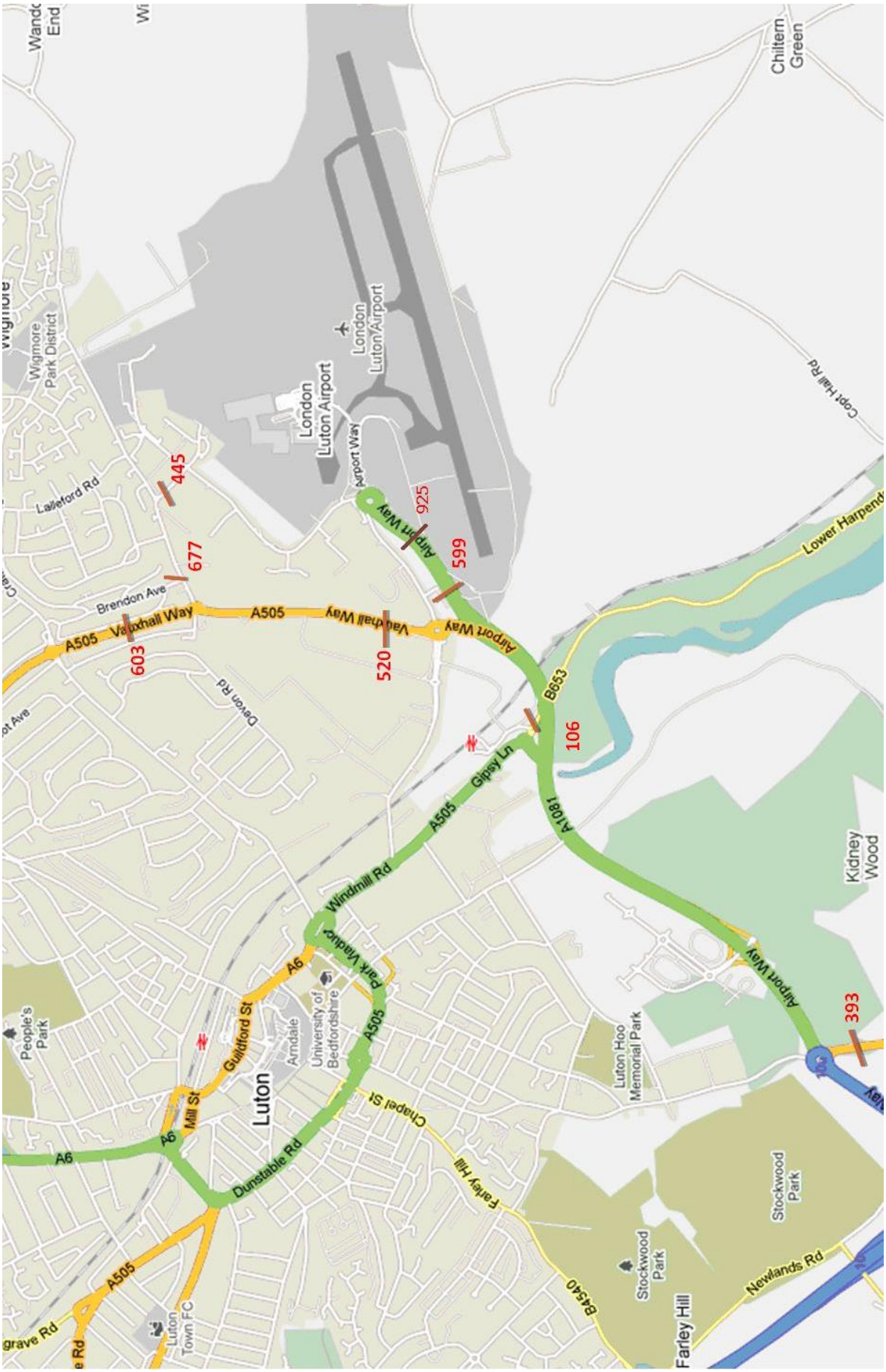
Summer 2009-2013 traffic counts – average 24 hours



Traffic flow along Airport Way (SR) has consistently decreased over the last five years, which is expected given that Airport Way (new) opened in 2009. It is possible that this route may start to show a slight increase from this period onwards as it is now part of the Luton Dunstable Busway route to the terminal.

This data indicates that Vauxhall Way axis accommodates the highest traffic volume in this vicinity. This is due to its strategic location and connectivity to other district and arterial roads into and out of Luton. It is likely that the completion of East Luton Corridor engineering operations and increased activities in and around London Luton Airport have resulted in significant redistribution of traffic flow in the area. See the Figure below for indicative location of these observation points.

Local Highway Network



10.2. Public Transport Services

The table below shows the number of scheduled train services per week from Luton Airport Parkway Station have remained the same as in 2012. However, during this period, First Capital Connect increased the number of carriages from 8 to 12 units on peak time services, which provided additional passenger capacity.

SCHEDULED TRAIN SERVICES FROM LUTON AIRPORT PARKWAY STATION

Number of services per week 7 days	Summer 12	Winter 12/13	Summer 13	Winter 13/14
Direction				
Northbound	1,063	1,063	1,063	1063
Southbound	1,042	1,037	1,037	1037
TOTAL	**2,105**	**2,100**	**2,100**	**2,100**

The table below shows passenger numbers by ticket type that travelled through Luton Parkway Station for the last 3 years. This is a new table to the Annual Monitoring Report, but one which illustrate changes of patronage to Parkway Station and possibly modal change.

The figures have been taken from the Office of Rail Regulation Station Usage estimates. These are published annually. The most recent statistics are quoted. In displaying these figures, season ticket holders have been shown after the sub-total, as it is a reasonable assumption that generally these travellers will not be air travellers.

The figures show a steady increase in rail passenger numbers using Luton Parkway Station. In 2013 the Northern Entrance to the station was opened, providing access from Kimpton Road. Later paragraphs will refer to changes to bus services that may influence these numbers.

PASSENGER NUMBERS BY TICKET TYPE FROM LUTON PARKWAY STATION

Ticket type	2009-2010	2010-2011	2011-2012
Full tickets	1,007,100	1,033,698	1,241,776
Reduced/concessions	816,902	840,880	740,064
Sub-total	***1,824,002***	***1,874,578***	***1,981,840***
Season tickets	414,656	437,542	447,764
TOTAL	**2,238,658**	**2,312,120**	**2,429,604**

For the table above, the years run from 1st April to 31st March. No data is currently available for the previous year.

10.3. Bus and Coach Services

Some National Express services make scheduled stops within the Town Centre, also allowing for patronage between the Town Centre and the Airport.

Within this monitoring period, Greenline services 757 and 767 ceased services direct to the Airport (although continued services to Luton Railway Stations). In addition the 321 and the 61 services were withdrawn from the Airport. Although not included in the count of services, the additional local services to the Airport still provide links to the Airport.

Local bus services show a significant increase, due to opening of the Luton Dunstable Busway. The Arriva 'A' service commenced in September 2013 and offers an extra 497 buses a week, along a fast and dedicated route from Dunstable to the Airport.

The rise in services calling at the Airport and the opening of a northern entrance to Luton Parkway Station, with a footpath leading to Kimpton Road, is helping to promote public transport as a means of getting to and from the Airport.

All single deck buses and coaches are required to be fully wheelchair accessible by 1st January 2016 and these vehicles are gradually being phased in, with many routes offering accessible services already.

BUS AND COACH SERVICES FROM LONDON LUTON AIRPORT

Number of Services per Week	Summer 2012	Winter 2012/13	Summer 2013	Winter 2013/14
Destination				
LOCAL				
Luton Railway Station	319	319	319	586
Others	1,830	1,830	1,830	1,577
National				
Central London	454	454	454	833
Others	700	700	700	1015
TOTAL	**3,303**	**2,971**	**3,303**	**3,955**

Number of Services per Week	Summer 2012	Winter 2012/13	Summer 2013	Winter 2013/14
AIRPORT- AIRPORT LINK				
Birmingham	91	91	91	91
East Midlands	0	0	0	91
London Gatwick	70	70	70	203
London Heathrow	154	154	154	336
London Stansted	182	182	182	133
Manchester	7	7	7	7
TOTAL*	**504**	**504**	**504**	**861**

**As some services call at more than one airport, the total number of actual departures will be less than the sum of the disaggregated services to each airport.*
This information represents a general guide to the number of services based on the information available from the various bus operators.

10.4. Additional Information

LLAOL published its first Airport Surface Access Strategy (ASAS) in 2000, in line with the recommendations of the 1998 Integrated Transport White Paper. This strategy set targets to encourage air passengers and employees to access the airport using more sustainable modes. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework. An interim ASAS was published in 2009 to cover the period to 2011.

In January 2012 LLAOL published its *Airport Surface Access Strategy* 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees.

The planning application submitted by LLAOL in November 2012 indicates that the ASAS and the travel plans for passengers and staff will be monitored as passenger throughput at the airport grows (either as a result of natural growth or as a result of the planning application).

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLAOL uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table below shows the weighted CAA data for 2008 to 2012. The CAA statistics suggest that 33% of airport passengers now choose to use public transport.

Table 10.3.1: Passengers travelling to the Airport by various modes (CAA Data)

%	2008	2009	2010	2011	2012
Private Car – Drop Off	26	28	27	27	27
Private Car – Park	27	27	24	23	23
Rail	19	17	17	15	17
Bus/Coach	14	14	15	16	16
Taxi	14	14	16	18	17

10.5. Car Parking

Whilst the Surface Access Strategy seeks to encourage passengers and staff to travel to LLA by sustainable means, there will always be some passengers and staff who have no option but to travel by car. Policies LLA1 and LLA2 of the Borough of Luton Local Plan set out the criteria for airport car parking, both on and off site.

The number of staff car parking spaces remained unchanged during 2013, whilst passenger car parking capacity increased slightly in the long term car park.

On site Car Parks or Car Parks within the Airport boundary

Passenger	Spaces	Area m²
Short Term	1,089	39,373
Mid Term	2,301	65,000
Long Term	4,301	98,050
Priority Parking	170	5,778
Passenger Total	***8,678***	***208,201***
Staff Total	***4,730***	***97,270***
Total	**12,466**	**305,471**

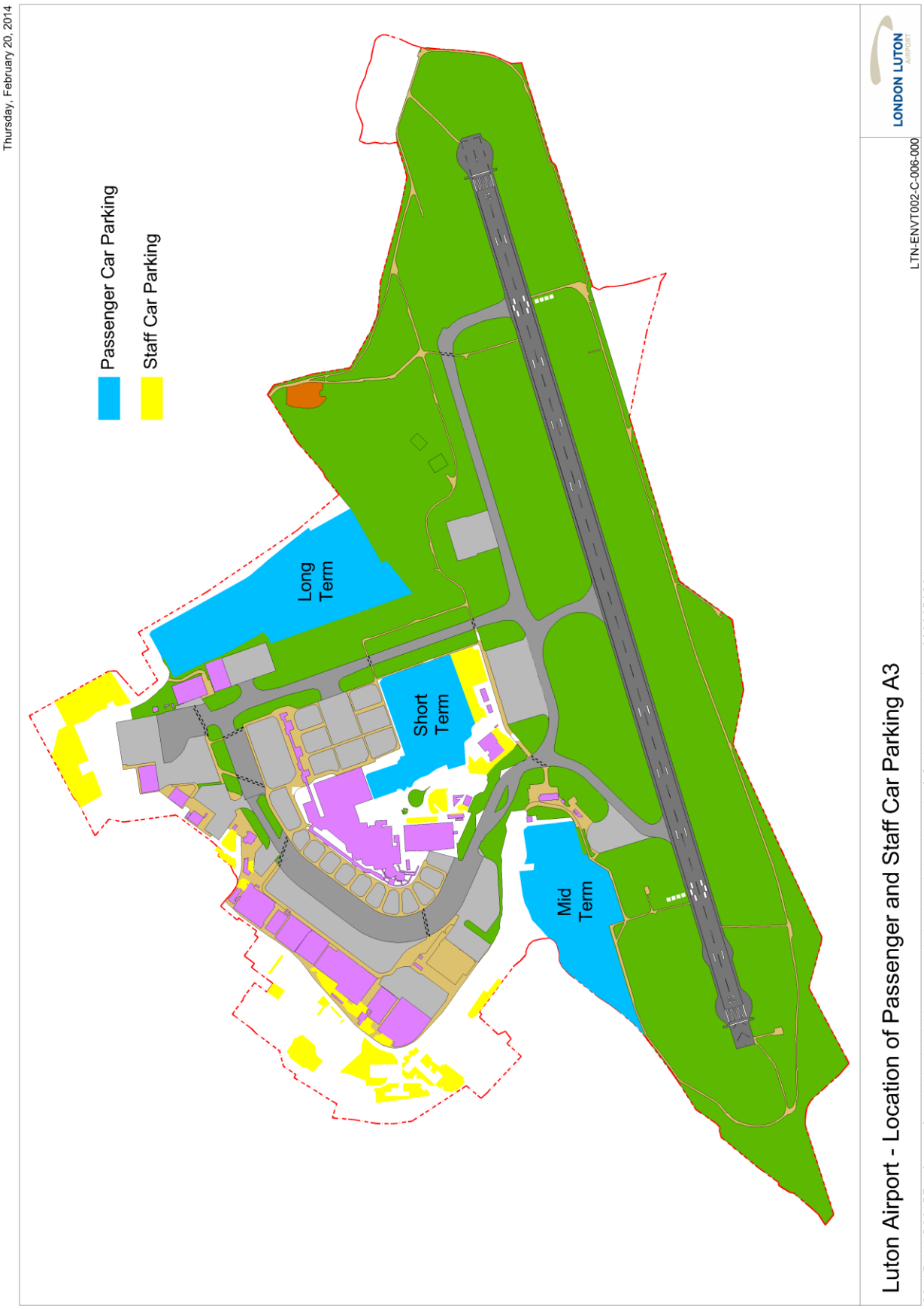
Policy LLA2 seeks to resist off site airport related parking, unless in exceptional circumstances. However, the existence of these sites should be acknowledged and monitored. Only authorised car parks are noted in the following table, although others may occur around the Airport boundary.

Off site Car Parks or Car Parks outside the Airport boundary

Operator	Spaces*	Area ha
Airparks (Slip End)	4,000*	5.97
Central Car Storage	216*	0.56
Airport Carparkz	1500	2.25
Paige Airport Parking	1600	2.49
Airport Park Luton	450	0.68
Total	**7,766**	**11.86**

* Numbers of spaces given relates to the number approved as part of planning conditions imposed at the time of determination of the application.

Location of Passenger and Staff Car Parking



11. Planning

11.1. National Aviation Policy

The Government's White Paper "The Future of Air Transport" which was published in December 2003 was replaced by the Aviation Policy Framework (APF) in March 2013. The APF is a higher level document than the previous White Paper and no longer refers to specific airports. For further information regarding National Aviation Policy prior to 2003, please refer to previous editions of the AMR.

The Air Transport White Paper had set out in detail which specific developments would be supported at particular airports across the UK, though the Coalition Agreement of May 2010 superseded this in relation to further runways at the major south-east airports. The APF does not provide such detail, but rather sets out the Government's objectives and principles to guide plans and decisions at the local and regional level. The independent Airports Commission (also known as the Davies Commission) will provide recommendations in relation to the scale and timing of any requirements for additional capacity.

In the short term, to around 2020, the APF proposes a strategy based on a suite of measures, namely:

- *"making best use of existing capacity to improve performance, resilience and the passenger experience;*
- *encouraging new routes and services;*
- *supporting airports outside the South East to grow and develop new routes; and*
- *better integrating airports into the wider transport network."*

The APF makes a number of references to the role that LLA plays in the UK. In paragraph 1.41 it states:

"The demand for aviation in the UK is concentrated in the South East, a densely populated region whose economy comprises multiple high-value sectors including finance, professional services, technology, media and fashion. This drives consistently high demand for aviation in the region, so that the five main South Eastern airports (Heathrow, Gatwick, Stansted, Luton and London City) account for nearly two-thirds of passengers at UK airports and nearly half of all air transport movements."

In terms of the role that LLA could play in global connectivity paragraph 1.79 states: *"To improve connectivity at an international level and to help make better use of existing infrastructure at London's congested airports, we announced in 2011 that we would consult on extending the UK's existing regional fifth freedoms policy to Gatwick, Stansted and Luton. The granting of fifth freedoms would allow a foreign airline to carry passengers between these three London airports and another country as part of a service that begins or ends in the airline's home country. For example, a Singaporean airline would be able to operate a service from Changi Airport in Singapore to Gatwick Airport and then on to JFK Airport in the US, picking up passengers at Gatwick Airport and carrying them to New York."*

The APF also considers access to airports and notes the investments that have been made to improving rail services to Luton and Gatwick and makes specific reference to the investment the Council is making to M1 Junction 10a.

The Government's overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise. This is consistent with the Government's Noise Policy for England, which aims to avoid significant adverse impacts on health and quality of life. To this end the Government recognises the International Civil Aviation Organisation's (ICAO) 'balanced approach' which seeks to identify the noise problem at an airport and then assess the cost-effectiveness of various measures to reduce noise. The four main elements are: reduction at source (quieter aircraft); land-use planning and management (including use of conditions and legal agreements to mitigate and reduce to a minimum adverse impacts); operational procedures (how aircraft are flown and their routes to limit noise impacts); and operating restrictions (preventing noisier aircraft from flying to airports).

The Airports Commission was established in September 2012 with the role of defining the Governments objectives and policies on the impacts of aviation. To date they have heard evidence from a number of parties and carried out a number of consultations on future capacity, climate change and the role of regional airports. Their most recent consultation was in October 2013 covering emerging thinking on airport capacity in the UK.

The Commission has provisionally concluded that additional runway capacity will be required in the south east of England in the coming decades. It also will be looking at a mechanism for managing the carbon impact of aviation. Therefore any decision on future airport capacity is likely to be taken after 2015.

The updated National Infrastructure Plan was published on 4 December 2013 and sets out the Government's plan to meet the UK's infrastructure ambitions for the next decade and beyond.

The Plan predicts that passenger numbers at UK airports will increase from the 2011 figure of 219 million passengers per annum (mppa), to 315mppa in 2030 and 445mppa by 2050. These forecasts are based on the effect of capacity constraints that will present a capacity challenge in the medium and long term beyond 2020. The Airports Commission will examine the scale and timing of any requirements for additional capacity to maintain the UK's global hub status. Their findings will support a National Policy Statement (NPS) for Airports for a future Government. No date is given at this stage for the publication of the NPS

11.2. Strategic Planning Policy

In December 2010, the Government announced a review of planning policy, designed to consolidate all Planning Policy Statements (PPS), Circulars and Planning Policy Guidance Notes (PPG) into a singular National Planning Policy Framework (NPPF). Following consultation on a draft in July 2011, the final version was published on 27th March 2012. Local Planning Authorities were given a 12 month transition period to ensure their plans were compliant with the National Planning Policy Framework (NPPF).

In 2011 the Localism Act was given Royal Assent. This provided enabling powers for the Secretary of State to abolish the regional planning system. The East of England Plan (Revocation) Order 2012 revokes the regional spatial strategy and any direction preserving policies in Old Structure Plans. The Order was made on 6th December 2012 and came into force on 3rd January 2013. The Localism Act also provided powers for new plan making regulations introduced in 2012 and the preparation and consolidation of plan documents into single Local Plans.

Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. The NPPF must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions. The NPPF focuses on the promotion of sustainable development.

In summary, since the revocation of the East of England Regional Plan, the development plan for the area comprises the NPPF and the Luton Local Plan (2001-2011).

11.3. Local Planning Policy

The Luton and Southern Central Bedfordshire Joint Committee was disbanded in March 2012 following the Secretary of State withdrawing the pre submission Core Strategy in September 2011. Luton Borough Council Members of the Joint Committee did not support the core strategy document. However, Central Bedfordshire Council have prepared a new Development Strategy largely founded on the approach of the previous joint core strategy as far as it relates to Central Bedfordshire and this plan has undergone a pre submission consultation although its progress is halted pending new work on objective housing evidence via a joint Strategic Housing Market Assessment with Luton and other partners within the housing market area. Consequently work commenced on a Local Plan for Luton under the requirements set out within the NPPF. However, in the interim, the Borough Council's adopted Luton Local Plan (March 2006) remains part of the statutory development plan until replaced when the new local plan is prepared.

Furthermore, the LLA Development Brief (February 2000) sets out detailed proposals for further development at LLA and is adopted by Luton Borough Council as Supplementary Planning Guidance (in September 2001).

The NPPF was published in March 2012 and requires plans to be soundly prepared i.e. positively prepared (evidenced based on objective needs); justified (against reasonable alternatives); effective (deliverable which requires local authorities to adopt an approach under the duty to cooperate on cross boundary matters); and consistent (with national policy).

The publication of the Localism Act in November 2011 signalled an overhaul of the planning system with more emphasis on a national policy framework and local neighbourhood plans.

A work programme for the new Local Plan (Local Development Scheme or LDS) to replace the existing Luton Local Plan was approved by the Council's Executive on 23 January 2012, commencing with evidence gathering. Throughout the process, negotiations are required under the 'duty to cooperate' to achieve a satisfactory understanding with neighbouring authorities. This is critical to the soundness of respective local plans.

A six week consultation took place from 25th June to 3rd August 2012 inviting representations on the content of the new local plan. A revised timetable (LDS) for the preparation of the Local Plan was approved by the Council's Executive on 25th March 2013. Since that time further evidence gathering and evaluation has taken place and the council has decided to introduce an informal draft Local Plan consultation stage before moving to Pre submission consultation. The draft Local Plan public consultation is expected to commence in February/March 2014 and the timetable was again revised at the Executive on the 13th January 2014 (subject to progress of the joint SHMA and final LDS approval by full council).

A separate development plan document relating to the Community Infrastructure Levy (CIL) was also to be progressed in parallel with the new local plan. However, because of evidence on viability and development economics in Luton, this work is in abeyance for 2 years but will be kept under review for any improvement in the development and property market.

11.4. Luton and Dunstable Local Transport Plan 2001-2006 (LTP1)

The Local Transport Plan (LTP1) was first submitted to central Government in July 2000. It contained two major transport schemes proposed to serve the south east of Luton, including the Airport: the Luton and Dunstable Busway (LDB) and road and junction improvements in the East Luton Corridor (ELC). The latter received Government approval following a Public Inquiry in 2005 and construction began in July 2006, funded through the first round of the Communities Infrastructure Fund and the second round of the Growth Areas Fund.

The LDB received provisional funding though the LTP capital programme in December 2003 and a Public Inquiry reported favourably upon the scheme in late 2006. A final business case was submitted in December 2009 and construction began in 2010. The LDB was officially opened by Transport Minister Norman Baker on 24th September 2013.

11.5. Luton-Dunstable-Houghton Regis Local Transport Plan 2006-2011 (LTP2)

The second Luton-Dunstable-Houghton Regis Local Transport Plan was submitted to central Government in March 2006. It includes a long-term strategy, for the period up to 2020. One of the objectives of this strategy is to achieve planned growth at the Airport. Over the period up to 2011 the Plan is structured around a series of 'Shared Priorities', which have been agreed between Central and Local Government: accessibility, air quality, congestion and safety. Of these, accessibility is the most relevant to surface transport serving the Airport.

In addition to continuing support for the LDB and ELC schemes, both of which have now been completed, the LTP2 proposed improvements at Luton Airport Parkway station (providing a new entrance from Kimpton Road) that is consistent with the routeing of the LDB services along Kimpton

Road. The Northern entrance to Parkway Station was opened on 19th April 2013. A footway leads from Kimpton Road direct to platform 1 at the Parkway Station.

The LTP2 also set out a range of other measures to give better access to the Airport, particularly for employees.

11.6. Local Transport Plan for Luton 2011-2026 (LTP3)

The Council was required to submit the third Local Transport Plan (LTP3) to the Government by the end of March 2011 setting out how it would deal with transport matters in and around the town. Whereas the first and second LTPs covered Luton, Dunstable and Houghton Regis, the third plan only covers Luton. The LTP3 comprises two main parts.

The first sets out the long-term Transport Strategy covering the period up to 2026; consistent with the then joint Core Strategy and the Sustainable Communities Strategy. The Council consulted a wide range of partners and stakeholders, including London Luton Airport Operations Limited (LLAOL), in developing this part of the Plan.

Based on recent trends in both passenger throughput and airport employees at Luton, and taking account of recent changes in government policy relating to other London airports, the LTP3 strategy sets out anticipated passenger numbers of between 15.5mppa and 18 mppa by 2026, together with an additional 3000 employees over the same period.

The *Airport Surface Access Strategy* (*ASAS*) 2012-2017 was published by the Airport in January 2012. It is the Airport operator's intention to improve access to the Airport and promote longer term targets to encourage sustainable travel to and from the Airport. The Council will work with the airport operator to achieve this.

The second part of the LTP3 is the Implementation Plan that sets out local transport schemes and initiatives the Council propose to introduce over the period up to 2014/15. Key elements of the Implementation Plan of relevance to the Airport include

- a focus on smarter choices and travel by more sustainable modes (walking, cycling , public transport) supported by employee travel plan initiatives (e.g. car share database)
- implementation of a new northern entrance to Luton Airport Parkway Station
- improvement of M1 Junction 10a, and
- extension of Airport Way to serve planned employment sites east of the Airport

Community and Stakeholder consultation on the whole of the Plan and accompanying Strategic Environmental Assessment (SEA) commenced on 24th December 2010 and ended on Monday 14 February 2011. The finalised LTP3 was presented to the Council's Executive and adopted in March 2011.

The M1 Junction 10a improvements were the subject of examination through the Nationally Significant Infrastructure Project procedure under Section 31 of the Planning Act 2008 (as amended).

The application for the M1 J10a Grade Separated Junction was submitted to the Planning Inspectorate on 29th June 2012 and heard by the Examining Inspector (as the Examining Authority) commencing on 16th November 2012, closing on 13th May 2013. Following the recommendation of the Examining Authority, the Secretary of State for Transport made the Development Consent Order (DCO) on 30th October 2013 which came into force on 20th November 2013. Work will commence in early 2014 and will take around 18 months to complete.

11.7. Developments in and around London Luton Airport

Background

Policy 48 of the Structure Plan 2011 required the long-term growth strategy for the Airport to be subject to a Development Brief. The Development Brief was produced by LLAOL for consultation in February 2000 and subsequently approved as Supplementary Planning Guidance by LBC in September 2001.

The adopted Development Brief is the current framework for planning applications, although the Surface Access Strategy has since been reviewed and a further review was undertaken and the Interim Airport Surface Access Strategy 2009-2011 was published in August 2009. This document was also subject to review in 2012.

Eventually the new planning system and the provisions of the Aviation Policy Framework (AVF) will supersede current policy. Until that time the existing policies have been saved through the process described above.

Under the Town and Country Planning (General Permitted Development) Order 1995, Schedule 2 Part 18 Class A, LLAOL is able to undertake works within the designated 'operational area' of LLA, without the need for formal planning consent. Under this legislation, permitted development includes:

"The carrying out on operational land by a relevant airport operator or its agent of development (including the erection or alteration of an operational building) in connection with the provision of services or facilities at a relevant airport"

An operational building is defined as:

"A building, other than a hotel, required in connection with the movement or maintenance of aircraft, or with the embarking, disembarking, loading, discharge or transport or passengers, livestock or goods at a relevant airport."

Development is not permitted if it involves:

- *The construction or extension of a runway;*
- *The construction of a passenger terminal the floor space of which would exceed 500 square metres;*
- *The extension or alteration of a passenger terminal, where the floor space of the building as existing at 5th December 1988 or, if built after that date, would be exceeded by more than 15%;*
- *The erection of a building other than an operational building*
- *The alteration or reconstruction of a building other than an operational building, where its design or external appearance would be materially affected.*

Planning Applications

On 3rd December 2012, LLAOL submitted a planning application to LBC for:

"Full planning application for dualling of Airport Way/Airport Approach Road and associated junction improvements, extensions and alterations to the terminal buildings, erection of new departures / arrivals pier and walkway, erection of a pedestrian link building from the short-stay car park to the terminal, extensions and alterations to the mid-term and long-term car parks, construction of a new parallel taxiway, extensions to the existing taxiway parallel to the runway, extensions to existing aircraft parking aprons, improvements to ancillary infrastructure including access and drainage, and demolition of existing structures and enabling works. Outline planning application for the construction of a multi-storey car park and pedestrian link building (all matters reserved)"

The application is a hybrid application, with full details submitted for all of the development except in relation to the multi-storey car park and pedestrian link building, where all matters are reserved for subsequent determination. The application was accompanied by an Environmental Statement (ES), with a scoping request having been made in August 2012 and Luton Borough Council (LBC) having provided its scoping opinion in November 2012 (ref 12/01400/FUL).

The scheme involves the following works within the existing Airport boundary:

- Dualling of the road from the Holiday Inn Roundabout to the Central Terminal Area;
- Safeguarding an extension to Airport Way so as to provide an access route to facilitate the development of Century Park;
- Improvements of the public transport hub adjacent to the terminal;
- Construction of a multi-storey car park and pedestrian link to the western side of the existing short-term car park;
- Extension to the mid-term car park and long-term car park;
- Improvements to the terminal building involving internal reorganisation and minor extensions and building works;
- Construction of a new pier (Pier B);
- Construction of a new taxiway parallel to Taxiway Delta; and
- Taxiway extensions and rationalisation of aircraft parking area with new stands replacing and improving existing stands.

This application seeks to increase the capacity of London Luton Airport to 18mppa from a current capacity of approximately 12mppa.

The application was reported to a meeting for LBC's Development Control Committee on 20th December 2013. Members resolved to approve the application, but the application had to first be referred to the National Planning Casework Unit to allow the Secretary of State the opportunity to further examine the application, before formal determination.

There were no other notable physical developments undertaken or commenced by LLAOL within the airport boundary during 2013.

Other developments on or adjacent to the site, but carried out by third parties include;

- Construction of a new vehicular access ramp, linking apron to rear fixed base operation circulation route, with associated exterior stairs and additional security fence and gate. Harrods Aviation (Hangar 129)
- New advertisements for Harrods Aviation (Hangar 129) and Thomson Airways (Hangar 61)

Hotel developments

The Good Practice Guide on Planning for Tourism, which replaced PPG21 (Tourism) in 2006, states: "*Tourism is of crucial importance to this Country. It generates significant revenues, provides millions of jobs, supports communities and helps maintain and improve important national assets".* This document was withdrawn following the publication of the NPPF.

The NPPF also requires local planning authorities "*to plan proactively to meet the development needs of business and support an economy for the 21st Century."*

The area around the Airport proves to be attractive to hotel developers and operators. The following sites have valid planning permissions for such development.

Site address	Current status of application	Number of bedrooms
Express by Holiday Inn	Implemented	147
Hotel Ibis	Implemented	162
Premier Inn (The Brache)	Implemented	131
Napier Park/Stirling Place	A revised scheme was approved subject to the completion of a S106 legal agreement	200
Hampton by Hilton 42-50 Kimpton Road	Opened January 2013	188
Ramada Encore, Airport Way	Opened July 2012	124
Airport Way/ELC	Approved February 2011 not yet commenced.	171
Former Mondi Packaging site, Airport Way	Approved April 2013 not yet commenced	156
Former Mondi Packaging car park site, Airport Way	Approved subject to the completion of a S106 legal agreement	120
	Total rooms	**1399**

An application for a mixed-use development, including a hotel at Vauxhall Trailer Park had been recorded previously in the AMR. This application was withdrawn in 2013, following the applicant's decision not to complete the S106 legal agreement (resulting in no decision being issued).

It is envisaged that the demand for hotel accommodation in Luton will grow as the number of passengers travelling through the airport increases.

Planning Appeals

An appeal for an off-airport car park at Vauxhall Trailer Park was lodged with the Planning Inspectorate in 2010; this appeal was dismissed on 14 February 2011. The appellant has a period of 12 months (until 14th February 2012), in which to cease the use of the site for off airport car parking, following a variation of the enforcement notice by the Inspector.

In February 2012, a further application was submitted, where the appellant provided additional information to address to comments made by the previous Inspector. This application was refused in September 2012 and a further appeal was submitted. This further appeal was to be determined under the Public Inquiry appeals procedure. The appeal was withdrawn in August 2013, before the Public Inquiry was held.

An Enforcement Notice was served in respect of an off-airport car park operator for a site in Park Street, Luton. The site was a former garage site, which had been cleared and vacant for a few years. The site is close to residential properties and the occupants of which were experiencing noise and disturbance at unreasonable hours. The use also raised highway safety issues as well as compliance with Policy LLA2. An appeal against the notice was lodged with the Planning Inspectorate in December 2011 and the appeal was dismissed in February 2012.

The most recent appeal decision, relating to airport car parking received by the Council, was received in May 2013 and related to a site in Latimer Road. The applicant in this case referred to the planning application submitted by the Airport Operator. The Inspector acknowledged the application, which at that time had not been considered by the Development Control Committee, but added that the timing of delivery of the proposed growth is unknown. In this particular case the appellants challenged the Inspector's decision in the High Court. In February 2014, Mr Justice Collins ruled that the Inspector did not take into consideration all the information available to him. It is therefore anticipated that a further appeal will be considered by a different Inspector in due course.

12. Glossary and Definitions

A-weighting	A frequency response used in sound measurement devices to take account of the way the sensitivity of the human ear varies with frequency.
Aircraft Movement	A landing or take-off of any aircraft from the Airport.
Cargo Aircraft	Aircraft movements which are solely for freight. It should be noted that freight can also be carried in the hold of passenger aircraft.
Complaint	A complaint is the reporting of disturbance caused by actual aircraft operations affecting the reporter of the complaint to the Airfield Environment Office, hereafter called the 'complainant'. It reflects discontent and is triggered by or attributed to either a specific aircraft event outstanding in its impact or, by general patterns such as frequency, volume, aircraft fleet mix, runway split, operating hours, etc. One complaint may contain a number of incidences of disturbance referred to as 'events'. All other comments received are logged and reported separately if they do not meet the above criteria.
Decibel (dB)	The logarithmic ratio of a sound pressure compared to a reference sound pressure in decibels, dB. For audible sound A-weighted decibels are commonly used, dB(A).
dB(A)	The unit of sound pressure level, weighted according to the A scale, which takes into account the increased sensitivity of the human ear at some frequencies.
General Aviation	Private Aircraft, Helicopters and Business Jets
ICAO	International Civil Aviation Organisation.
INM	Integrated Noise Model. A method of noise contour modelling which uses a wide range of different aircraft types and can be adjusted according to operating procedures.
LAeq,T	The notional A-weighted equivalent continuous sound level which, if it occurred over the same time period, would give the same noise level as the continuously varying sound level. The T denotes the time period over which the average is taken, for example LAeq,16h is the equivalent continuous noise level over a 16 hour period.
Lden	A-weighted, Leq. noise level, measured over the 24 hour period, with a 10 dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the levels between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.
Lnight	A-weighted, Leq sound Level, measured overnight 23.00 - 0700 hours.
Military	Flights by British or foreign military aircraft exclusively for military purposes.
Noise Certificated	An aircraft conforming to the requirements of ICAO Annex 16 which lays down specific levels of noise not to be exceeded at specific points on an aircraft's departure. An aircraft must be noise certificated in order to operate at United Kingdom Airports after 1 January 1988 unless exempted by the Civil Aviation Authority.

Noise Preferential Route (NPR)	Noise Preferential Routes are established to ensure that departing aircraft avoid overflying densely populated areas in the vicinity of an Airport, as far as practicable. NPRs are valid until the aircraft has reached an altitude (above mean sea level) of 3,000ft during the daytime or 4,000ft at night, depending on the flight route. Once an aircraft has achieved this altitude Air Traffic Control may tactically vector the aircraft, taking into account any other airspace constraints, in order to integrate it into the overall flow of national traffic.
Official	Flights solely for official purposes by British or foreign civil government departments.
Positioning Flights	Flights by air transport operators for the sole purpose of moving their own aircraft, personnel or stores from one place to another and air transport flights forced to return to base by bad weather, engine failure or other causes.
RNAV-1	Area Navigation (GPS based aircraft navigation technology)
Runway Usage	For operational and safety reasons, aircraft generally take-off and land into the wind. When winds come from the west (westerly operations), aircraft will take-off and land towards the west and when winds come from the east (easterly operations) aircraft will depart and land towards the east.
Test & Training	Flights for the purpose of testing aircraft/Airports or for training flying crew or ground personnel. Also included in this category are demonstration flights by makers or sellers of aircraft and aviation equipment. N.B. Flying Club instructional flights are excluded from this category.

13. Useful Links

London Luton Airport	www.london-luton.co.uk
Luton Borough Council	www.luton.gov.uk
The Civil Aviation Authority	www.caa.co.uk
NATS (National Air Traffic Services)	www.nats.co.uk
The Department for Transport (Aviation)	www.dft.gov.uk/aviation
Hertfordshire & Bedfordshire Air Quality Monitoring Network	http://www.hertsbedsair.net/
London Luton Airport Consultative Committee	www.llacc.com
London Luton Airport Night Noise Policy	http://www.london-luton.co.uk/en/content/8/241/operations.html
London Luton Airport Noise Action Plan	http://www.london-lutoninthecommunity.co.uk/noise-action-plan
TraVis online flight tracking tool	http://www.london-luton.co.uk/en/flighttracking/

LTN

This document can be made available in a range of languages, large print, Braille, on tape, electronic and accessible formats from Kevin Owen.
Tel: [redacted]

Informacje te moga być dostępne w innym formacie. Jeżeli wymagana jest kopia napisana większym drukiem, na kasecie lub w języku innym niż angielski prosimy o kontakt telefoniczny pod numerem: [redacted]

ਜ਼ੋਕਰ ਰੁਸੀਂ ਸੁਝਾਓ ਦਿਤੇ ਹੋਏ ਪ੍ਰੋਜੈਕਟ ਬਾਰੇ ਆਪਣੀ ਰਾਏ ਦੇਣੀ ਜਾਂ ਹੋਰ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਕਰਨੀ ਚਾਹੁੰਦੇ ਹੋ ਤਾਂ ਮਿਹਰਬਾਨੀ ਕਰਕੇ ਦੱਲ ਸਭੁ ਨੂੰ 01582 547 087 ਤੇ ਸੰਪਰਕ ਕਰੋ। ਅਸੀਂ ਤੁਹਾਡੇ ਵਿਚਾਰਾਂ ਦੀ ਕਦਰ ਕਰਦੇ ਹਾਂ।

প্রস্তাবিত প্রোজেক্ট সম্পর্কে যদি আপনার মতামত জানাতে চান অথবা কেবলমাত্র বিস্তারিত খবরাখবর জানতে চান, তাহলে মেহেরবানি করে আবদুল সালামের সাথে 01582 547 087 – এই টেলিফোন নম্বরে যোগাযোগ করুন। আমরা আপনার মতামতের মূল্য দেই।

اگر آپ ان تجویز منصوبوں (پروجیکشن) کے بارے میں اپنے خیالات کا اظہار کرنا چاہتے ہیں یا کچھ مزید معلومات حاصل کرنا چاہتے ہیں تو براہ مہربانی محمد الیاس سے 01582 547 087 پر رابطہ قائم کیجئے۔ ہم آپ کی آراء کی قدر کرتے ہیں۔

જો આપને પ્રસ્તુત યોજના બાબત તમારો અભિપ્રાય જણાવવું હોય, અથવા તે વિષે આપને ફક્ત વધુ માહિતીની જરૂર હોય, તો કૃપા કરી મીતા કટેચીયાનો સંપર્ક સાધો; તેમનો ટેલિફોન નંબર છે : 01582 547 087

Produced and published by London Luton Airport Operations Ltd, Navigation House, Airport Way, Luton, Beds, LU2 9LY in conjunction with Planning Division, Department of Environment & Regeneration, Luton Borough Council, Town Hall, Luton LU1 2BQ

LUTON BOROUGH COUNCIL

LONDON LUTON AIRPORT

ANNEX E - AIRPORT ANNUAL MONITORING REPORT 2014

Annual Monitoring Report
2014

London
Luton
Airport

Contents

Foreword

London Luton Airport (LLA) experienced a record passenger year in 2014 with 10.5 million passengers using the Airport; an 8% increase year on year in passengers, with a 6% increase in the number of aircraft movements. The continued sustainable growth, demonstrated by the increase in passenger numbers above that of aircraft movements, is testament to the modern and efficient fleet used by the airlines flying from LLA.

In June 2014 planning consent for the future development of London Luton Airport was granted. This will see capacity at LLA grow from 12 million to 18 million passengers by 2026. Integral to the grant of consent are extensive planning conditions set by Luton Borough Council regarding the control of noise. In 2015 a Noise Control Scheme will be published which will include information on how London Luton Airport intends to meet the requirements of these planning conditions. This will include plans to introduce a noise insulation scheme, penalties for aircraft that are found to be flying off-track, and a lowering of both the daytime and night-time noise violation limits.

LLA is proud of its noise management record, developed through active engagement with the London Luton Airport Consultative Committee (LLACC), local community groups, airlines, other operators and NATS our air traffic control provider. Unlike many major UK airports, the majority of London Luton's noise policies and interventions have been developed voluntarily, demonstrating commitment to our local communities.

LLA is an industry leader in noise management and we are continuously looking at new ways to mitigate the impact of aircraft noise on the local community.

In 2015 we anticipate a new navigation technology (RNAV1) will be operational on one of the Airport's main departure routes to ensure aircraft stay on a more tightly defined flight path, designed to avoid populated areas as far as possible.

By listening to local people, I believe we continue to find an appropriate balance between the social, economic and environmental realities of our operations.

[redacted]

Neil Thompson
Operations Director

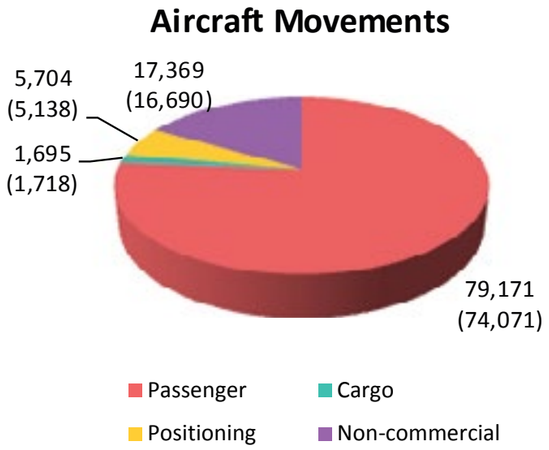
Air Traffic Data

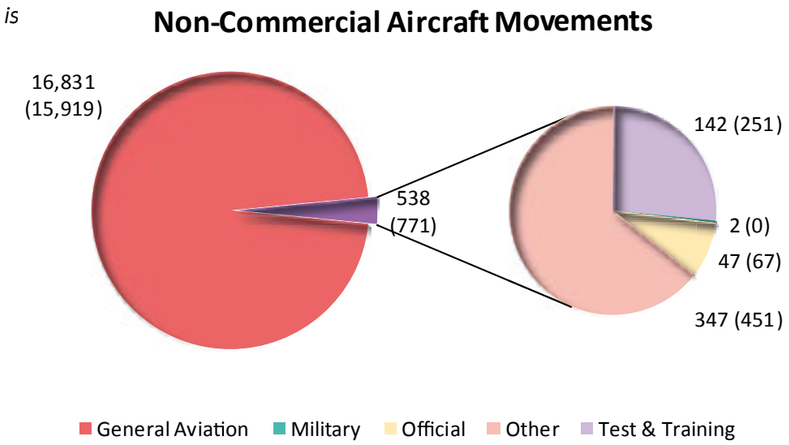
Aircraft movements

LLA handled a total of 103,939 aircraft movements during 2014, an increase of just over 6% compared to 2013. An aircraft movement is the take-off or landing of any aircraft from the Airport.

The majority of these aircraft movements consisted of 79,171 passenger flights, including commercial flights by executive aircraft (compared with 74,071 in 2013). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2013 data is shown in the brackets.

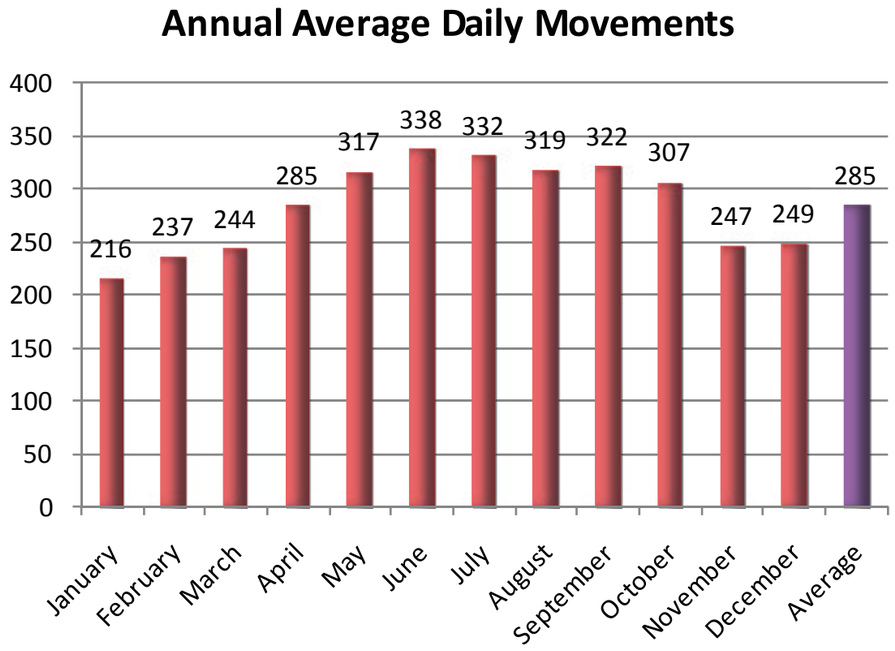




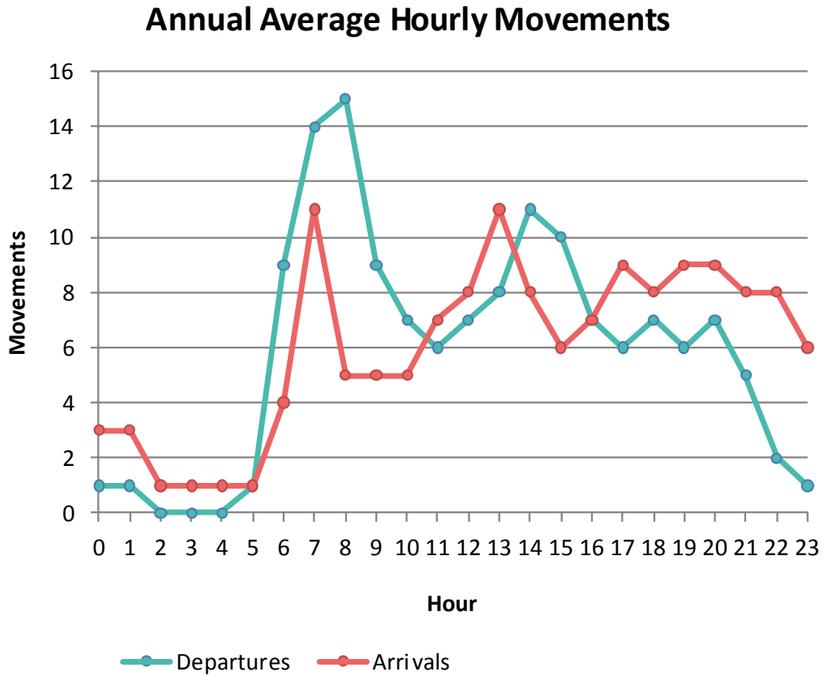
Movement Classification

Commercial – operating for hire or reward and includes cargo, passenger and positioning flights
Non-Commercial – not operating for hire and reward
Cargo – aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories
General Aviation – private aircraft, helicopters and business jets not operating for hire or reward
Passenger – commercial passenger flights, including executive aircraft
Positioning – typically empty flights to/from other airports
Military – flights on military business
Official – flights solely for official purposes by British or foreign civil government departments
Other – other non-commercial movements, e.g. a departing aircraft that has made an unscheduled return to base
Test & Training – training flights involving aircraft and also flights following or during aircraft maintenance

The graph below illustrates that the busiest time of year is May - October, with over 300 flights per day. **Our busiest day of the year was on May 23rd with 401 aircraft movements.** On the contrary, winter months are the quietest period of the year with less than 250 flights per day. On average there were 285 movements per 24 hours (in comparison with 267 in 2013).



The busiest time on average during 2014 for departing aircraft was 07:00-08:00 hrs, with another peak between 14:00-15:00. The average busiest time for arrivals was 07:00-08:00 and 13.00-14.00 hrs. The graph also highlights a low level of average movements during the hours of 00:00-05:00 hrs.



Passenger data

Scheduled	Charter	Totals
•**10,041,214** passengers •just under 9% increase compared with 2013 •**144** average passengers per flight	•**458,925** passengers •just under 3% decrease compared with 2013 •**175** average passengers per flight	•**10,500,139** passengers •8% increase compared with 2013 •Total **145** average passengers per flights

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 10,500,139 passengers were handled at LLA during 2014, 10,041,214 on scheduled flights (96%) and 458,925 on charter flights (4%). This represents an increase in passengers of 8% compared with 2013.

Domestic	EU	Non-EU	Totals
•**942,914** passengers •just under 5% decrease compared with 2013	•**6,806,742** passengers •just under 8% increase compared with 2013	•**2,750,483** passengers •just under 15% increase compared with 2013	•**10,500,139** passengers •8% increase compared with 2013

Cargo

Cargo operations represent 2% of all air transport movements at London Luton Airport. Night movements accounted for 62% of total cargo movements, relating primarily to postal flights or intra-European express delivery services moving time sensitive and perishable freight such as fresh food, medication and urgently needed technical equipment vital to supporting and sustaining economic growth. The flights carrying more general, less time-sensitive cargo already operate outside of the night-time period. This would include Formula 1 cars, live animals, clothing, machine parts and more.

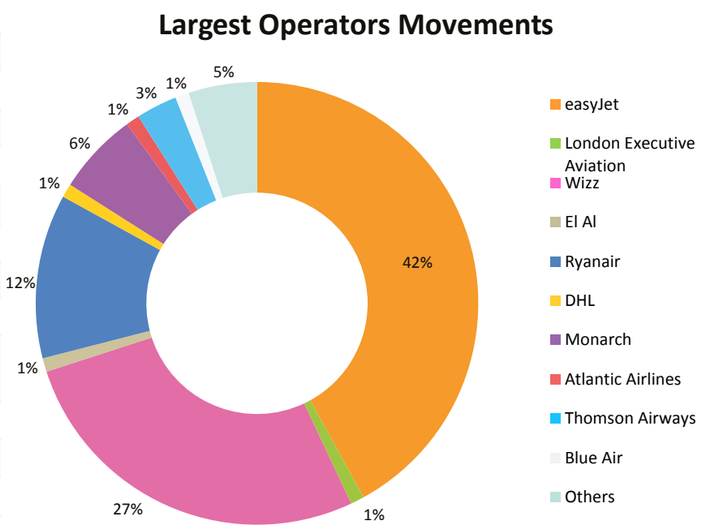
Operator	Movements			Tonnes
	Day Movements	Night Movements	Total	Total
2014	709	1,167	1,876	27,500
2013	775	1,153	1,928	29,092
2013-2014 difference	-9%	+1%	-3%	-5%

N.B. The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because a proportion of cargo tonnage is carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in the Aircraft Movements piechart which shows dedicated cargo movements.

Airlines

London Luton Airport works very closely with its airline partners. The table below provides the movement statistics by the 10 largest operators.

Operator	Movements
easyJet	32,630
Wizz	20,644
Ryanair	8,973
Monarch	4,837
Thomson Airways	2,240
Blue Air	1,020
DHL	908
El Al	828
London Executive Aviation	547
Atlantic Airlines	485
Others	3,649
TOTAL	**76,761**



N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.

Movements by aircraft type

	Aircraft Type	Movements	% of Total movements
Passenger Aircraft	Airbus A320 & A320 sharklets[1] (easyJet, Wizz Air, Monarch)	31,620	30.4%
	Airbus A319 (easyJet)	25,120	24.2%
	Boeing B737-800 winglets[1] (Ryanair, Monarch, Thomson, El Al)	11,458	11.0%
	Airbus A321 & A321 sharklets (Monarch)	2,562	2.5%
	Boeing B737-400 (Blue Air)	992	1.0%
	Boeing B757 & B767 family (Monarch, Thomson, El Al)	919	1.0%
	MCD Douglas MD-82/83/87 (Blue Air)	20	0.0%
	Other Passenger Aircraft	414	0.4%
Cargo	Airbus A300-600 (A306) (DHL, MNG Cargo)	1,138	1.0%
	BAe ATP (DHL, Atlantic Airlines)	576	0.6%
	Boeing B737-300 & B737-400 (DHL)	198	0.0%
	Airbus A330-200 (A332) (MNG)	46	0.0%
	Other Cargo Aircraft	77	0.1%
General Aviation	Gulfstream 5 and 500 series GLF5	2,793	3.0%
	Canadair Global Express GLEX	2,518	2.4%
	Cessna Citation Excel C56X	2,498	2.4%
	Canadair Challenger CL60	1,933	2.0%
	Gulfstream 4, 300 & 400 series GLF4	2,357	2.0%
	Embraer Legacy 600 E135	1,569	1.5%
	Canadair Challenger CL30	1,087	1.0%
	Cessna Citation Jet C525	1,233	1.0%
	Dassault Falcon FA7X	860	1.0%
	Other Private Aircraft	11,469	11.0%
	Helicopter	482	0.5%
	TOTAL	**103,939**	**100.0%**

The aim of this section is to provide the number of movements for a specific aircraft type. The groups are conditional, assuming that these are the typical aircraft types used for passengers, cargo and general aviation movements. As a result the number quoted here within this section will differ from those within the Aircraft Movements Section.

[1] - Winglets and sharklets are small aerodynamic surfaces mounted almost vertically at the wingtips. They significantly reduce the size of the wingtip vortex thus reducing induced drag, increasing lift-to-drag ratio and fuel efficiency of the aircraft. After 80's Airbus come up with a new name for winglets that designed specially for Airbus families and they called it sharklets. There is no difference between winglets and sharklets; the sharklet is just the another word for winglet.

Destinations

London Luton had the busiest year in its 76 year history with notable growth from Wizz Air, Monarch and El Al in particular, plus the addition of new Turkish carrier Atlasjet.

The following diagram shows the destinations flown / on sale to and from London Luton in 2014. Our airlines fly to 105 destinations across 34 different countries.
Top 5 destinations by aircraft movements are:

1. Amsterdam
2. Budapest
3. Geneva
4. Dublin
5. Edinburgh

More information about our destinations can be found on the airport's website:
http://www.london-luton.co.uk/en/

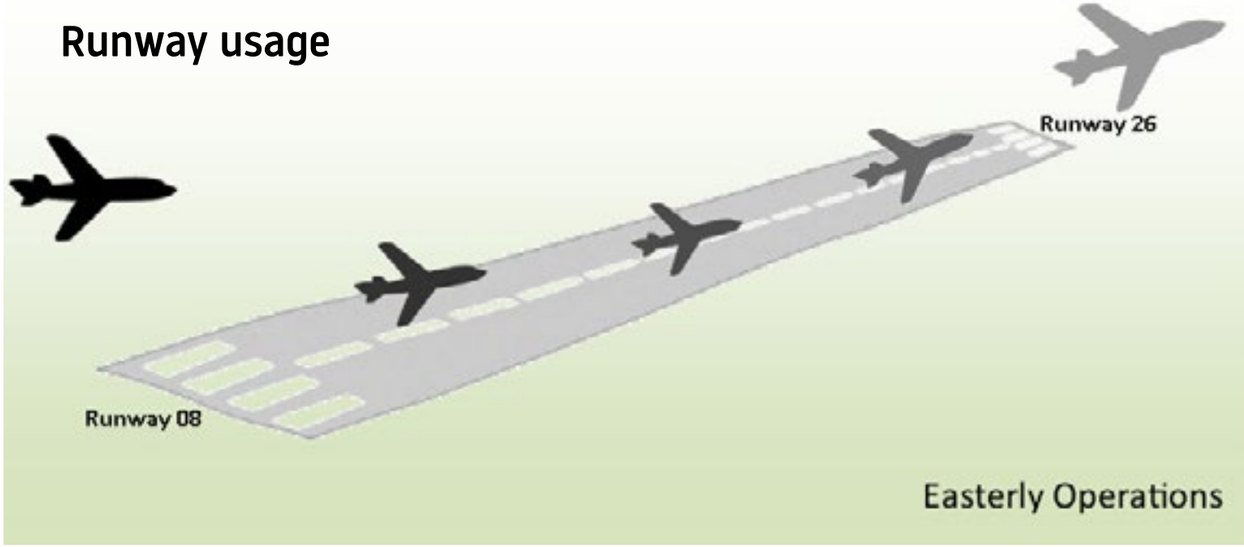
New Routes 2014

Destination	Launch	Airline
Basle, Switzerland	7-Nov-14	easyJet
Munich, Germany	3-Nov-14	easyJet
Copenhagen, Denmark	3-Nov-14	easyJet
Lyons, France	3-Nov-14	easyJet
Naples, Italy	29-Oct-14	easyJet
Poprad, Slovakia	28-Oct-14	Wizz Air
Szczecin, Poland	27-Oct-14	Wizz Air
Rome, Italy	26-Oct-14	easyJet
Sibiu, Romania	14-Jun-14	Wizz Air
Antalya, Turkey	2-May-14	Monarch
Istanbul, Turkey	2-May-14	Atlasjet
Naples, Italy	2-May-14	Monarch
Skiathos, Italy	16-May-14	Thomson
Catania, Italy	30-Mar-14	easyJet
Venice, Italy	13-Feb-14	easyJet

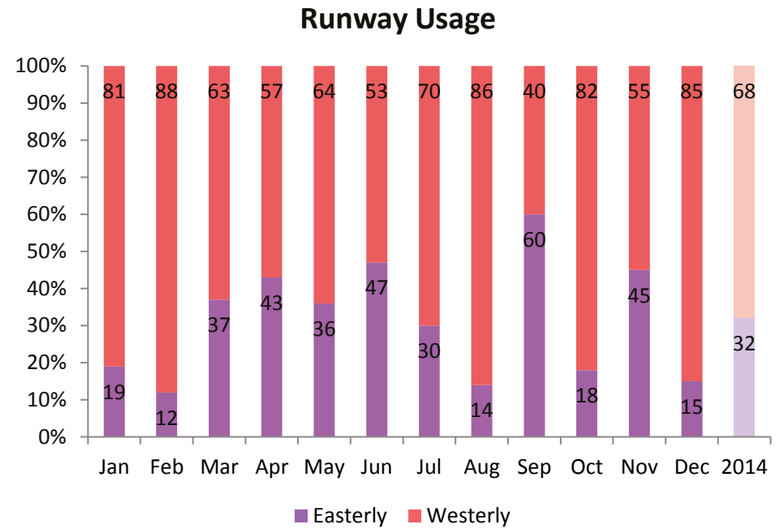
Routes Ending 2014

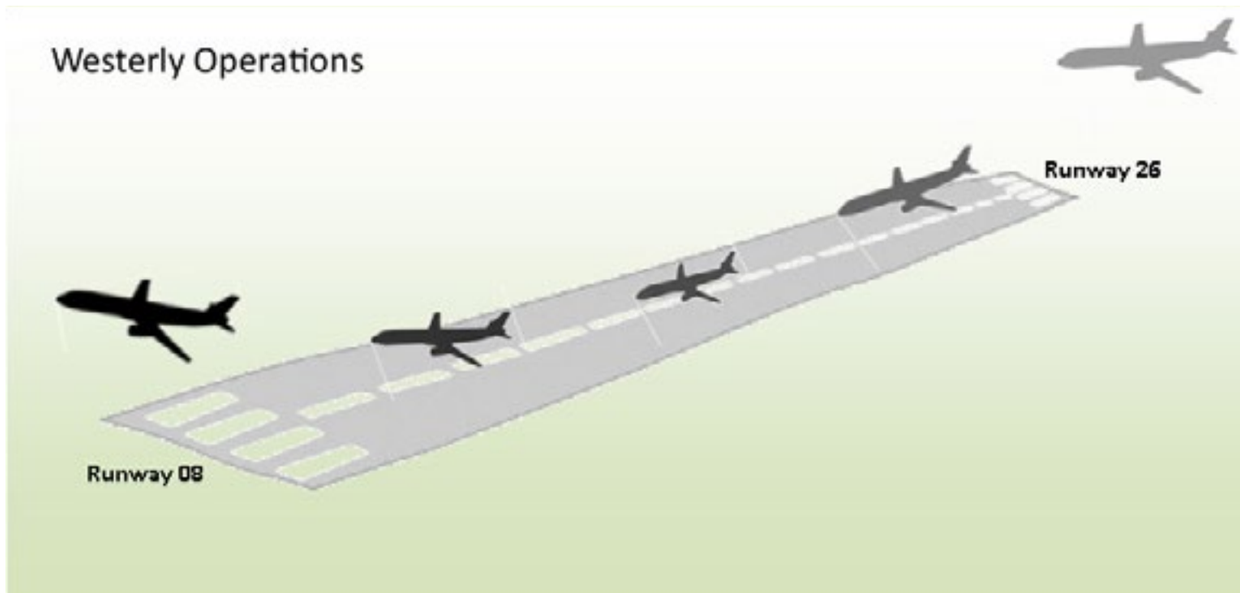
Destination	Launch	Airline
Istanbul, Turkey	29-Mar-14	easyJet
Trapani, Italy	1-May-14	Ryanair

Runway usage



Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. A monthly breakdown is shown, highlighting higher than average levels of easterly operations over the spring period and in September 2014, in contrast to prolonged and sustained spells of westerly operations over the winter months, as well as in August 2014.





The runway split during 2014 was 32% easterly and 68% westerly (compared to 36% / 64% in 2013). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 31% easterly and 69% westerly.

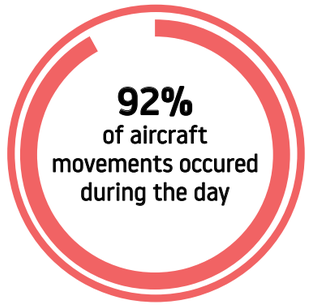
Year	Easterly	Westerly
2014	**32%**	**68%**
2013	36%	64%
2012	27%	73%
2011	28%	72%
2010	36%	64%
Average	**31%**	**69%**

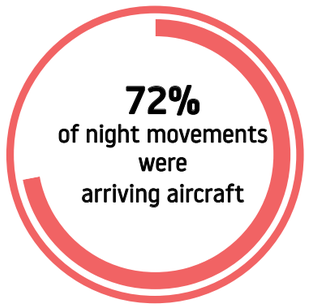
Day/Night ratio of movements

There were 8,613 night movements during 2014 (compared to 7,557 for 2013, an increase of 14%), an average 24 movements per night (compared to 21 last year).

Arriving aircraft accounted for 72% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the Airport at night, between 23:00 hrs and midnight.

The average ratio of total aircraft movements during 2014 was 92% day / 8% night (in line with 92% day / 8% night in 2013).





	Day	Night
Departures	49,547	2,419
Arrivals	45,779	6,194
TOTAL	**95,326**	**8,613**

The number of night movements quoted within this section will differ from those within the Noise Contour Section as the 8 hour Leq contour calculation period extends between 23:00 - 07:00, 7 days a week. The figures quoted here cover the night period, as defined in the Night Noise Policy for noise violation purposes, 23:00 until 06:00 Monday to Saturday and until 07:00 on Sunday.

Departing Aircraft

Aircraft departing London Luton Airport are required to follow specific departure flight paths, or Noise Preferential Routes (NPRs). These NPRs were designed to avoid flying over built-up areas wherever possible and there are 6 NPRs at London Luton, three at each end of the runway.

Our air traffic control service provider (NATS) removed the Dover standard instrument departure (SID) route on 29th May 2014 and replaced this with the existing Detling SID to enable more accurate fuel planning. The Clacton SID was renamed Match on 18th September 2014. The three NPRs at each end of the runway are now – Compton, Olney and Detling/Match. Associated with each NPR is a swathe of air space extending 1.5km each side of the NPR centre line, within which aircraft concentrate and are considered to be flying on track. Aircraft must follow the NPR controls applicable to the runway in use at that time.

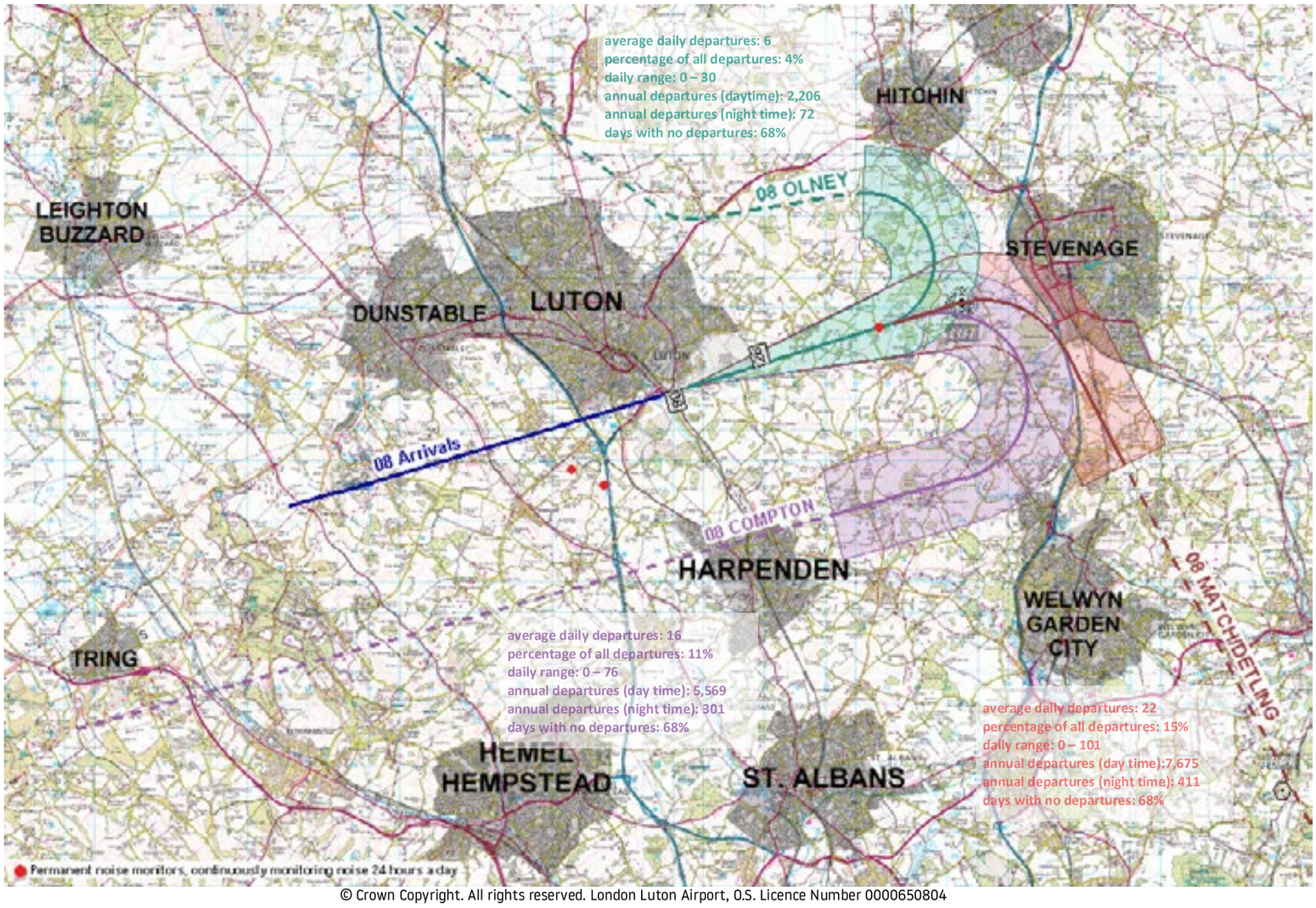
When departing on Runway 08, towards the north east (e.g. Stevenage area) aircraft must stay within the NPR corridor until at least 3000ft altitude (or 4000ft at night). The same rules apply when departing on Runway 26, towards the south west (e.g. Hemel Hempstead).

Once aircraft have cleared the designated NPR zone air traffic control (ATC) can instruct the pilots to fly a more direct heading towards their destination. This is known as vectoring. However ATC may direct aircraft off the NPR at any time if this is required for safe separation from other aircraft or for other safety issues (such as avoiding adverse weather).

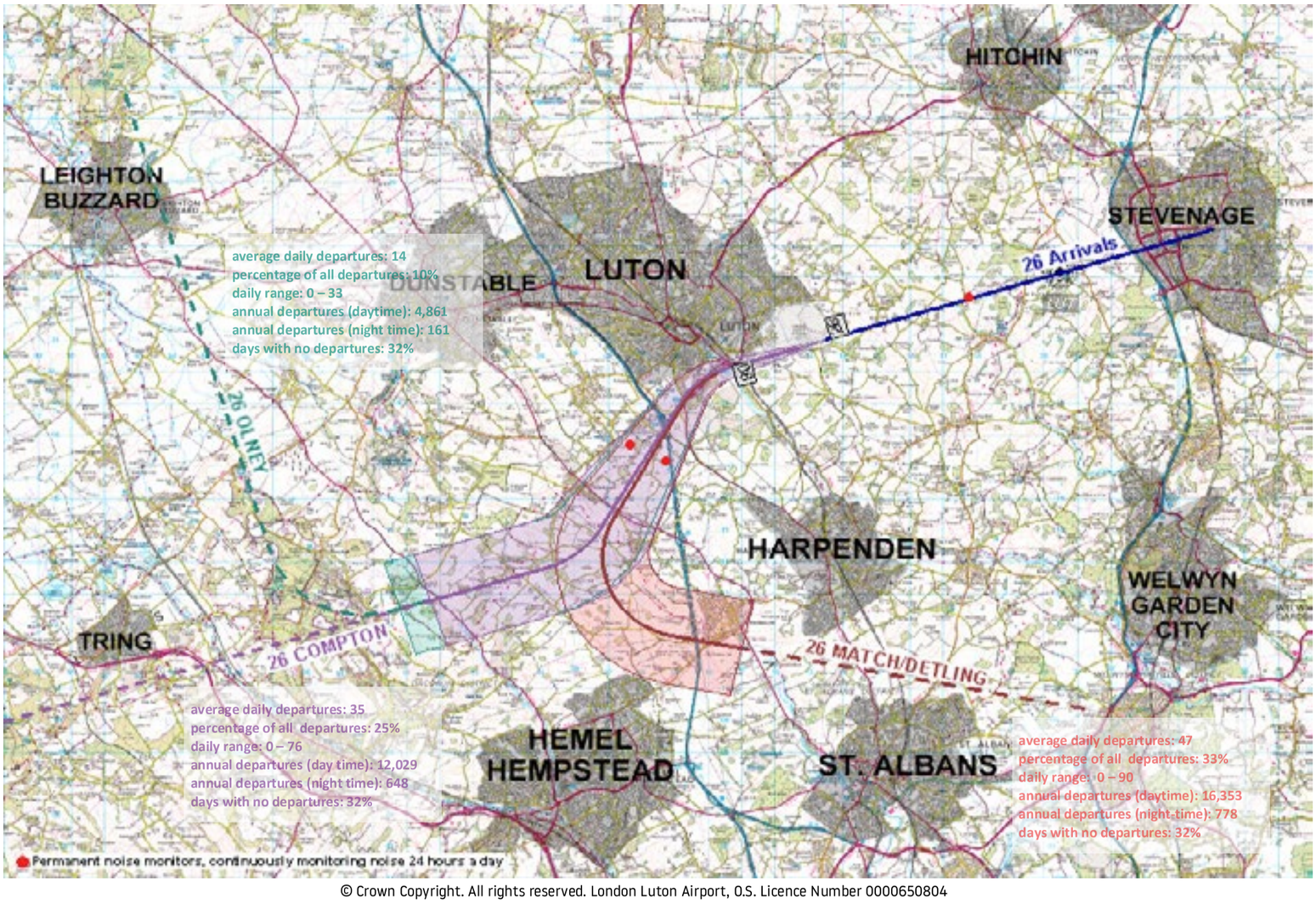
There were 245 helicopter departures during 2014, on average less than 1 movement per day.

Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton Airport with detailed information about each departure route.

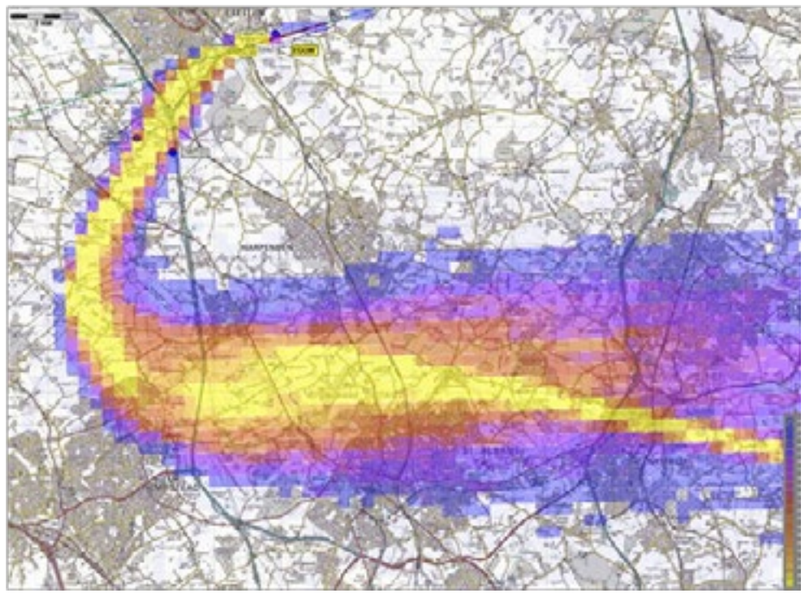
Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



Area Navigation (RNAV) technology



Current aircraft dispersal

Area Navigation (RNAV) is a new navigation technology that enables aircraft to fly a route more precisely.

In 2014 the Airport launched an airspace change consultation on the introduction of RNAV along the Runway 26 Brookmans Park departure route. This followed successful trials in 2013. The purpose of this change is to enable aircraft to more accurately fly the departure route, drawing aircraft away from densely populated areas that are currently overflown, thereby reducing noise disturbance. The proposal also slightly modifies the route, again to reduce noise disturbance.

The proposed route passes between Markyate and Flamstead, Redbourn and Hemel Hempstead, as well as St. Albans and Harpenden but still remains within the current NPR corridor. The plot densities shown illustrate the current dispersal of aircraft along this route, and the dispersal seen during the RNAV trials.

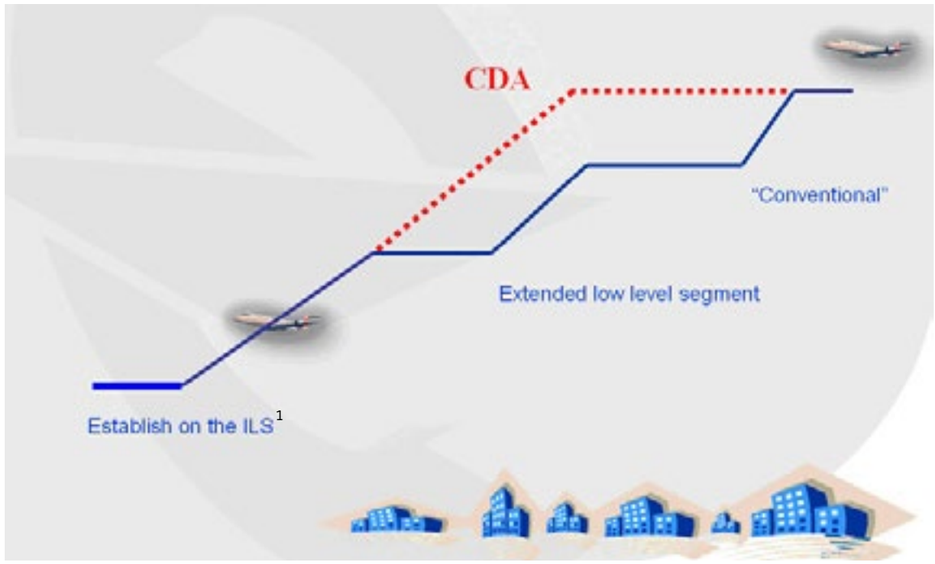
The consultation took place over a 13 week period from 10th April 2014 until 9th July 2014. Over 1,400 responses were received during the consultation, with 90% of consultees supporting the adoption of RNAV.

An Airspace Change Proposal was therefore submitted to the CAA, and the implementation of the RNAV procedures is planned for August 2015.

Aircraft dispersal during the RNAV trials

Arriving Aircraft

Although there are no set routes for arriving aircraft there are long established procedures to mitigate the disturbance that can be caused on approach to the airfield. One of the most successful measures is a noise mitigation procedure called Continuous Descent Approach.



The conventional approach involves descending in steps using engine thrust to level off. In a Continuous Descent Approach, or CDA, an aircraft stays higher for longer and reduces periods of prolonged level flight at lower altitudes. When it's near the Airport the pilot, with engines idling, continuously descends straight to the runway where he completes the landing in the traditional manner. With CDA planes burn less fuel and therefore produce less emissions, but most importantly it reduces the noise by avoiding the engine thrust required for level flight.

The table compares the level of CDA performance by our main airline operators.

	Total Arrivals	CDA Compliance
Ryanair	4,500	98%
Thomson Airways	1,225	94%
easyJet	16,547	94%
Monarch	2,490	91%
Wizz Air	10,333	91%
London Executive Aviation	1,374	89%
Atlasjet	233	82%
Atlantic Airlines	283	88%
Blue Air	510	87%
European Air Transport	503	84%
Harrods Aviation	2,178	75%
NetJets	1,285	77%
Vista Jet	400	62%
El Al	417	71%
Others	9,695	91%
TOTAL	**51,973**	**88%**

[1] - An Instrument Landing System (ILS) is a ground-based instrument approach system that provides precision lateral and vertical guidance to an aircraft approaching and landing on a runway, using a combination of radio signals and, in many cases, high-intensity lighting arrays to enable a safe landing during instrument meteorological conditions (IMC).

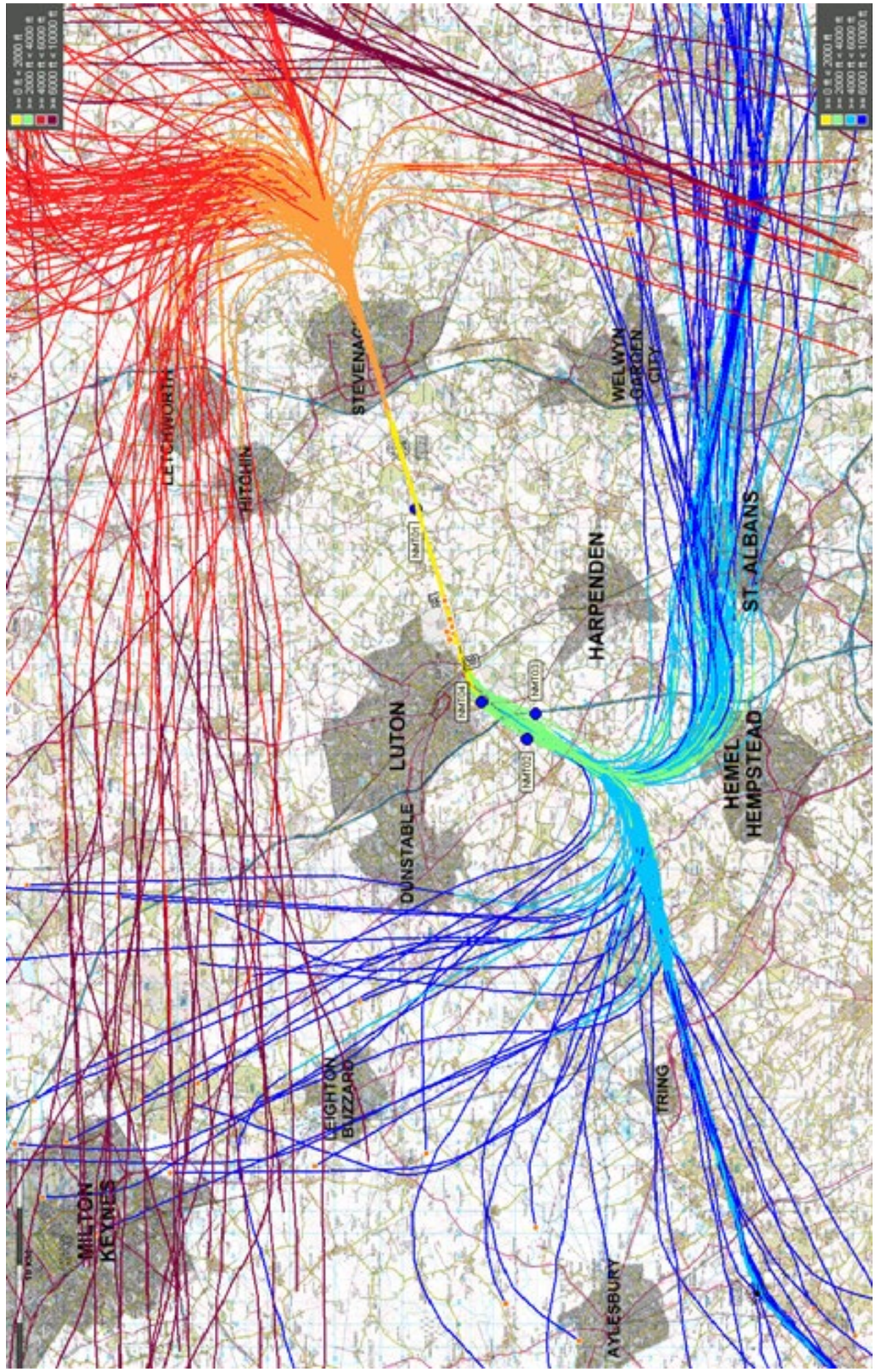
Departure and arrival flight tracks

Maps overleaf display typical 24 hour periods of both westerly and easterly operations, with arriving traffic in red and with departing aircraft tracks in blue. The colour coding from yellow to brown and from yellow to dark blue respresents different altitude bands up to 10,000ft above mean sea level.

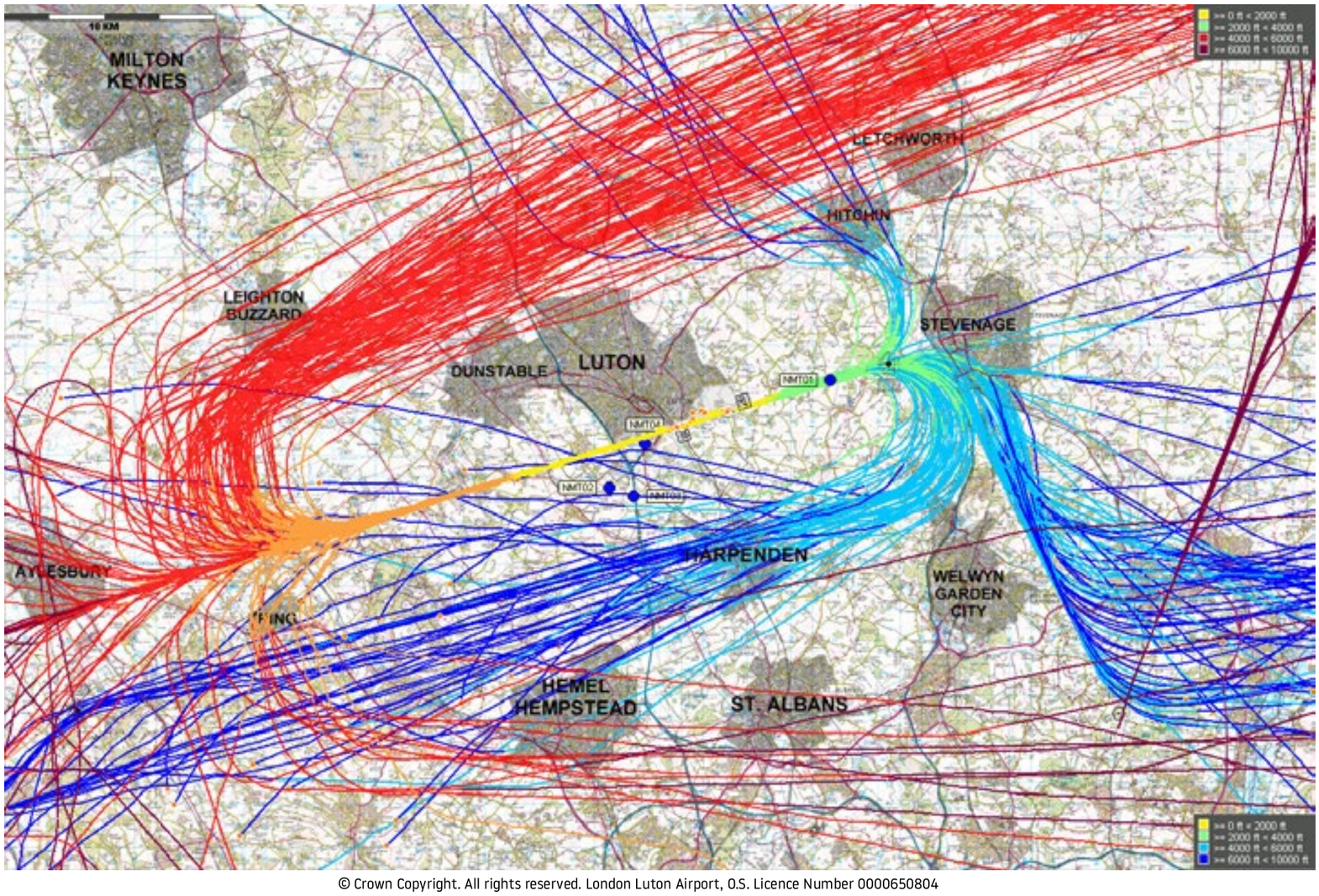
The last two maps display aircraft track density plots for the summer period 16th June - 15th September 2014. A track density plot is a map which displays the pattern of aircraft flight track passing over the region around the Airport during a specific period. The system analyses the number of flights passing over each grid element of an array. The colour coding from purple to red represents the range 1 to over 147 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element was less than 1 flight. The red areas represent locations where operations are more densely concentrated.

It should be noted that London Luton Airport's aircraft movements integrate with traffic travelling to and from other airports in the region, as the south east area in the UK is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton Airport and overflights from other airports have been omitted for clarity.

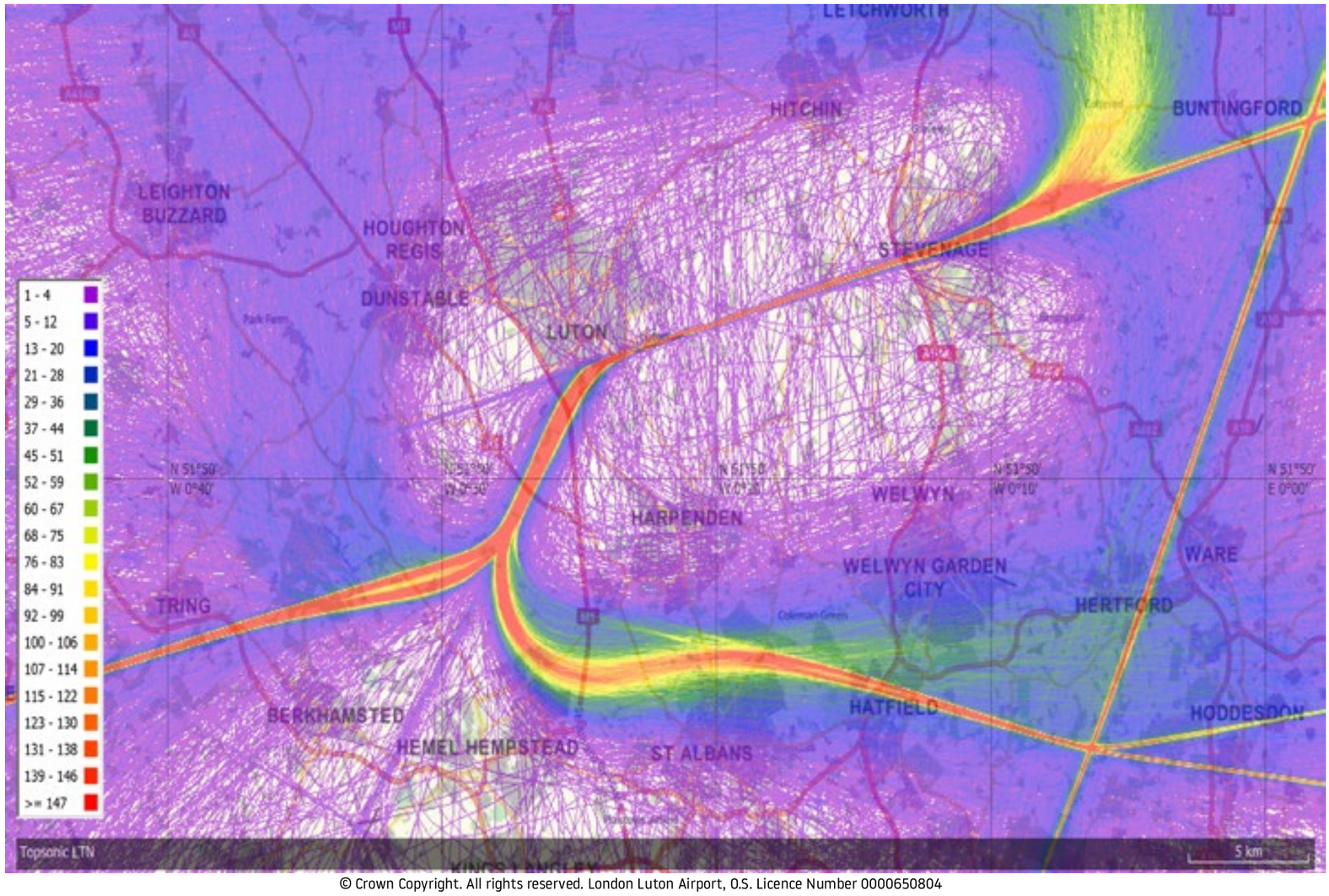
Westerly (26) Flight Routes (24 hour period)

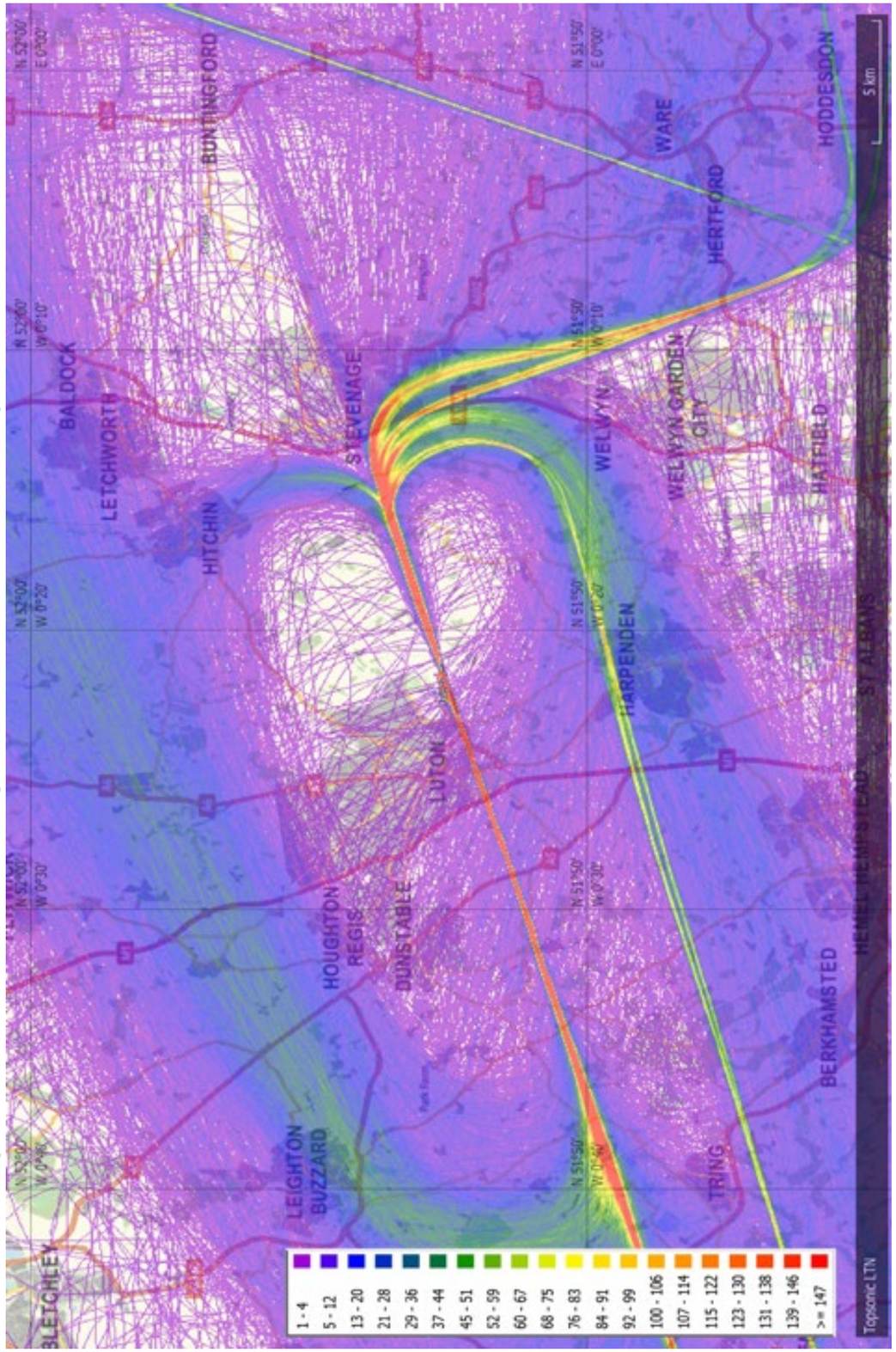


Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2014 - westerly (26)



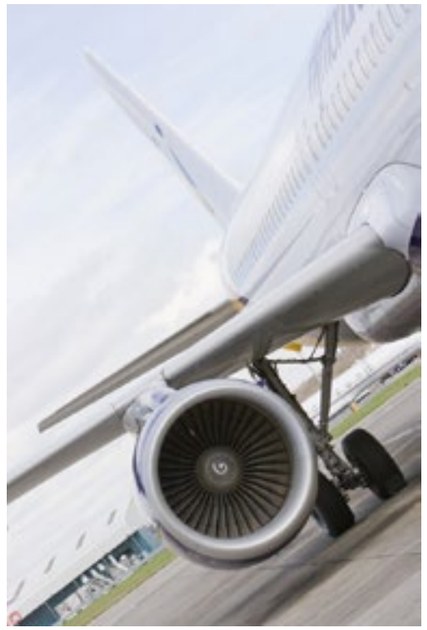


Plot Density - 16th June - 15th September 2014 - Easterly (08)

Aircraft Noise

Noise is generally defined as unwanted sound. Although it is recognised that noise perception is very subjective, there are a number of internationally recognised terms to describe and measure aircraft noise. Most airport related noise is created by aircraft approaching, taking-off and taxiing to and from the runway. The management and control of noise continues to be a major element of the Airport's policy to constantly seek to minimise and mitigate our environmental impact.

How is noise monitored?



People who live close to airports or under flight paths can often feel strongly about the disturbance to their lives from noise. Effects of noise include general distraction, speech interference and sleep disturbance which can lead to annoyance and complaints.

At LLA monitoring is provided by the Topsonic Aircraft Noise and Track Monitoring System. This system is designed to monitor air traffic within a radius around the Airport (set at around 25 miles), and generally up to an altitude of 12,000ft. It downloads noise data from three fixed noise monitors located 6.5km from the aircraft start of roll, at either end of the runway within the neighbouring communities. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area. The Topsonic System was operational for 100% of the time during 2014.

New features and system enhancements continue to improve the functionality and capabilities available to the Airport Environment Office.

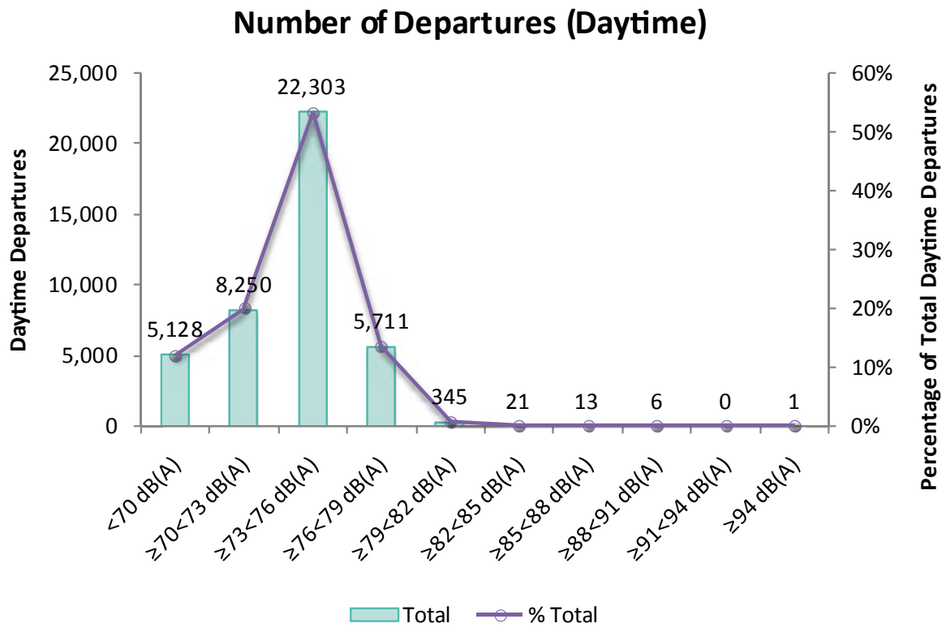
TraVis,an online flight-tracking tool enables the general public to see for themselves the actual flown tracks of LLA aircraft departures and arrivals. This can be viewed online at the following link on the airport website.

http://www.london-luton.co.uk/en/flighttracking/

Noise violation levels

In 2014 LLA operated a noise violation policy whereby a surcharge of between 300% and 600% of the combined Landing and Navigation Service Charge is applied in respect of any landing prior to a take-off on which noise violations levels are exceeded. These violation limits encourage airlines to operate modern and quieter aircraft types. The noise violation level during the 2014 night period was 82 dB(A), and 94 dB(A) during the day.

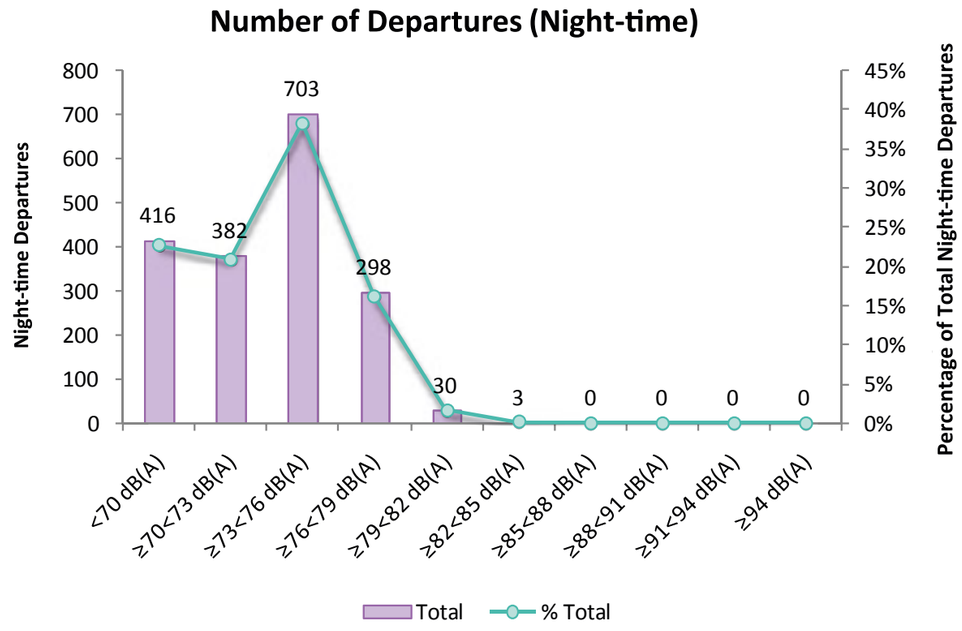
The following diagram identifies maximum daytime noise levels recorded by departing aircraft at the fixed noise monitoring terminals between 06:00 and 23:00 Monday to Saturday and from 07:00 until 23:00 on Sunday.



During the daytime 99% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 85% registering below 76dB(A) and 32% of correlated daytime departures registering below 73dB(A). Throughout the year 386 correlated daytime departures (1%) registered maximum noise levels above 79dB(A), and there was only 1 daytime noise violation.

The diagram below represents maximum night-time noise levels recorded by departing aircraft at the fixed noise monitoring terminals between the hours 23:00 and 06:00 local time, Monday to Saturday and from 23:00 until 07:00 on Sunday.

During the night 98% of correlated departures recorded maximum noise levels below 79dB(A), with 82% below 76dB(A) and 44% of correlated night departures registering below 73dB(A). During the year 33 correlated night departures (2%) registered maximum noise levels above 79dB(A) with 3 departures exceeding the night noise violation level of 82dB(A).



Noise violations during 2014

There was one violation of the daytime noise level in 2014, and a total of three violations of the 82dB(A) night noise violation level (details below), compared to four night noise violations in 2013.

	Date / Time (Local)	Aircraft Type	Noise Level	Penalty
Daytime	09/07/2014 09:09 hrs	GLF3 (Executive Jet)	94.9 dB(A)	400% of runway charge
Night-time	01/05/2014 02:18 hrs	MD83 (Special Charter)	82.6 dB(A)	300% of runway charge
	01/05/2014 02:30 hrs	MD83 (Special Charter)	84.4 dB(A)	300% of runway charge
	12/11/2014 23:47 hrs	FA7X (Executive Jet)	82.5 dB(A)	300% of runway charge

All fines are passed to the London Luton Airport Community Trust Fund, further details of which can be found at
http://www.london-lutoninthecommunity.co.uk/content/1/3/community-trust-fund.html

Noise Contours

Since 1989 the preferred measure of aircraft noise has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700-2300 for an average day between the 16th June and 15th September. In addition, London Luton Airport also produces contours for the 8 hour night period between 2300 and 0700 for an average summer night in terms of the LAeq, 8h indicator.

Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the Airport and also the departure routes flown. Changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, determined by the prevailing wind direction.

The noise contours for the Airport are produced using INM software (the Integrated Noise Model) version 7.0d, which is the method used by many other airports in the UK.

Annual noise contours summer 2014

Work has been completed on the production of the annual noise contours for summer 2014 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM version 7.0d.

$L_{Aeq, 16 hour}$ Daytime	Contour Area (km²)					
	1984	1999	2013	2014	Difference 2013-2014	2015 (forecast)
>72	1.63	1.5	0.8	0.9	+0.1	0.9
>69	2.80	2.5	1.3	1.4	+0.1	1.5
>66	4.86	4.4	2.3	2.7	+0.4	2.9
>63	9.10	7.3	4.8	5.5	+0.7	7.8
>60	17.18	11.8	8.4	9.3	+0.9	9.6
>57	**31.52**	**19.6**	**13.8**	**15.8**	**+2.0**	**16.5**

Considering the 57 dB LAeq, 16h daytime noise contour there is an increase in area of approximately 14% when comparing the 2014 contour with the 2013. This is largely due to the 8% increase in movement numbers. The daytime movements increased from 23,649 in 2013 to 25,616 in 2014.

The corresponding 2015 contour is forecast to grow by 4% compared to the 2014 contour, largely due to a forecast 5% increase in movement numbers.

$L_{Aeq, 8 hour}$ Night-time	Contour Area (km²)					
	1984	1999	2013	2014	Difference 2013-2014	2015 (forecast)
>72	0.79	1.1	0.4	0.4	0.0	0.4
>69	1.39	1.8	0.6	0.6	0.0	0.7
>66	2.42	3.0	0.9	1.0	+0.1	1.1
>63	4.01	5.2	1.5	1.7	+0.2	1.8
>60	7.06	8.3	2.9	3.4	+0.5	3.8
>57	13.05	13.2	5.7	6.5	+0.8	6.9
>54	24.48	21.6	9.8	11.3	+1.5	11.7
>51	44.92	36.0	17.2	20.0	+2.8	20.5
>48	**85.04**	**60.6**	**30.7**	**35.2**	**+4.5**	**36.6**

Considering the 48 dB LAeq, 8h night-time noise contour there is also an increase of approximately 15% when comparing the 2014 contour with 2013 contour. This is largely due to the 21% increase in movement numbers. The night-time movements increased from 3,711 to 4,490.

The corresponding 2015 night contour is forecast to grow by 4% compared to 2014, despite a decrease in movement numbers of 5%. This is because the number of departures at night, particularly those by passenger jets is forecast to increase in 2015, and departures contribute more per aircraft than arrivals to the contour area.

The 2014 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

Contour population counts

The population counts for this year were calculated using the CACI Ltd, 2013 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted.

$L_{Aeq, 16 hour}$ Daytime	2013		2014	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	3	6	4	14
>63	383	1,064	483	1,281
>60	1,156	3,164	1,307	3,552
>57	**2,975**	**7,128**	**2,905**	**7,290**

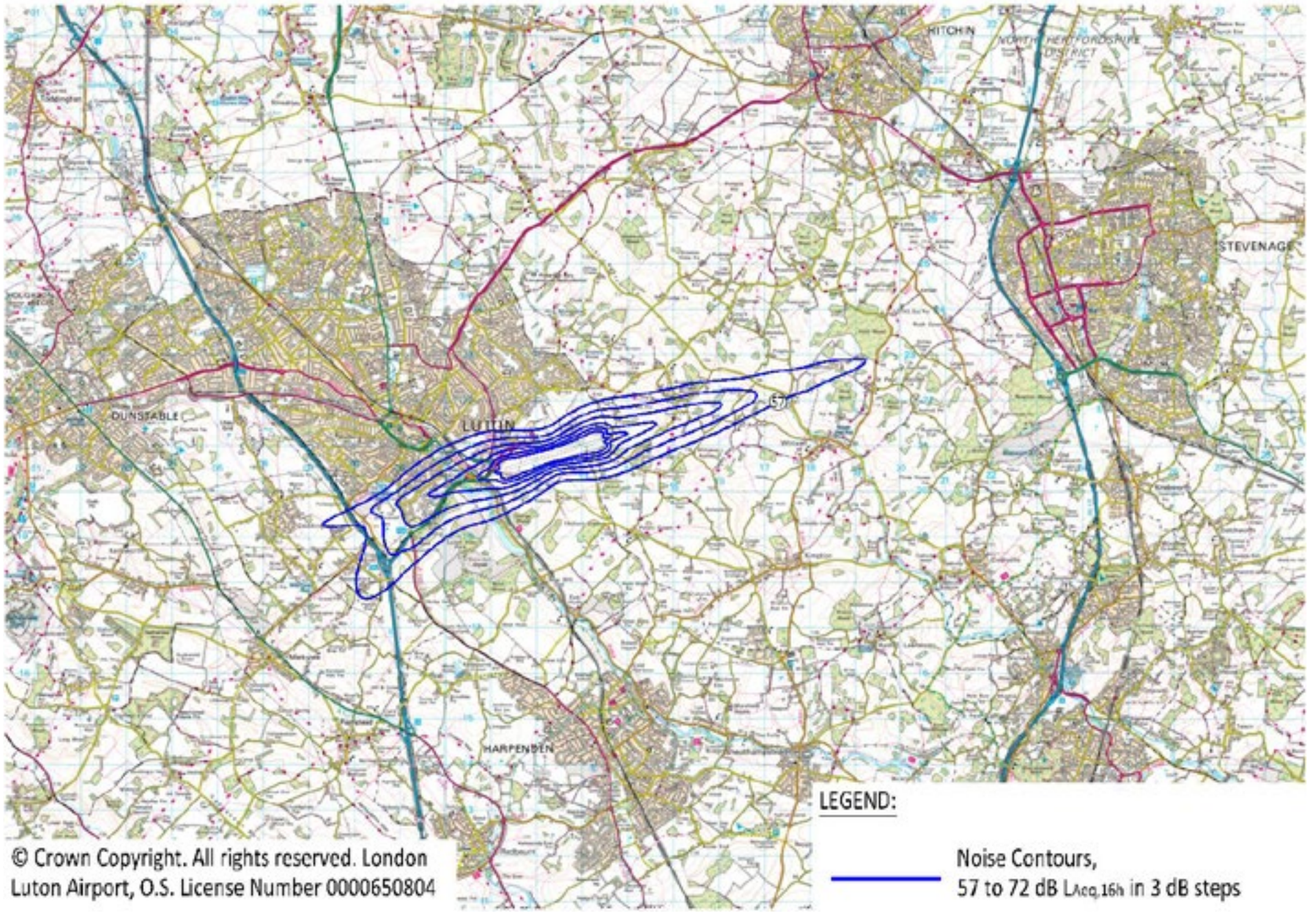
When looking at the daytime results there are generally increases in the number of dwellings and the population within the contours when comparing 2014 with 2013. For the 57 dB Laeq, 16h contour there is a small decrease of around 2% in the number of dwellings despite the contour being larger. The higher value contours show larger increases in line with the increase in contour area.

$L_{Aeq, 8 hour}$ Night-time	2013		2014	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	1	2	0	0
>60	10	27	136	389
>57	540	1,478	660	1,790
>54	1,619	4,377	1,624	4,442
>51	3,577	8,475	3,717	9,139
>48	**6,390**	**14,974**	**6,583**	**16,040**

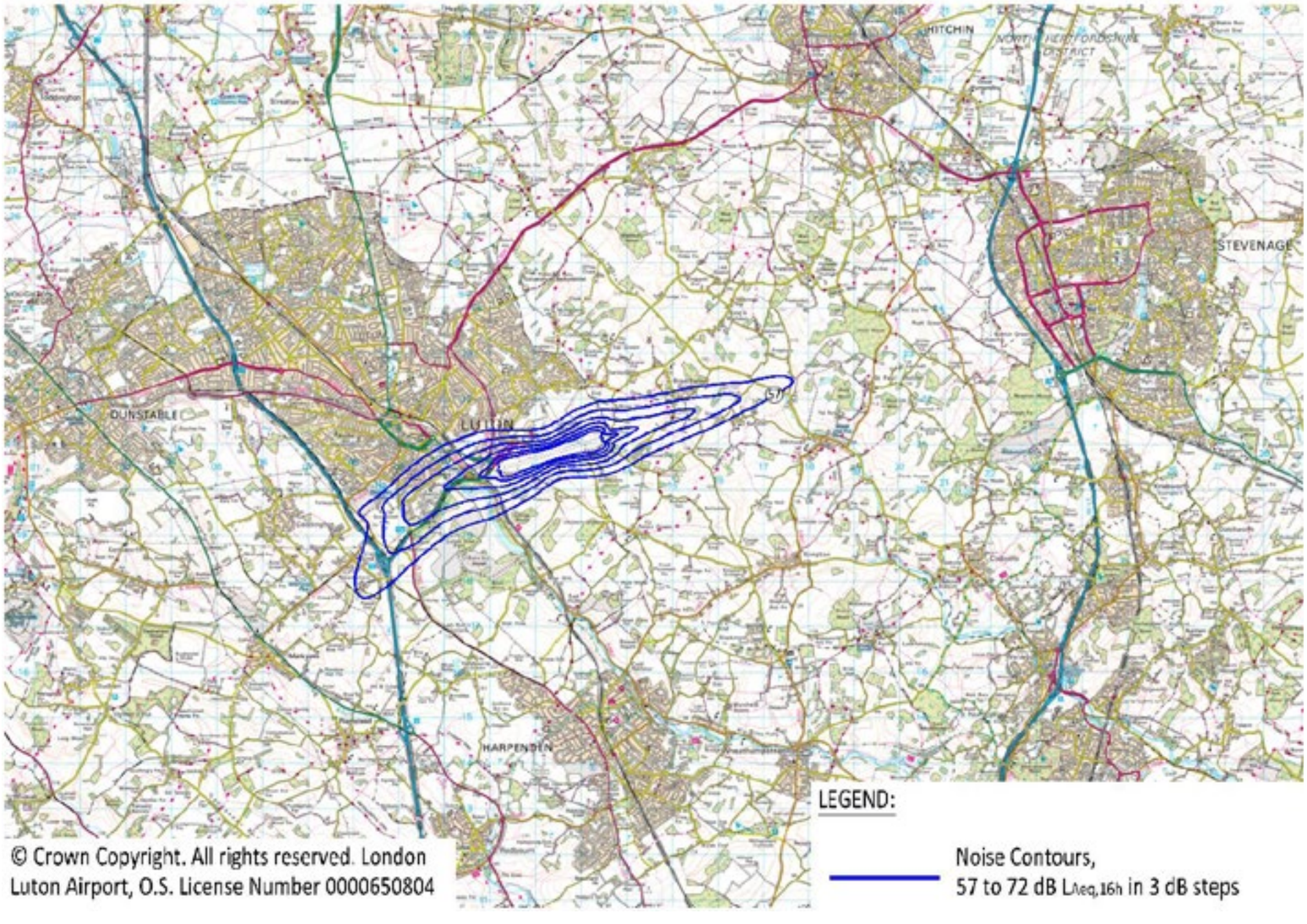
For the night-time contours there are increases in the numbers of dwellings and the population within the contours when comparing 2014 with 2013. For the 48 dB LAeq, 8h contour the increase is around 3% for the number of dwellings and around 7% for the population. This is mainly due to the increase in movements.

Please note in the above tables the results for households and resident populations are cumulative.

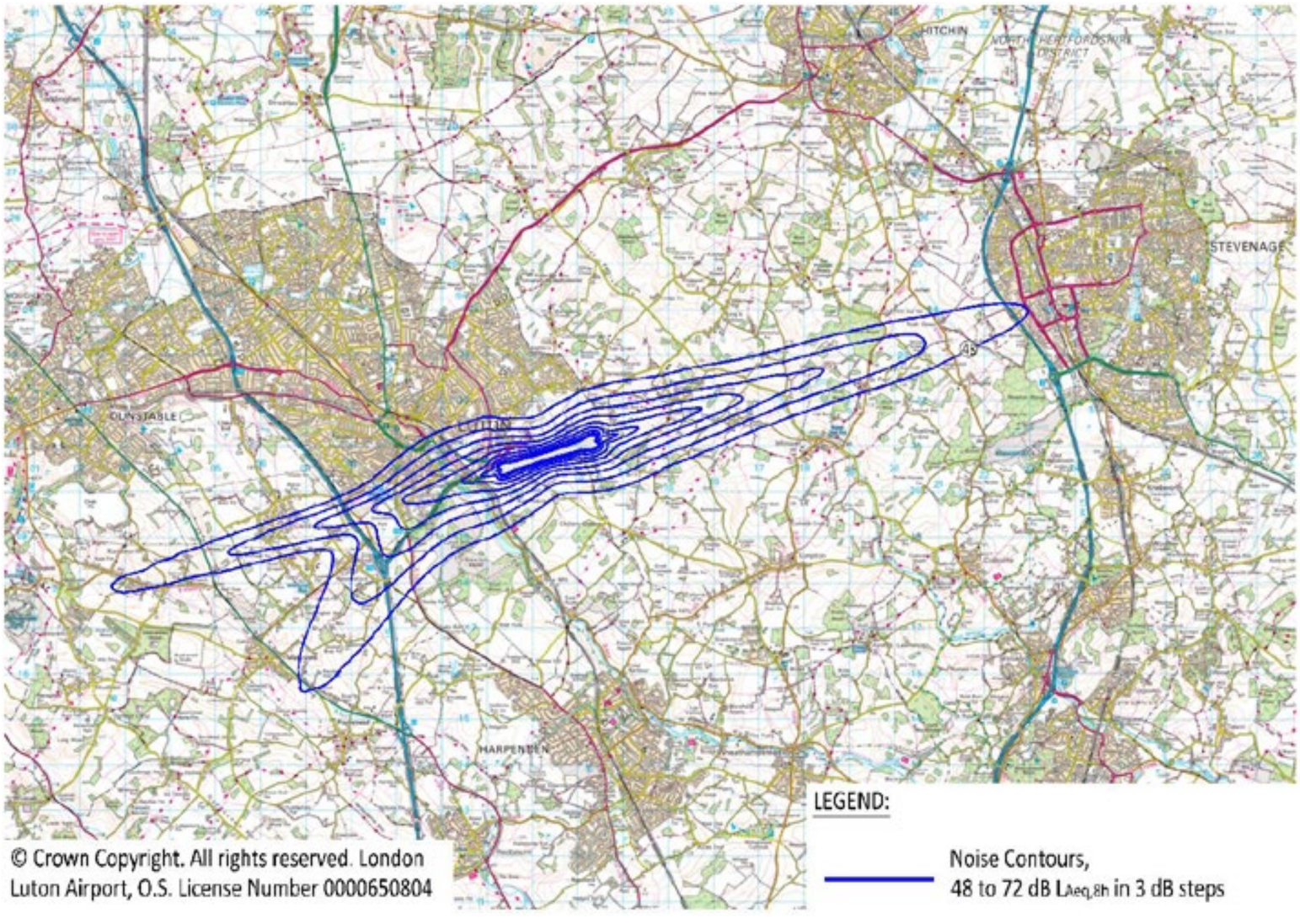
Annual Day Noise Contours Summer 2014



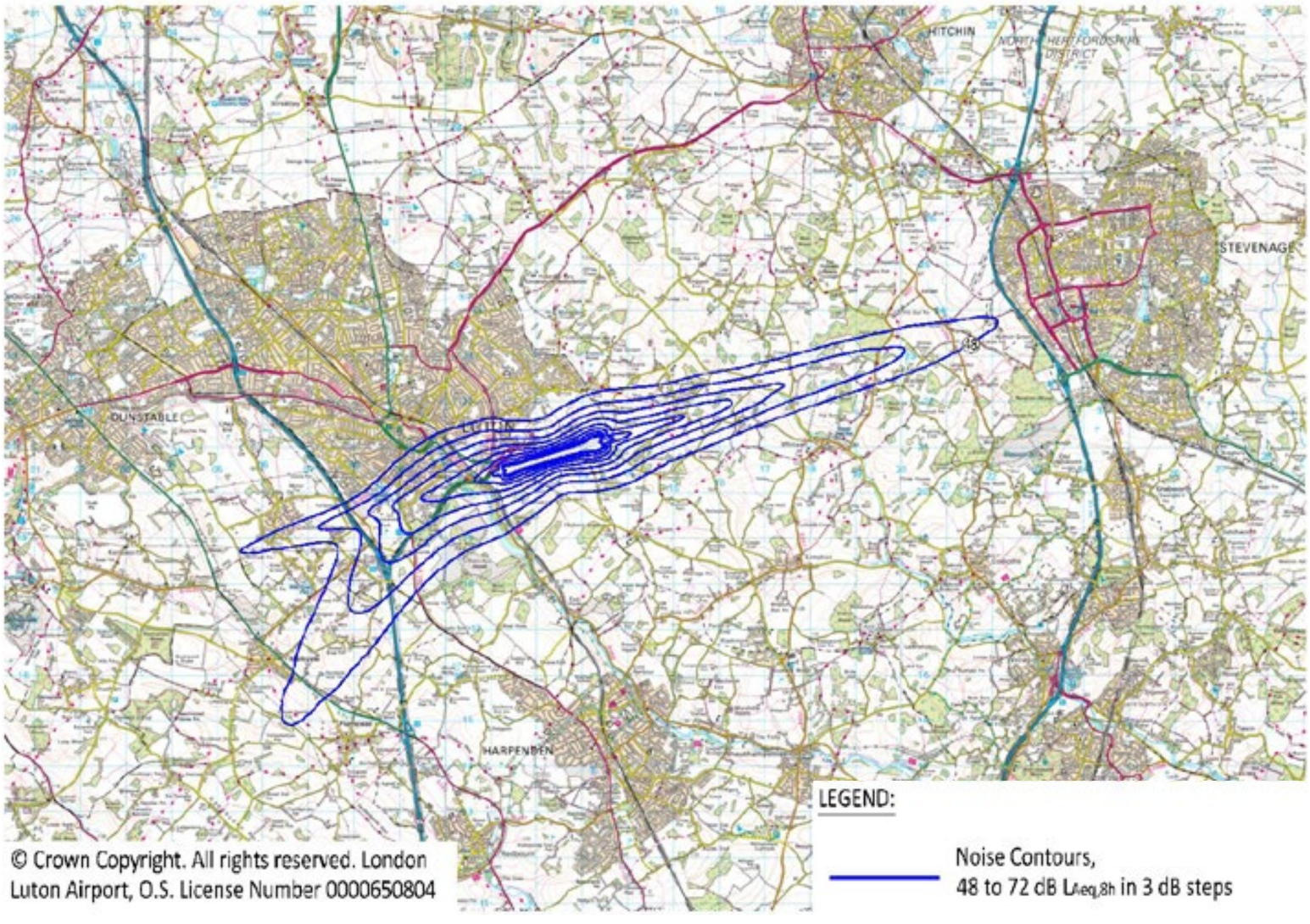
Annual Day Noise Contours Summer 2013



Annual Night Noise Contours Summer 2014



Annual Night Noise Contours Summer 2013



Annual noise contours 2014

Again using the latest INM software (version 7.0d) the annual Lden noise contours for 2014 have been produced in accordance with London Luton Airport's Noise Action Plan. The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2014, with a 10dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2014.

Annual Lden Noise Contour Results

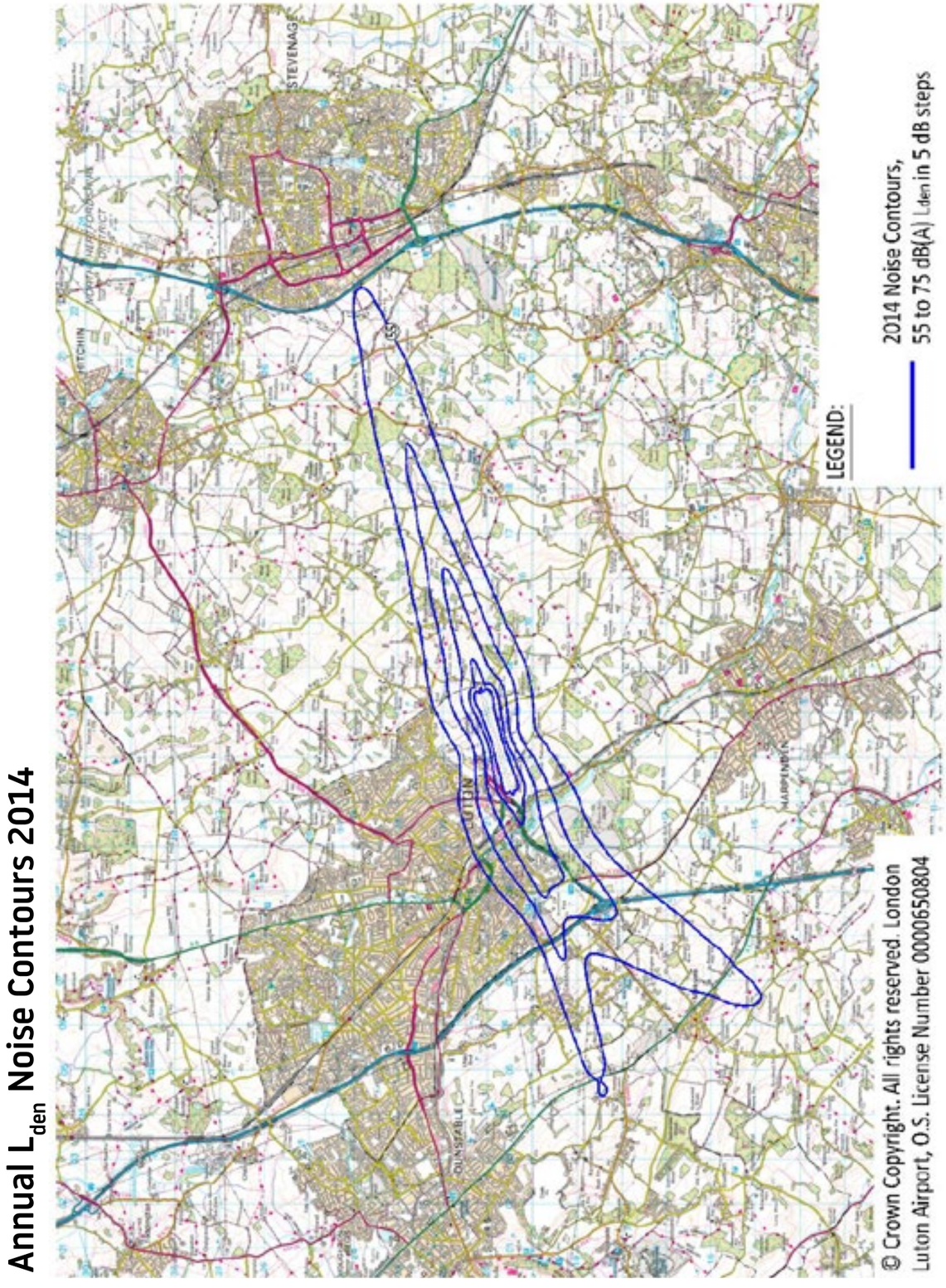
Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2013	2014	2013	2014	2013	2014
>75	0.7	0.7	0	0	0	0
>70	1.6	1.6	0	0	0	0
>65	5.0	5.3	1,100	1,100	450	400
>60	12.4	13.1	5,200	5,600	1,900	1,950
>55	**31.8**	**33.6**	**14,800**	**16,400**	**6,150**	**6,150**

Annual Lnight Noise Contour Results

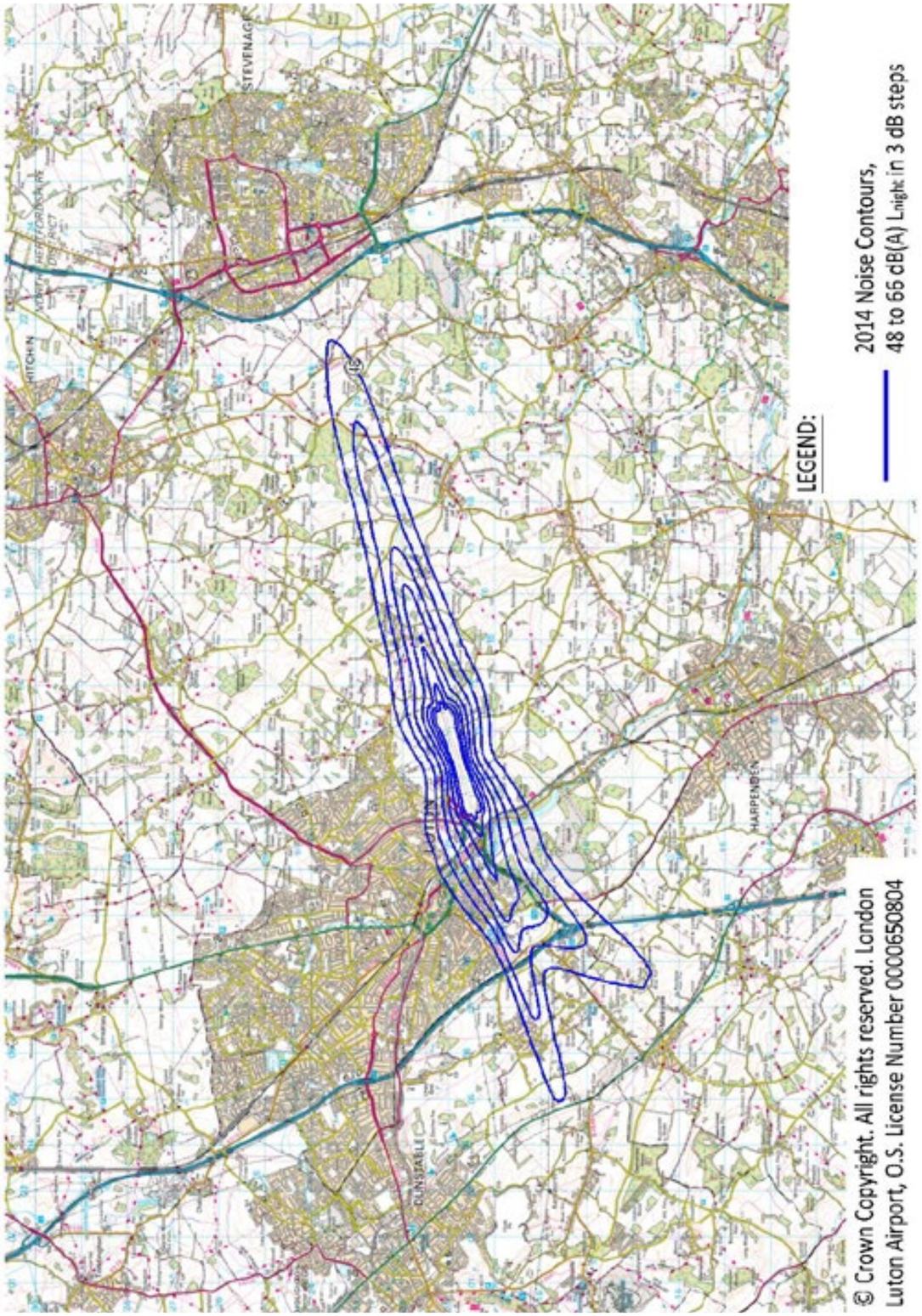
Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2013	2014	2013	2014	2013	2014
>66	0.8	0.8	0	0	0	0
>63	1.2	1.3	0	0	0	0
>60	2.2	2.3	0	0	0	0
>57	4.6	4.7	800	800	300	350
>54	8.1	8.3	2,400	2,500	900	900
>51	14.2	14.9	6,100	6,300	2,350	2,250
>48	**24.6**	**25.7**	**11,900**	**12,700**	**4,900**	**4,750**

Please note that in Annual Summer contours and Annual Contours the number of dwellings has fallen, but population has risen. This kind of effect happen from time to time

[1] - Population counts rounded to nearest 100
[2] - Dwelling counts rounded to nearest 50



Annual L_{den} Noise Contours 2014



Annual L_{night} Noise Contours 2014

Correspondence and Complaints

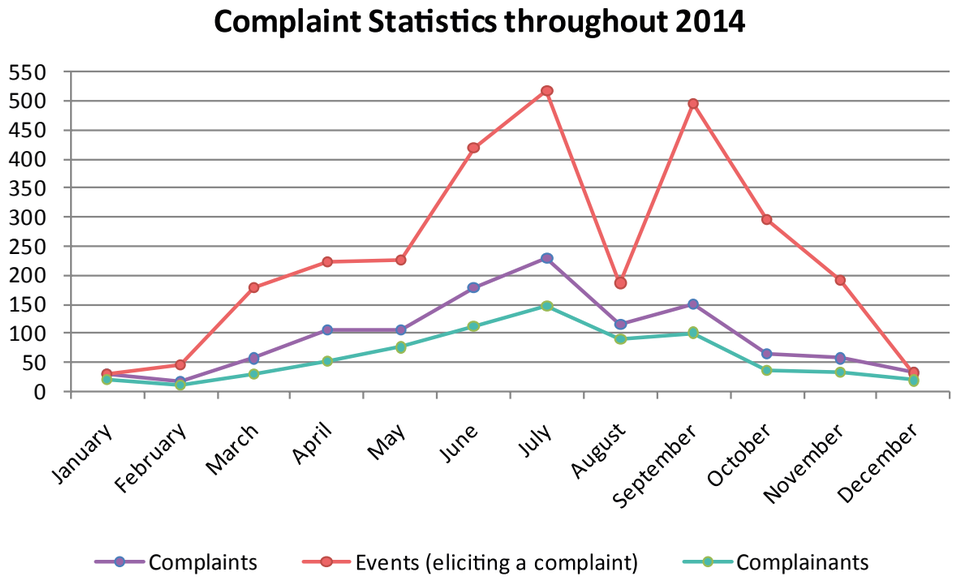
We aim to investigate, log and respond to all correspondence in a timely and systematic manner, preferably within 10 working days. Where this is not possible an acknowledgement is sent by post within 5 working days to those who contact us. E-mail correspondence will automatically receive an acknowledgement by return.

Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

Total complaints relating to LLA aircraft operations

	2013	2014
Total No. of Complaints relating to LLA aircraft operations	**1,022**	**1,146**
No. of Complainants	**379**	**457**
No. of Events (eliciting a complaint)	**2164 (1,606*)**	**2,836 (1,200**)**
Average No. of Complaints per Complainant	2.7	2.5
Average No. of Events per Complainant	5.7 (4.2*)	6.2 (2.6**)
Average No. of Events per Complaint	2.1 (1.6*)	2.5 (1**)
No. of Aircraft Movements per Complaint	96	91
No. of Aircraft Movements per Event	45 (61*)	36 (87**)

During 2014 a total of 1,146 complaints (on average 3 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 1,022 in 2013. The figure below shows the complaints statistics throughout 2014. More complaints were received in the summer months, correlating with an increase in aircraft activity.



* - Figures excluding 558 events reported by just one resident of Harpenden

** - Figures excluding 1,636 events reported by three individuals, one resident in Harpenden, one resident in Kensworth and one resident in St Albans

457 Individuals reported concerns to the Airport Environment Office during 2014

312 Individuals **(68%)** contacted the Airport only once during 2014

173 Individuals **(38%)** reported concerns for the first time

During 2014, 768 events were reported by one individual in Harpenden but, in agreement with the LLACC, these events are no longer included in statistics although a total of 23 complaints from this complainant, reporting general disturbance and frequency (both day and night), have been incorporated in all statistics.

1,146 Complaints relating to LLA aircraft operations

86 Complaints not attributable to LLA traffic, including **21 Complaints** relating to non-LLA helicopters operating to/from other airfields

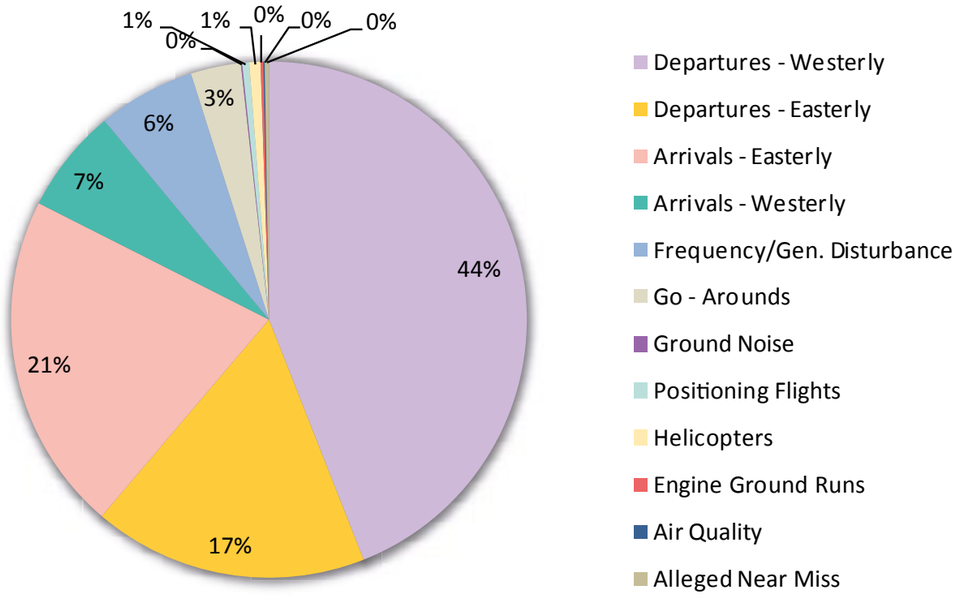
23 Complaints reported disturbance relating to over-flights to/from other airports during the Night Period

92 Individuals reported night noise in 2014 (compared to **163 individuals** in 2013)

436 Complaints concerning night noise disturbance from LLA operations

17% of Night Disturbance was from just two individuals, in Kensworth and St. Albans

Nature of Disturbance



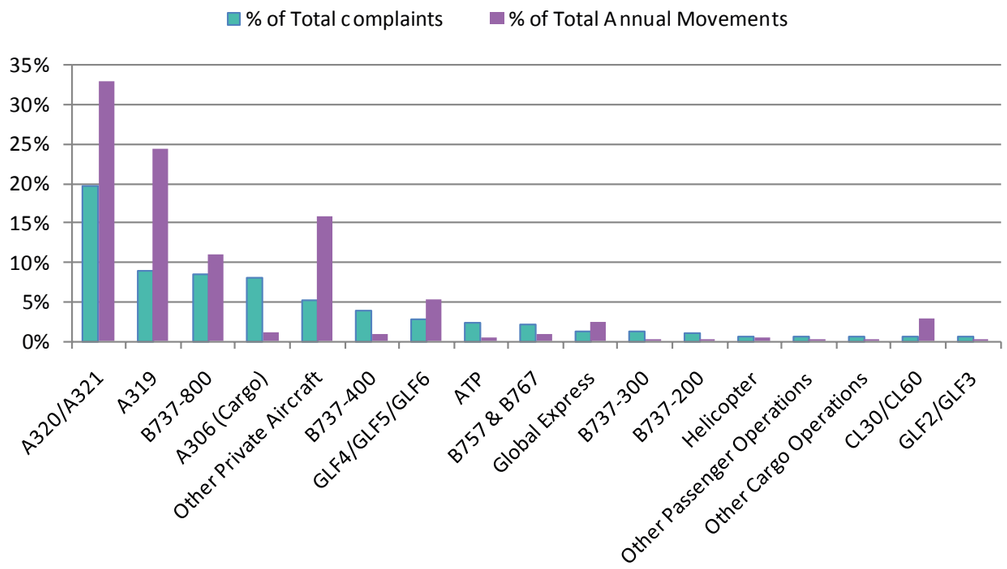
Within the 504 complaints concerning westerly departures 158 were of a general nature, 314 reported specific aircraft following the Match/Detling route, 13 related to aircraft on the Compton route and 13 related to aircraft following the Olney heading. Six other complaints involved positioning flights following off-airways flight routes.

Of the 197 complaints attributed to easterly departures 35 were of a general nature, 122 related to aircraft following the Compton heading, 26 related to aircraft on Olney flight route and 11 to aircraft on the Match/Detling heading. A further 3 complaints involved positioning flights following off-airways flight routes.

Whilst 189 of the 243 complaints concerning easterly arrivals reported general disturbance, 55 related specifically to aircraft on approach to land from the Lorel Reporting Point.

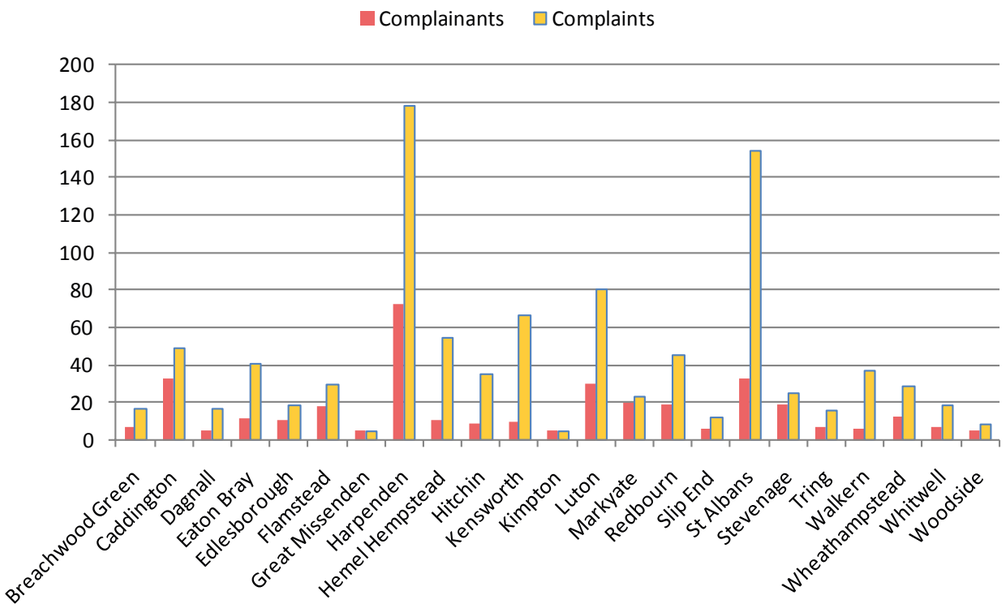
Complaints by aircraft type

Of the 1,146 complaints relating to LLA aircraft operations registered during the year 795 complaints (69%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The diagram below shows aircraft types generating complaints.

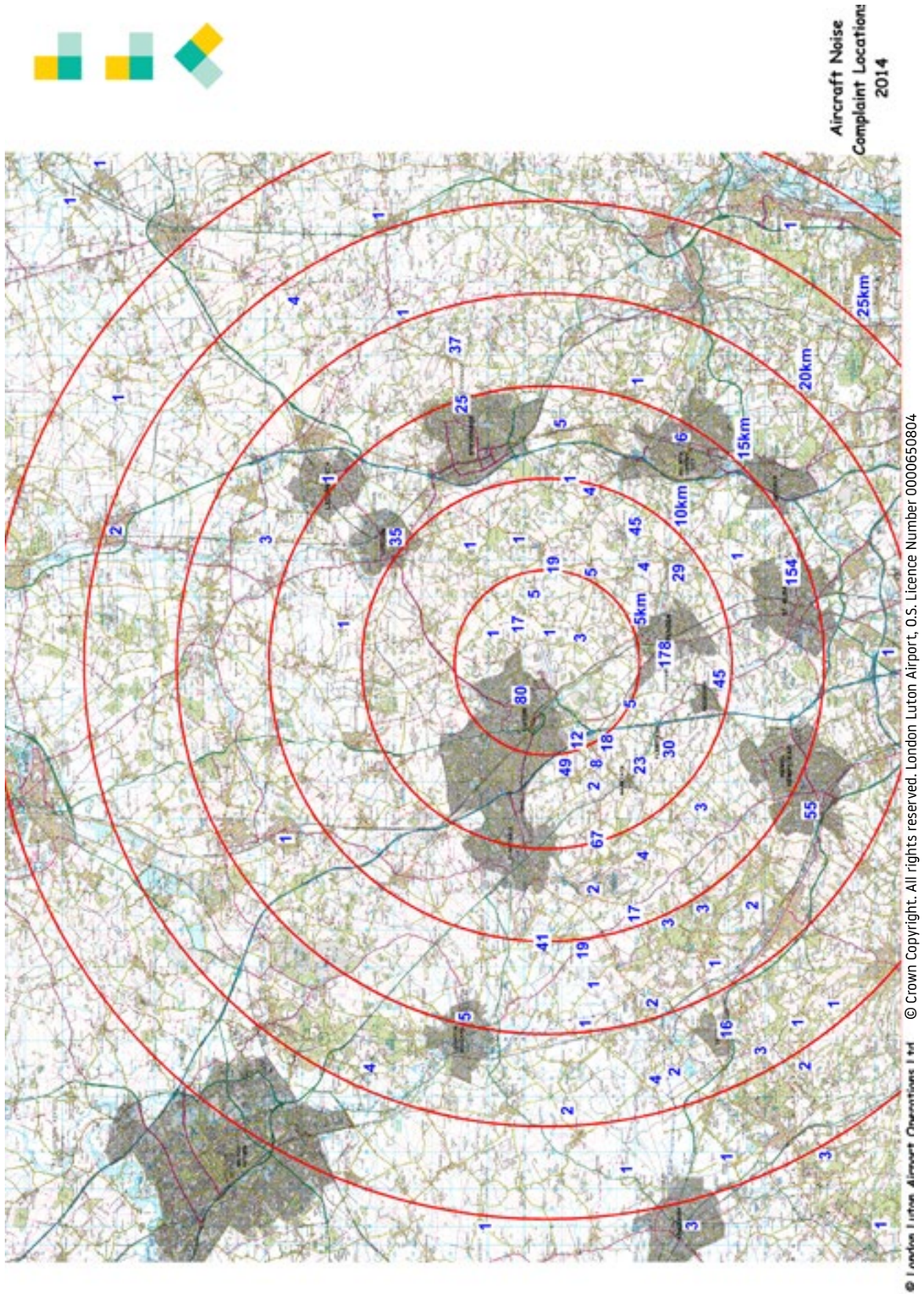


It can be seen that the majority of the complaints are related to the quietest aircraft. This is mainly due to the frequency of these quieter, modern aircraft types compared to the small percentage of older generation aircraft.

Location of Complainants (5+)



Location of Complainants 2014



Communication method

The following table shows the mode of communication used to contact London Luton Airport regarding noise.

Communication Method	% of Total Complaints
E-mail	72%
Telephone	27.7%
Letter	0.3%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Airport Environment Office by the following means:

Postal Address **Airport Environment Office**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY
Direct Telephone **(01582) 395382 (24 hours)**
Direct email* noise@ltn.aero

* A link also exists on the www.london-luton.co.uk website, providing a template for reporting concerns relating to aircraft activity, which is then sent directly to the Airport Environment Office for logging, investigation and response.

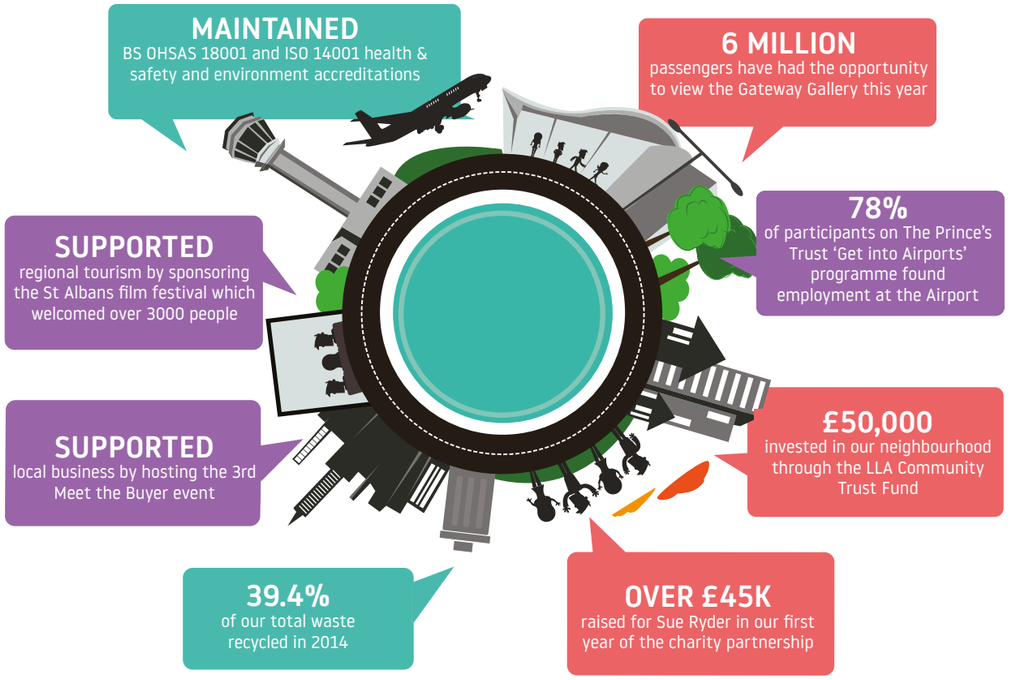
Community Relations

Through the Airport Consultative Committee, which meets each quarter, London Luton Airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the Airport Consultative Committee including meeting minutes and its representatives can be found at the following link:

http://www.llacc.com/

Our five year Community Relations Strategy forms part of LLA corporate social responsibility programme and sets out how we will facilitate community development and meet the needs of key stakeholders. Initiatives are delivered by the Airport in collaboration with key community partners. In 2014 we made eight commitments to ensure that we continued to play a positive role in our local community. The following figure summarises the progress made against these commitment during the year.

Community engagement strategy achievements



Employment

Employment at and surrounding London Luton Airport contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the Airport. Thus any analysis of the Airport's impact upon the locality needs to contain an economic perspective, and this includes employment.

An analysis of employers within and around the Airport boundary has been conducted, and the Inter Departmental Business Register (IDBR) was used as the main data source. This Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity, representing nearly 99% of economic activity (source: ONS website www.statistics.gov.uk).

An initial list was received from London Luton Airport of companies within its boundary. The listing was matched against the IDBR. Companies outside the Airport boundary were identified by the street names/areas as follows:

- Spittlesea Road
- Part of Frank Lester Way
- President Way
- Wigmore House
- Part of Airport Way
- Barratt Industrial Park
- Airport Executive Park

Fourteen companies which appeared on the list but not the IDBR had imputed figures gained from the Airport operator and/or planning applications.

Total employment in and around the Airport

Using main section headings from the Standard Industrial Classification 2007 (SIC 2007), the following was found. Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	500
Administrative and Support Service Activities	1,800
Financial and Insurance Activities	<100*
Manufacturing	1,400
Professional, Scientific and Technical Activities	<100*
Public Administration & Defence; Compulsory Social Security	<100*
Real Estate Activities	<100*
Transportation and Storage	4,400
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	<100*
Grand Total	**8,500**

** - Figures have been suppressed where there are less than three companies in a given Section and/ or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data.*

There are approximately 8,500 employees working in the vicinity of the Airport, a slight increase of 1% compared to the previous year. (Due to confidentiality reasons we are bound by the Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures)

Employment by working pattern

The IDBR provides employment figures by full and part time working pattern. The total full time figures (where a breakdown by full/part time was provided) was 7,000 employees. This was a slight increase from the previous year's figures. The figure for part time employees was 1,200 which was a slight decrease from last year's figures.

There were several companies who did not state their full/part time working split on the IDBR therefore the figures above do not add to the total employment figures.

The percentage split of full/part time employees found at the Airport compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of LLA	81.3%	14.1%
Luton UA	76.9% (confidence limit 3.1)	23.1% (confidence limit 3.1)

Source for Luton UA Figures: Annual Population Survey, Office for National Statistics Oct 2013 – Sept 2014, latest data. Figures are percentages of those in employment.

Full and part time working patterns in the vicinity of the Airport differs from that found within Luton as a whole, with the Airport having an increased proportion of full time workers.

Time series

The following figures from 2010 to 2014 show the estimated employment levels in the vicinity of the Airport

Source: AMR Employment Surveys 2010- 2014

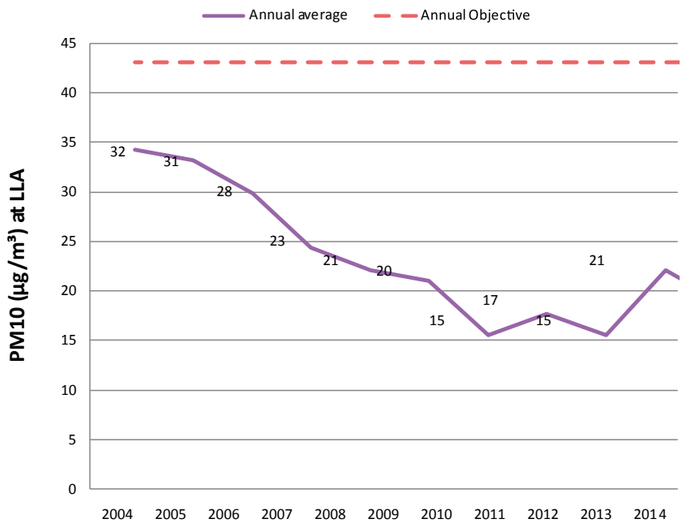
Air Quality

London Luton Airport has been monitoring air quality in and around the Airport environment since 2003. Air quality data collected at LLA is integrated into a monitoring programme incorporating data collected by the surrounding Local Authorities, with a monthly report available to view online at www.ukairquality.net The parameters we measure are PM_{10} and NO_2.

PM_{10} (Particulates measuring 10µm or less)

PM_{10} is one of the main contributors to reduced ambient air quality. Particulate matter describes fine particles including dust and soot which are suspended in the air. When you breathe in these particles they can stick to the surface of your lungs, and in areas of high pollution can cause respiratory health problems. Local sources include emissions from vehicles and aircraft engines, wear of brakes, tyres, and construction debris.

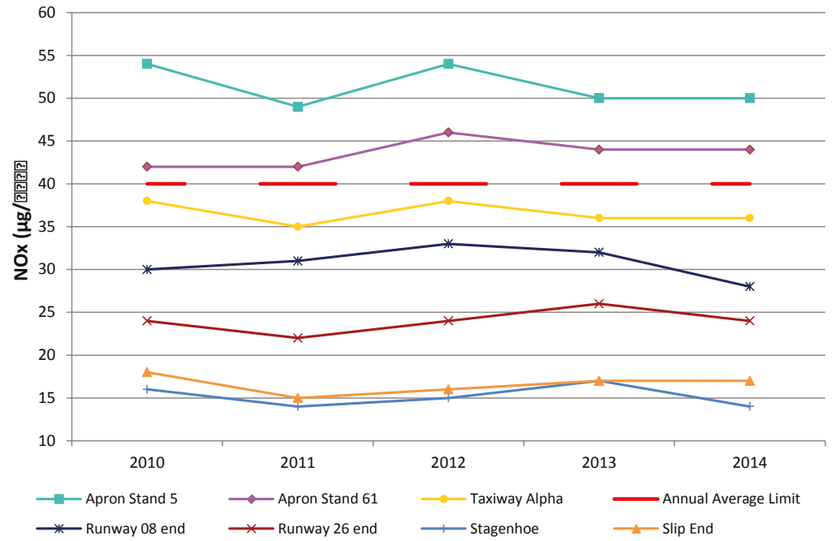
PM_{10} is monitored from one location in the middle of the Airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg m³, and are decreasing over time. There were 6 occurrences of moderate pollution exceeding the daily mean of 50 µg m³, which is well within the objectives laid out in the Air Quality (England) Regulations 2000 (as amended).



Nitrogen Dioxide (NO_2)

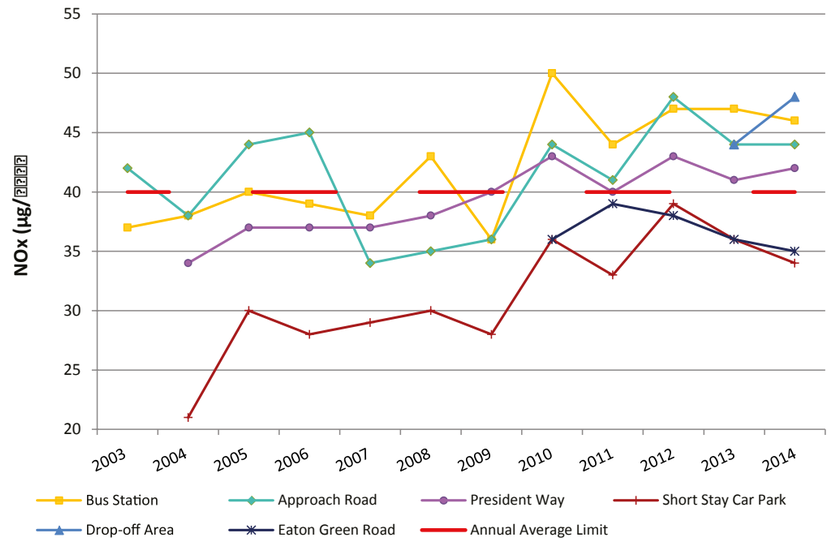
NO_2 in high concentrations can cause a wide variety of health and environmental impacts. The gases are produced from the combustion of fuels such as diesel and aviation fuel. NO_2 is currently measured from 14 locations around LLA. The annual mean local air quality objective of 40µg m³ also applies to NO_2.

Airport apron, runway and under the flight paths



NO_2 levels at the closest residential receptors to the Airport, and also along the aircraft flight paths are significantly below the the objective level laid out in the Air Quality (England) Regulations 2000 (as amended). Levels monitored at the roads around the Airport, in the car parks and on the apron are a little higher, with some exceeding the objective level. This illustrates that vehicle movements have more of a detrimental impact on air quality than aircraft around LLA.

Roads, car parks and bus station



Surface Access

LLA aims to improve access to London Luton Airport, particularly by public transport in order to reduce the contribution that journeys make to total airport-related CO2 emissions and also to air pollution. LLA's current Airport Surface Access Strategy runs from 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework.

Modes of Transport

Passengers transport mode share (CAA Data)

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton.

In common with other airports, LLA uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table shows the weighted CAA data for 2009 to 2013. The CAA statistics suggest that 32% of airport passengers chose to use public transport in 2013. LLA aims to achieve 40% by 2017.

%	2009	2010	2011	2012	2013
Private Car - Drop Off	28	27	27	27	28
Private Car - Park	27	24	23	23	23
Rail	17	17	15	17	16
Bus/Coach	14	15	16	16	16
Taxi	14	15	18	17	17

Staff transport mode share

LLA aims to reduce the proportion of staff travelling alone by car to and from London Luton Airport to 60% or lower by 2017. Whilst employee travel does not generate as many trips as passengers, it is as important consideration as employees making a more sustainable travel choice will give daily results due to the frequency of their need to commute to work. Staff travel surveys are undertaken once every 2 years, and the results since 2010 are presented in the table below.

%	2008	2010	2012	2014
Drive alone	72	66	66	62
Car share	10	12	8	11
Taxi	2	1	1	0
Motorcycle	1	1	1	1
Rail	5	5	5	10
Bus/Coach	6	7	9	8
Cycle	1	2	2	2
Walk	3	5	6	7

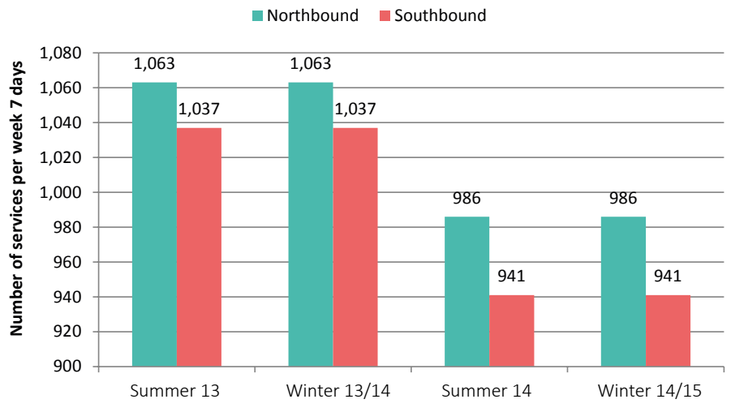
Public Transport Services

Train Services

The graph shows the number of scheduled train services per week from Luton Airport Parkway Station appear to have dropped from the previous year, although it is believed this was due to an error in the 2013 calculation.

During this period, the franchise changed from First Capital Connect to Govia Thameslink Railway.

Scheduled train services from Luton Airport Parkway Station



The table below represents passenger numbers by ticket type that travelled through Luton Parkway Station for the last 4 years. This illustrates changes of patronage to Parkway Station and possibly modal change. The figures have been taken from the Office of Rail and Road Station Usage estimates. These are published annually.

The most recent statistics are quoted. In displaying these figures, season ticket holders have been shown after the sub-total, as it is a reasonable assumption that generally these travellers will not be air travellers. The figures show a steady increase in rail passenger numbers using Luton Parkway Station. In 2013 the Northern Entrance to the station was opened, providing access from Kimpton Road. Later paragraphs will refer to changes to bus services that may influence these

Tickte Type	2010-11	2011-12	2012-13	2013-14
Full tickets	1,033,698	1,241,776	1,252,397	1,283,612
Reduced/concession	840,880	740,064	825,124	915,187
Sub-total	**1,874,578**	**1,981,840**	**2,077,521**	**2,198,799**
Season tickets	437,542	447,764	460,614	468,454
Total	**2,312,120**	**2,429,604**	**2,538,135**	**2,667,253**

Bus and Coach Services

Some National Express services make scheduled stops within the Town Centre, also allowing for patronage between the Town Centre and the Airport.

All buses must comply with the accessibility regulations by 1st January 2017, and all coaches by 1st January 2020. These vehicles are gradually being phased in, with many routes offering accessible services already.

Within this monitoring period, Greenline service 757 has resumed a direct service to the Airport via Luton Railway Station. It is also noted that between Summer 2014 and the Winter schedule, there was a reduction in the number of buses on service A1 between the Airport and Victoria Station.

The Arriva 'A' service which operates along a fast and dedicated route from Houghton Regis/ Dunstable to the Airport, has made a number of changes to its timetable over the period and extended operation of its services commencing at 04:30 until midnight, potentially providing staff with an alternative to car travel.

The rise in services calling at the Airport and the opening of a northern entrance to Luton Parkway Station, with a footpath leading to Kimpton Road, is helping to promote public transport as a means of getting to and from the Airport.

Bus and Coach Services From London Luton Airport

Local	Summer 13	Winter 13/14	Summer 14	Winter 14/15
Luton Railway Station	319	586	460	483
Others	1,830	1,577	1,643	1,651
Sub-total	**2,149**	**2,163**	**2,103**	**2,134**

National	Summer 13	Winter 13/14	Summer 14	Winter 14/15
Central London	454	833	1,152	1,043
Others	700	1,015	567	574
Sub-total	**1,154**	**1,848**	**1,719**	**1,617**
Total	**3,303**	**4,011**	**3,822**	**3,751**

Airport - Airport Link	Summer 13	Winter 13/14	Summer 14	Winter 14/15
Birmingham	91	91	84	84
East Midlands	0	91	35	28
London Gatwick	70	203	77	77
London Heathrow	154	336	189	189
London Stansted	182	133	126	126
Manchester	7	7	14	14
Total*	**504**	**861**	**525**	**518**

* - As some services call at more than one airport, the total number of actual departures will be less than the sum of the disaggregated services to each airport.
This information represents a general guide to the number of services based on the information available from the various bus operators.

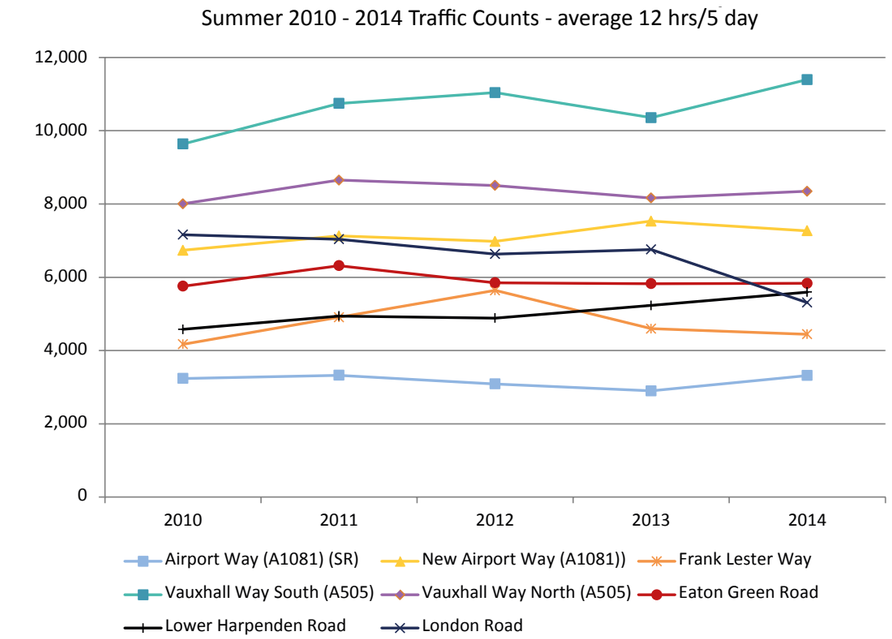
Road Traffic and Car Parks

The information contained in this section is based on traffic counts conducted at 8 sites during the period 12th-18th September 2014. This period is comparable with previous summer traffic counts and avoids any periods when significant changes in traffic characteristics can occur. Overall, traffic flows have remained at the 2013 level. The table and graph below show an increase in 12hr/5day traffic flows between 2013 and 2014 on 2 of the 8 monitored roads, the highest increase being +1,040 (+10.0%) on Vauxhall Way (south). The most significant decrease in traffic was -1,452 (-21.5%) on Lower Harpenden Road. However, it should be noted that this occurred during construction of the J10a improvement works. These works will also have contributed to the increase in traffic on Lower Harpenden Road resulting from drivers seeking to avoid the J10a works.

Summer 2009 - 2014 Traffic Counts (Average 12 hrs/5 day)

	Map ref	2010	2011	2012	2013	2014
Airport Way (A1081) (SR)	599	3,237	3,323	3,088	2,897	3319
New Airport Way (A1081))	925	6,735	7,127	6,979	7,532	7268
Frank Lester Way	445	4,170	4,908	5,642	4,597	4445
Sub-total		**14,142**	**15,358**	**15,709**	**15,026**	**15,032**

	Map ref	2010	2011	2012	2013	2014
Vauxhall Way South (A505)	520	9,638	10,746	11,039	10,355	11395
Vauxhall Way North (A505)	603	8,005	8,652	8,505	8,164	8348
Eaton Green Road	677	5,755	6,317	5,849	5,826	5835
Lower Harpenden Road	106	4,576	4,942	4,885	5,232	5594
London Road	393	7,163	7,037	6,634	6,759	*5307
Sub-total		**35,137**	**37,694**	**36,912**	**36,336**	**36,479**
Total		**49,279**	**53,052**	**52,621**	**51,362**	**51,511**



* - Site impacted by J10a works

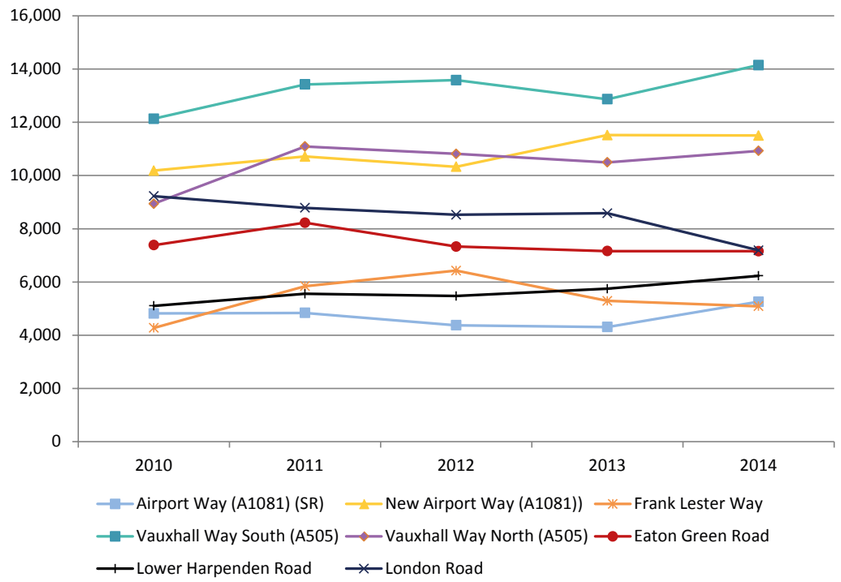
For the 24-hour week (24/7), the table and graph below reveal similar patterns to the 12hr/5day traffic counts. The highest increase in traffic is +1,281 (10.0%) on Vauxhall Way (south), while the most significant decrease in traffic is -1,392 (-16.2%) on Lower Harpenden Road.

Summer 2009 - 2014 Traffic Counts (Average 12 hrs/7 day)

	Map ref	2010	2011	2012	2013	2014
Airport Way (A1081) (SR)	599	4,818	4,840	4,374	4,309	5,256
New Airport Way (A1081))	925	10,185	10,714	10,330	11,518	11,503
Frank Lester Way	445	4,275	5,842	6,426	5,289	5,086
Sub-total		**19,928**	**21,396**	**21,130**	**21,116**	**21,845**

	Map ref	2010	2011	2012	2013	2014
Vauxhall Way South (A505)	520	12,131	13,421	13,582	12,865	14146
Vauxhall Way North (A505)	603	8,939	11,093	10,813	10,496	10924
Eaton Green Road	677	7,383	8,226	7,330	7,161	7155
Lower Harpenden Road	106	5,104	5,555	5,475	5,746	6232
London Road	393	9,225	8,788	8,523	8,582	*7190
Sub-total		**42,782**	**47,083**	**45,723**	**44,850**	**45,647**
Total		**62,710**	**68,479**	**66,853**	**65,966**	**67,492**

Summer 2010 - 2014 Traffic Counts - average 12 hrs/7 day



Traffic flow along Airport Way (SR) has consistently decreased over the five years to 2014, which is expected given that Airport Way (new) opened in 2009. However, it is possible that this route may start to show a slight increase from this period onwards as it is now part of the Luton Dunstable Busway route to the terminal, although part of the increase indicated by the traffic counts was probably due drivers avoiding the J10a works.

This data indicates that Vauxhall Way axis continues to accommodate the highest traffic volumes in this vicinity. This is due to its strategic location and connectivity to other district and arterial roads into and out of Luton. It is likely that the completion of East Luton Corridor engineering operations and increased activities in and around London Luton Airport have resulted in significant redistribution of traffic flow in the area.

** - Site impacted by J10a works

Overall, traffic flows have shown a small increase of 2% between 2013 and 2014.
See the map for indicative location of these observation points.

Summer 2009 - 2014 Traffic Counts (Average 12 hrs/7 day)

On site Car Parks or Car Parks within the airport boundary

Car Parks	Spaces	Area m2
Short Term	1,556	39,373
Mid Term	2,780	65,000
Long Term	3,400	72,150
Passenger Total	7,736	176,523
Staff Total	3,835	97,270
Total	**11,571**	**273,793**

Whilst the Surface Access Strategy seeks to encourage passengers and staff to travel to LLA by sustainable means, there will always be some passengers and staff who choose to travel by car. Policies LLA1 and LLA2 of the Borough of Luton Local Plan set out the criteria for airport car parking, both on and off site.

Staff and passenger car parking capacity has again remained unchanged during 2014.

Off site Car Parks or Car Parks outside the airport boundary

Policy LLA2 seeks to resist off site airport related parking, unless in exceptional circumstances. However, the existence of these sites should be acknowledged and monitored. Only authorised car parks are noted in the following table, although others may occur around the Airport boundary.

Operator	Spaces*	Area ha
Airpaks (Slip End)	3,510*	5.97
Paige Airport Parking (Slip End)	1,600*	2.49
Central Car Storage	264*	0.56
Thurlow Nunn Kimpton Road**	125	1.11
Latimer Road**	200	0.42
Total	**5,710**	**10.55**

Sustainable Travel Improvements during 2014

During 2014 a number of improvements were made to surface access. In September 2014 GTR took over the Thameslink franchise, and have been working with LLA on a number of improvements to rail access. Branding and way-finding has been improved in the terminal, at Luton Airport Parkway and at St. Pancras to direct passengers to and from London Luton Airport by train. GTR has also rolled out a marketing campaign dedicated to promoting the use of the Thameslink to get to LLA. Ticketing machines have been introduced in arrivals and additional early morning services have been confirmed for introduction in 2015.

EasyBus launching a new bus service from London Luton Airport to London Liverpool Street in October 2014. This route replaced their service to Baker Street and comprises of 120 services per day in the summer and 106 services per day in the winter.

LLA also commissioned two assessments to be undertaken during 2014, both of which were shared with relevant bus and coach operators. One looked at potential service improvements to Hemel Hempstead, and the other looked at areas not served by buses along the Luton and Dunstable Guided Busway.

* - Numbers of spaces given relates to the number approved as part of planning conditions imposed at the time of determination of the application

** - Unauthorised sites

Planning and Development

Through the local transport plan, Luton Borough Council (LBC) set out the policies, strategies and schemes for Luton, Dunstable and the Houghton Regis area. The current Local Transport Plan (LTP3) for Luton covers the period 2011-2026 and can be accessed through LBC's website.

Airport planning and development

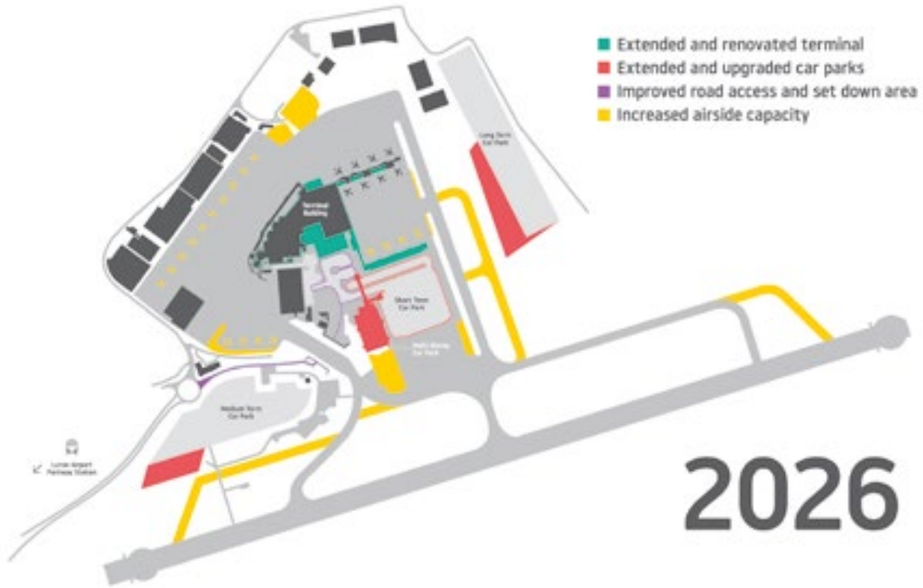
London Luton Airport's planning consent for a £100m development was granted by Luton Borough Council to application 12/01400/FUL in June 2014.

Before the plans were formally submitted, proposals to improve the Airport were subject to two public consultations. 65% of respondents who took part in the consultation on LLA development plans said they supported proposals to develop the Airport. They all stated their support for the economic benefits to Luton and the wider region, and the need to generate 5,100 new jobs, including a contribution to a reduction in youth unemployment.

The proposals involve measures to optimise the capacity of the Airport in four key areas, each of which is linked. For the project to achieve its objectives of improving passenger experience whilst increasing capacity to 18 mppa, all of these measures are required.

1. **Taxiways.** The current layout of the taxiways leads to aircraft ground congestion during peak periods. The proposals include:
   a. a parallel taxiway to the east of the Central Terminal Area (CTA) to enhance circulation in and around the aircraft stands, and
   b. new parallel taxiway extensions for either end of the runway (currently many aircraft have to back track on the runway to maximise the distance available for take-off, which has an impact on the run way's capacity).

Improving the ground movement of aircraft is also likely to result in a reduction in flight delays and the ground running of aircraft engines.



2. **Piers, Stands and Aprons.** An increase in the number of aircraft landing and taking off also requires an increase in the capacity of the infrastructure to handle the aircraft and passengers.

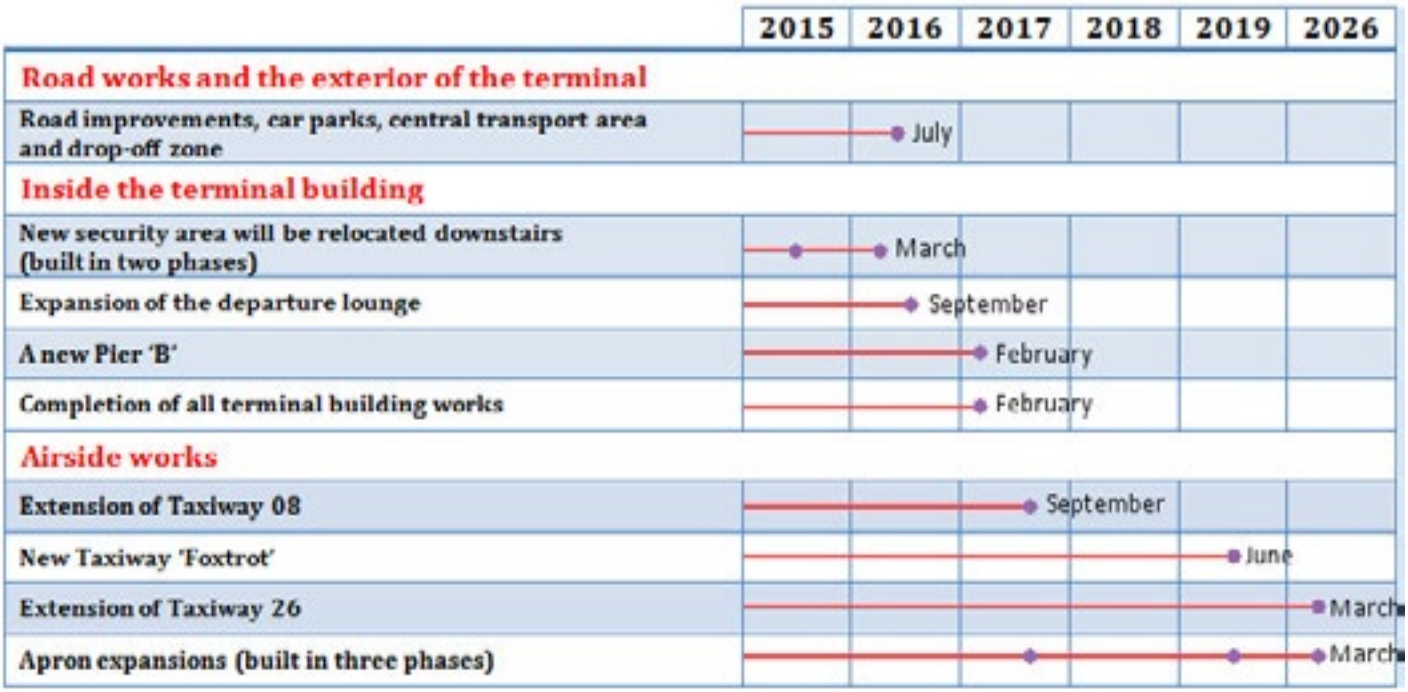
    a. A number of new stands are proposed, replacing and improving existing stands, with as many as possible as 'contact' stands i.e. where a passenger can access the aircraft directly from the terminal building.
    b. A new two-storey pier is being provided to service the new contact stands and reduce the need for bussing.
    c. Additional aircraft parking will also be required and where possible development of the emerging option has focused on making best use of existing areas through their extension and reconfiguration.

3. **Terminal.** In order for the Airport terminal building to be able to handle the increase in the number of passengers the current building will be reconfigured with a small amount of additional new build between the newer part of the building and the original passenger terminal, incorporating the current bus drop area. At the same time as reconfiguring the terminal to increase its capacity the opportunity will be taken to focus on delivering an improved passenger experience and service at the Airport, this will include:

    a. Up to 20 security passenger screening lanes;
    b. 15 immigration passenger screening lanes;
    c. Up to 8 international and 1 domestic passenger reclaim belts;
    d. Increased retail, catering, circulation and seating areas.

4. **Road Access and Car Parking.** The proposals seek to improve the movement of traffic in the Airport, by
    a. Dualling the road from the Holiday Inn Roundabout to a newly configured road system in front of the Central Terminal Area
    b. A new multi-storey car park is proposed next to the CTA that will enable easy passenger access to the terminal and at the same time minimise the amount of land required for the car park

Construction will take place over three phases:



ANNEX F - AIRPORT ANNUAL MONITORING REPORT 2015

Annual Monitoring Report
2015

Employment and the Surface Access sections will be provided as an addendum to the main document.

London
Luton
Airport

Contents

Foreword

2015 was an exciting year for London Luton Airport (LLA). Not only did we see rapid growth in passenger numbers – an increase of 16.9% over the year – but we also broke ground on a £110million project to transform the airport.

While many residents are excited by the jobs and opportunities that the airport's growth will bring, we understand that others will also have had concerns over whether there will be an increase in aircraft noise.

Reducing the impact of aircraft noise as the airport expands is a major undertaking. What's more, unlike most airports around the UK, the majority of LLA's noise policies and interventions have been developed voluntarily rather than through regulation.

The progress made has been the result of extensive collaboration and cooperation between the local community, our commercial partners and the staff at LLA. As a result of this constructive approach, and following extensive planning, 2015 saw the introduction of a range of major new initiatives to tackle the impact of airport operations..

We have not only reduced noise violation limits, but we have also made sure these limits have a real impact by introducing financial penalties for operators who exceed them. Those fines are paid into LLA's Community Trust Fund, meaning that the money raised directly benefits the local community.

In August 2015 we also introduced new Area Navigation (RNAV) technology to enable aircraft to follow tighter flight paths. This change, which was introduced with the support of over 90% of residents in consultation, has reduced the number of people directly overflown on one of our main departure routes from approximately 13,000 people to 3,000.

Finally, following extensive engagement wwith our airline partners, we now have 87% of operators employing 'Continuous Descent Approach' (CDA) procedures. This keeps arriving aircraft at higher altitudes for longer, which both reduces noise and cuts carbon emissions.

We've made great strides in 2015. However, we also recognise that there is still much more we can do, particularly as we continue to grow.

We are working with the Civil Aviation Authority (CAA) and National Air Traffic Services (NATS) to further increase the proportion of flights using CDA procedures. We hope to introduce RNAV technology on all our flight paths over the next few years. We are working with airlines to further encourage the use of quieter aircraft.

By continuing to work closely with the CAA, NATS and local residents we are confident that we can continue our steady progress in reducing the impact of noise through this year and in the future. We will continue to report on our performance on noise management for local residents and welcome feedback.

Our aim is to ensure not only that local residents enjoy the economic benefits of the airport's success, but also that we continue to engage with local residents to mitigate and as far as possible reduce our environmental impact.

Neil Thompson
Operations Director
London Luton airport

Key Monitoring Indicators

Parameter		2015	2014
Total Aircraft Movements	↑	116,412	103,939
Day Movements (07:00 - 23:00)	↑	103,220	91,331
Night Movements (23.00 – 07.00)	↑	13,192	12,597
Early Morning Movements (06.00 – 07.00)	↑	4,778	4,617
Total Scheduled Passengers	↑	11,807,292	10,041,214
Total Charter Passengers	↑	471,893	458,925
Total Passengers	↑	12,279,185	10,500,139
Number of Destinations	↑	118	105
Number of New Airlines	↑	4	1
Number of New Routes	↑	20	15
Westerly/Easterly Runway Split (%)	-	72/28	68/32
Night Quota Used (3,500 Limit)	-	2,480	-
Average Ratio of Aircraft movements % (day/night)	-	89/11	88/12
Track Violations	-	62	-
Departure Noise Infringements (Day)	↑	15	1
Departure Noise Infringements (Night)	↑	9	3
Fines transferred into Community Trust Fund	-	£52,000	-
24hr CDA (% achievement)	↓	87%	88%
No. Departures Recorded at ≥ 85 dB(A) during Day (Night)	-	13 (0)	22 (0)
No. Departures Recorded at ≥ 76 dB(A) during Day (Night)	-	7,871 (1,209)	8,240 (1,046)
No. Departures Recorded at ≥ 70 dB(A) during Day (Night)	-	36,879 (4,266)	34,680 (3,919)
Night Noise Contour Area (48 dB $L_{Aeq, 8h}$)	↑	35.3km²	35.2km²
Population within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↓	14,681	16,040
Dwellings within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↓	5,539	6,583
Noise Complaints	↓	960	1,146
Complainants	↓	355	457
Number of New Complainants	↓	158	173
Largest Source of Complaints	-	Deps. West	Deps. West
Number of PM_{10} exceedances	↓	0	6

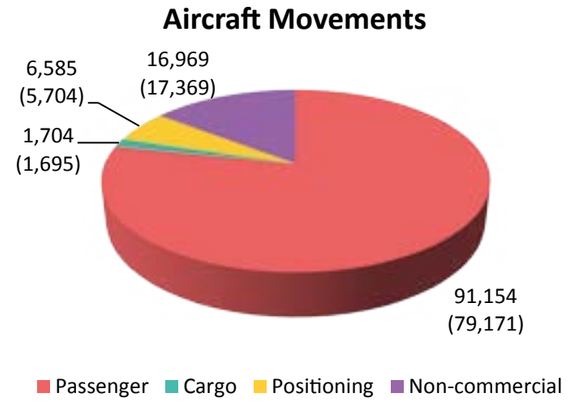
Air Traffic Data

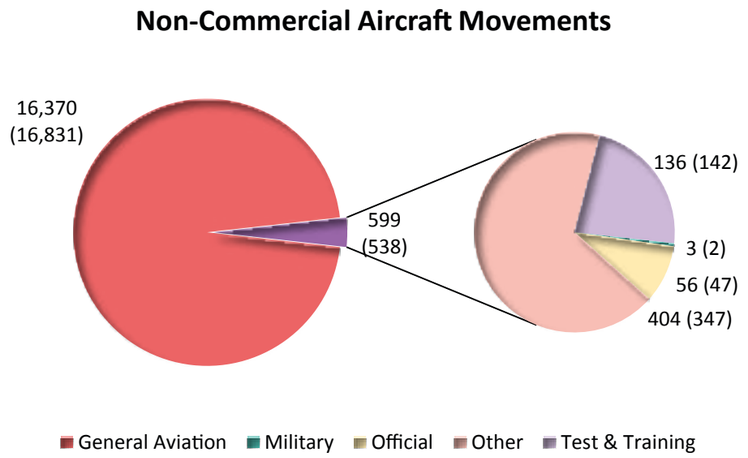
Aircraft movements

LLA handled a total of 116,412 aircraft movements during 2015, an increase of 12% compared to 2014. An aircraft movement is the take-off or landing of any aircraft from the airport.

The majority of aircraft movements were passenger flights at 91,154 movements this includes commercial flights by executive aircraft (compared with 79,171 in 2014). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2014 data is shown in brackets.

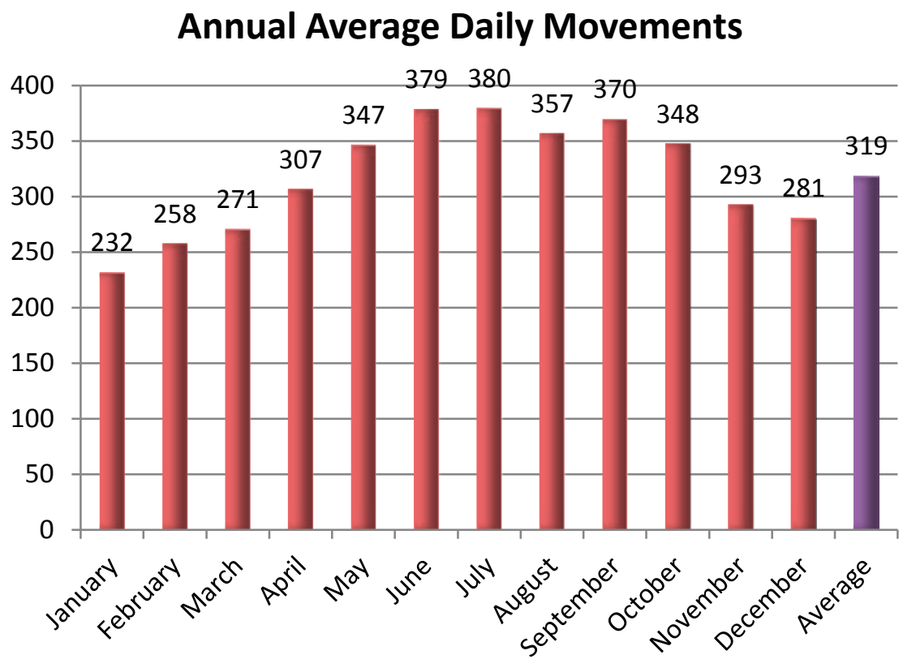




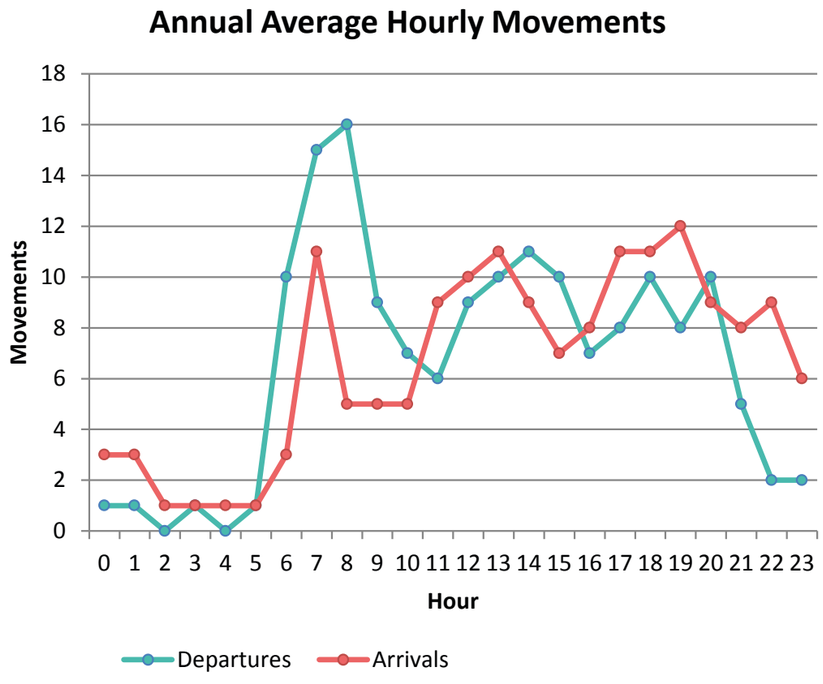
Movement Classification

Commercial – operating for hire or reward and includes cargo, passenger and positioning flights
Non-Commercial – not operating for hire and reward
Cargo – aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories
General Aviation – private aircraft, helicopters and business jets not operating for hire or reward
Passenger – commercial passenger flights, including executive aircraft
Positioning – typically empty flights to/from other airports
Military – flights on military business
Official – flights solely for official purposes by British or foreign civil government departments
Other – flights coming for maintenance and or departing aircraft that have made an unscheduled return to base
Test & Training – training flights involving aircraft and also flights following or during aircraft maintenance

The graph below illustrates that the busiest time of year is May - October, with over 340 flights per day. **Our busiest day of the year was on May 22nd with 425 aircraft movements.** In comparison, winter months are the quietest, with less than 300 flights per day. On average there were 319 movements per 24 hours (in comparison with 285 in 2014).



The busiest time on average during 2015 for departing aircraft was 06:00-08:00 hrs, with another peak between 13:00-15:00. The average busiest time for arrivals was 07:00-08:00 and 12.00-13.00 hrs. The graph also highlights a low level of average movements during the hours of 00:00-05:00 hrs.



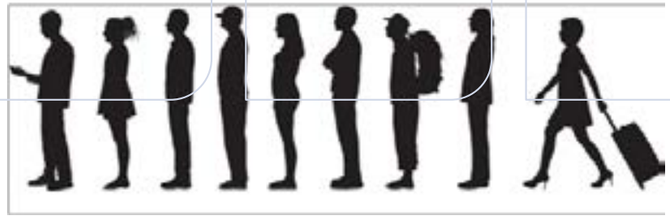
Passenger data

Scheduled	Charter	Totals
• **11,807,292** passengers • just under 18% increase compared with 2014 • **147** average passengers per flight	• **471,893** passengers • just under 3% increase compared with 2014 • **178** average passengers per flight	• **12,279,185** passengers • 17% increase compared with 2014 • Total **147** average passengers per flights

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 12,279,185 passengers were handled at LLA during 2015; 11,807,292 on scheduled flights (96%) and 471,893 on charter flights (4%). This represents an increase in passengers of 17% compared with 2014.

Domestic	EU	Non-EU	Totals
• **949,336** passengers • just under 1% increase compared with 2014	• **8,148,633** passengers • just under 20% increase compared with 2014	• **3,181,216** passengers • just under 16% increase compared with 2014	• **12,279,185** passengers • 17% increase compared with 2014



Cargo

Cargo operations represent just under 2% of all air transport movements at London Luton airport. Night movements accounted for 63% of total cargo movements, relating primarily to postal flights or intra-European express delivery services moving time sensitive and perishable freight such as fresh food, medication and urgently needed technical equipment vital to supporting and sustaining economic growth. The flights carrying more general, less time-sensitive cargo already operate outside of the night-time period. This would include Formula 1 cars, live animals, clothing, machine parts and more.

Operator	Movements			Tonnes
	Day Movements	Night Movements	Total	Total
2015	739	1,279	2,018	28,041
2014	709	1,167	1,876	27,500
2014-2015 difference	+4%	+10%	+8%	+2%

N.B. The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because 4% of a total cargo tonnage was carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in the Aircraft Movements piechart which shows dedicated cargo movements.

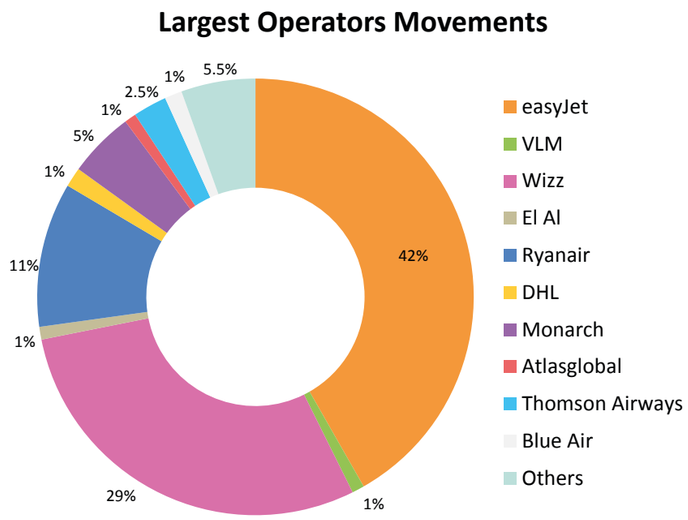
28,041

28,041 tonnes was carried on 2,018 passenger and cargo aircraft.

Airlines

London Luton airport works very closely with its airline partners. The table below provides the movement statistics by the 10 largest operators.

Operator	Movements
easyJet	36,858
Wizz	25,790
Ryanair	9,454
Monarch	4,322
Thomson Airways	2,226
DHL	1,273
Blue Air	1,136
El Al	830
VLM	806
Atlasglobal	764
Others	4,892
TOTAL	**88,351**



N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.

Movements by aircraft type

	Aircraft Type	Movements	% of Total movements
Passenger Aircraft (84,421 movements)	Airbus A320 & A320 sharklets[1] (easyJet, Wizz Air, Monarch)	39,393	33.8%
	Airbus A319 (easyJet)	26,420	22.7%
	Boeing B737-800 winglets[1] (Ryanair, Monarch, Thomson, El Al)	12,046	10.3%
	Airbus A321 & A321 sharklets[1] (Monarch)	2,667	2.3%
	Boeing B737-400 (Blue Air)	924	0.8%
	Boeing B757 & B767 family (Monarch, Thomson, El Al)	1,325	1.1%
	MCD Douglas MD-82/83/87 (Blue Air)	20	0%
	Other Passenger Aircraft	**1,626**	1.4%
Cargo (2,112 movements)	Airbus A300-600 (A306) (DHL, MNG Cargo)	1,276	1.1%
	BAe ATP (DHL, Atlantic Airlines)	403	0.3%
	Boeing B737-300 & B737-400 (DHL)	190	0.2%
	Boeing B757-200 (DHL)	225	0.2%
	Other Cargo Aircraft	**18**	0%
General Aviation (29,420 movements)	Gulfstream 5 and 500 series GLF5	2,592	2.2%
	Canadair Global Express GLEX	3,096	2.7%
	Cessna Citation Excel C56X	2,522	2.2%
	Canadair Challenger CL60	1,851	1.6%
	Gulfstream 4, 300 & 400 series GLF4	2,043	1.8%
	Embraer Legacy 600 E135	1,360	1.2%
	Canadair Challenger CL30	1,409	1.2%
	Cessna Citation Jet C525	1,233	1.1%
	Dassault Falcon FA7X	931	0.8%
	Other Private Aircraft	**12,383**	10.6%
	Helicopter	468	0.4%
	TOTAL	**116,421**	100%

The aim of this section is to provide the number of movements for a specific aircraft type. The groups are conditional, assuming that these are the typical aircraft types used for passengers, cargo and general aviation movements. As a result the number quoted here within this section will differ from those within the Aircraft Movements Section.

[1] - Winglets and sharklets are small aerodynamic surfaces mounted almost vertically at the wingtips. There is no difference between winglets and sharklets; the term sharklet is just the name used by Airbus for the winglets fitted to their aircraft.

Destinations

London Luton had the busiest year in the airport's 77 year history, making it the fastest growing major London airport in percentage terms in 2015. This significant growth comprised of increased capacity and new routes with established airlines and the arrival of four new airlines SunExpress, Iberia (Air Nostrum), La Compagnie and VLM.
The following diagram shows the destinations flown/on sale to and from London Luton in 2015. Our airlines fly to 118 destinations across 36 different countries. In total 20 new routes were launched from LLA in 2015.

Top 5 destinations by aircraft movements were:

1. Amsterdam
2. Budapest
3. Copenhagen
4. Geneva
5. Bucharest-Otopeni

New Routes 2015

Destination	Launch	Airline
Innsbruck, Austria	20-Dec-15	easyJet
Tel Aviv, Israel	3-Dec-15	Monarch
Ovda, Israel	3-Dec-15	Monarch
Chisinau, Moldova	27-Oct-15	Wizz Air
Iasi, Romania	25-Oct-15	Blue Air
Vienna, Austria	23-Oct-15	easyJet
Iasi, Romania	16-Sep-15	Wizz Air
Izmir, Turkey	11-Jul-15	SunExpress
Constanta, Romania	16-Jun-15	Wizz Air
Ohrid, Macedonia	15-Jun-15	Wizz Air

Destination	Launch	Airline
Bodrum, Turkey	17-May-15	easyJet
Split, Croatia	16-May-15	easyJet
Naples, Italy	1-May-15	Thomson
Essasouira, Morocco	1-May-15	easyJet
Waterford, Ireland	27-Apr-15	VLM Airlines
Porto, Portugal	26-Apr-15	easyJet
Antalya, Turkey	25-Apr-15	easyJet
Vigo, Spain	30-Mar-15	Air Nostrum
New York, USA	29-Mar-15	La Compagnie
Copenhagen, Denmark	26-Mar-15	Ryanair

Routes Ending 2015

Destination	Launch	Airline
Munich, Germany	1-Nov-15	Monarch

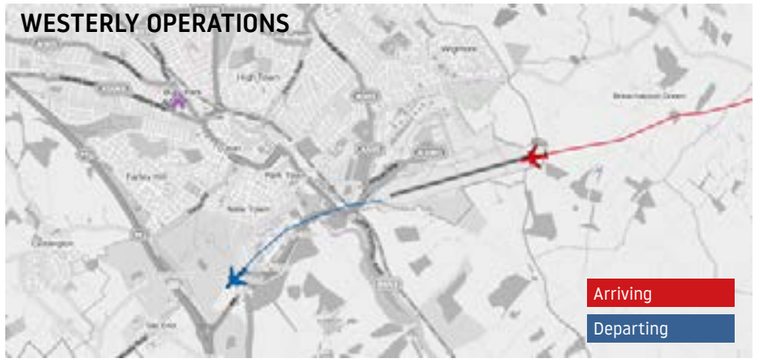
More information about our destinations can be found on the airport's website:
http://www.london-luton.co.uk/inside-lla/destination-map

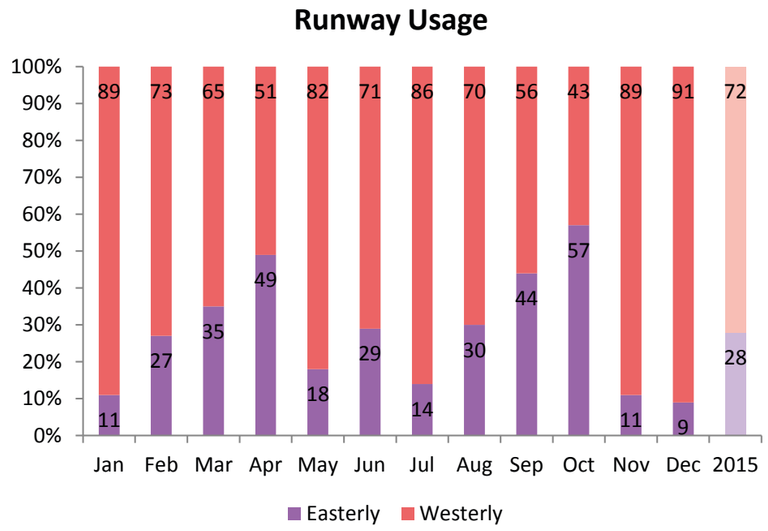
Runway usage

Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. South westerly and westerly winds prevail for much of the year, typically around 70 per cent of the time.

Wind speeds and directions recorded at higher altitudes can vary considerably from those recorded at ground level. The position of the wind is under constant review by NATS which is why the operation can change direction more than once in a day. However it is also not unusual for the runway to operate in the same direction for several weeks.

A monthly breakdown is shown, highlighting higher than average levels of easterly operations over the spring and autumn periods 2015, in contrast to prolonged and sustained spells of westerly operations over the winter and summer months of 2015.





Year	Easterly	Westerly
2015	**28%**	**72%**
2014	32%	68%
2013	36%	64%
2012	27%	73%
2011	28%	72%
Average	**30%**	**70%**

The runway split during 2015 was 28% easterly and 72% westerly (compared to 32% / 68% in 2014). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 30% easterly and 70% westerly.

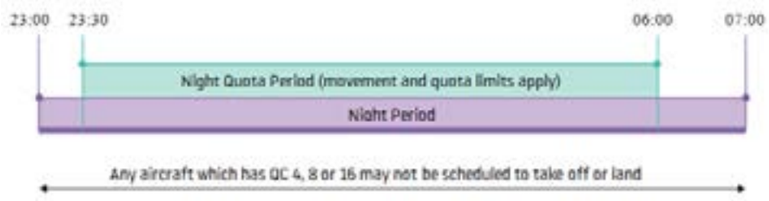
Night Flights

Night Flying Restrictions

As from 1st April 2015 London Luton airport introduced new night restrictions as part of the planning conditions.

These restrictions have been put in place to limit and mitigate noise disturbance from aircraft operating at night, to prohibit aircraft of certain types from operating, as well as limiting the number of occasions on which aircraft may take off or land.

The night flying restrictions contain a 12 month period aircraft movement limit and a 12 month period quota count limit. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft types.



The table overleaf records the QC bands identified by the certified noise levels, and gives some typical example aircraft, some of which operate from LLA.

The 'Night Quota Period'
The 'Night Quota Period' is from 23:30 to 06:00 hours local, during which period aircraft movements (take-off or landing) are restricted by a limit on the number of movements with noise quotas as an additional measure.

Aircraft are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce during specific certification tests conducted by the manufacturer. They are classified separately for both take off and landing. The points are then allocated to different aircraft types according to how noisy they are.

The 'Early Morning Shoulder Period'
The 'Early Morning Shoulder Period' is 06:00 to 07:00 hours local. During this period aircraft movements (take-off or landing) are restricted by a limit on the number of movements (the same as the Night Quota Period).

Aircraft movement and quota count limits (per 12 month period)

Condition 11(f) requires that for the Night Quota Period (2330 - 0600) the following limits shall not be exceeded:

- Total annual movements by aircraft per 12 month period shall be limited to 9,650;
- The total annual noise quota in any 12 month period shall be limited to 7,000.

Certificated noise level (EPNdB)	Typical aircraft	Quota Count
Greater than 101.9	Some B741/B742, AN124/AN225	QC 16
99 to 101.9	Some B744, MD8	QC 08
96 to 98.9	B732, MD10	QC 04
93 to 95.9	B772, A306, A333	QC 02
90 to 92.9	A320/A321, some B738, B752, B788	QC 01
87 to 89.9	A319/A320, some B734, B738, B788	QC 0.5
84 to 869.	A319/A320, GLEX, FA7X/F900/F2TH	QC 0.25
Less than 84	Challenger series (eg CL60), ATP, C525/C550	QC 0

Condition 11(h) requires that for the Early Morning Shoulder Period (0600 - 0700) the total annual movements by aircraft in any 12 month period shall be limited to 7,000.

The table below provides total aircraft annual movements and noise quota per 12 month period and compares those against the limits set by planning conditions.

	Night Quota Period (2330 - 0600)		Early Morning Shoulder (0600 - 0700)
	Movements Limited to 9,650	Quota Count Limited to 3,500	Movements Limited to 7,000
Jan 2015	348	128.25	232
Feb 2015	305	109.25	226
Mar 2015	357	128.00	293
Apr 2015	575	204.25	447
May 2015	723	245.00	487
Jun 2015	811	270.25	511
Jul 2015	786	289.25	521
Aug 2015	700	259.00	544
Sep 2015	772	280.50	523
Oct 2015	658	239.00	469
Nov 2015	413	162.75	269
Dec 2015	396	164.50	256
Total for preceding 12 months	**6,844**	**2,480.00**	**4,778**

There were no night time aircraft movements with a QC value of greater than 2 in 2015. Of the 133 QC 2 aircraft movements in 2015, 111 were departures by Airbus A300-600 aircraft.

Marginally Compliant Chapter 3 aircraft

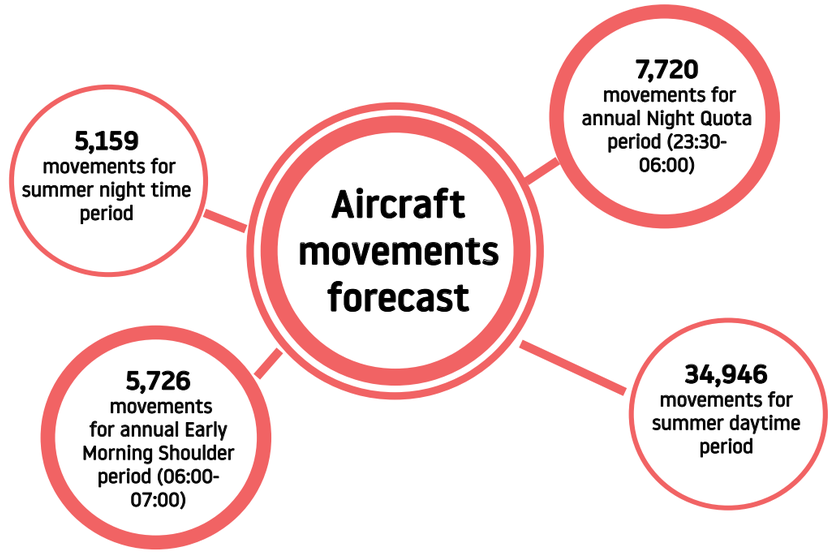
Taking the year as a whole, of the 115,279 movements where Chapter 3 categorisation is applicable, only 42 are known to be marginally compliant. These movements were all by a single aircraft, a Boeing 737-200. A further 40 aircraft movements were by aircraft with unknown classification. These comprised 7 different aircraft; an Antonov 12, an Antonov 72, two Boeing 767-200s, two Boeing 767-300s, and a Dassault Falcon 20.

Day/Night ratio of movements

There were 13,192 night movements during 2015 (compared to 12,598[1] for 2014, an increase of 5%), an average 36 movements per night (compared to 35 last year).
Arriving aircraft accounted for 56% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the airport at night, between 23:00 hrs and midnight. 61% of total night departures took off between 0600 - 0700 in the morning.
The average ratio of total aircraft movements during 2015 was 89% day / 11% night (in line with 88% day / 12% night in 2014).

2015	Day Movements (0700 - 2300)	Night Movements (2300 - 0700)		
	Day Movements	Night Quota Period (2330 - 0600)	Early Morning Shoulder (0600 - 0700)	Total Night Movements (2300 - 0700)
Departures	52,455	1,932	3,526	5,751
Arrivals	50,765	4,912	1,252	7,441
TOTAL	**103,220**	**6,844**	**4,778**	**13,192**

The figure below shows forecast aircraft movements for 2016, seperated into the daytime and night time periods.



[1] - The figures quoted for 2014 cover the revised night period that has been extended by one hour, between 2300hrs and 0700hrs, as opposed to a shorter night period that was previously used.

Departing Aircraft

All propeller-driven aircraft with Maximum Take Off Mass (MTOM) over 5,700kg and all jet aircraft leaving London Luton airport are required to follow specific departure routes known as Noise Preferential Routes (NPRs). These are established by consultation with the Safety and Airspace Regulatory Group (SARG) at the CAA and the London Luton airport Consultative Committee; they are designed to avoid flying over built-up areas wherever possible.

There are three Standard Instrument Departure (SID) routes for each runway – OLNEY, COMPTON and DETLING/ MATCH. On the 20th August 2015 LLA introduced Area Navigation (RNAV1) procedures for aircraft departing the airport along the westerly Match/Detling SIDs.

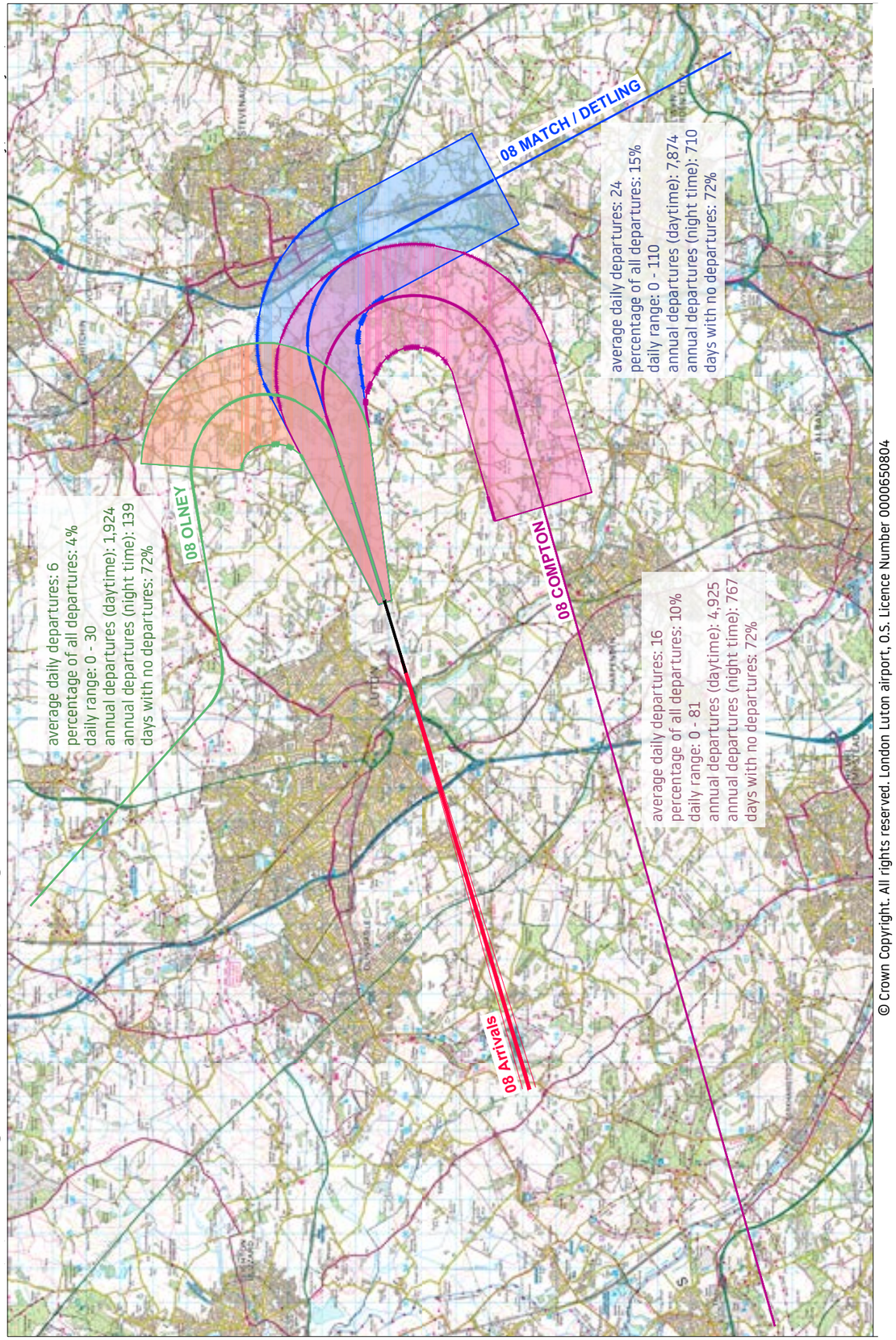
Associated with each NPR is a swathe of airspace extending 1.5km (1km for RNAV) each side of the NPR centre line, within which aircraft concentrate and are considered to be flying on track. Aircraft must follow the NPR controls applicable to the runway in use at that time.

In the UK, the obligations of Noise Preferential Routings for aircraft following conventional SIDs cease when a height of 3,000ft (between 07:00hrs to 23:00hrs local time) and 4,000ft (during night time, 23:00hrs to 07:00hrs local time) has been reached. The obligations of the RNAV1 NPR ceases when a height of 4,000ft has been reached at all times.

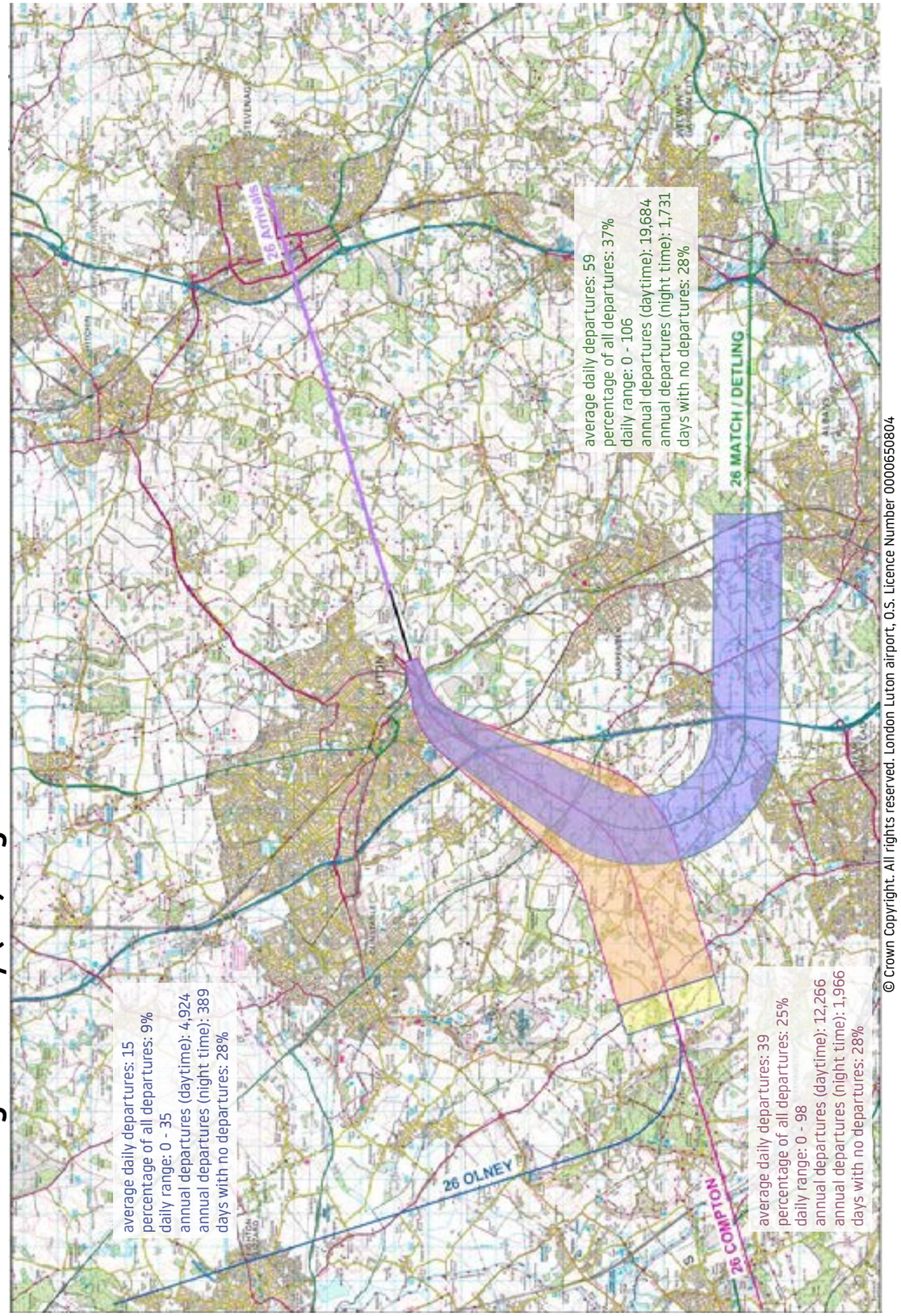
Once aircraft have reached the NPR restricted altitude they will be considered no longer on the Noise Preferential Route. At that stage the aircraft may be directed by Air Traffic Controllers onto a different heading in order to integrate with the overall flow of traffic, this is known as vectoring. However on RNAV1 Match/Detling SID should not be vectored before the Railway line between St Albans and Harpenden, unless this is required for safe separation from other aircraft or for other safety issues (such as avoiding adverse weather).

Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton airport with detailed information about each departure route.

Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



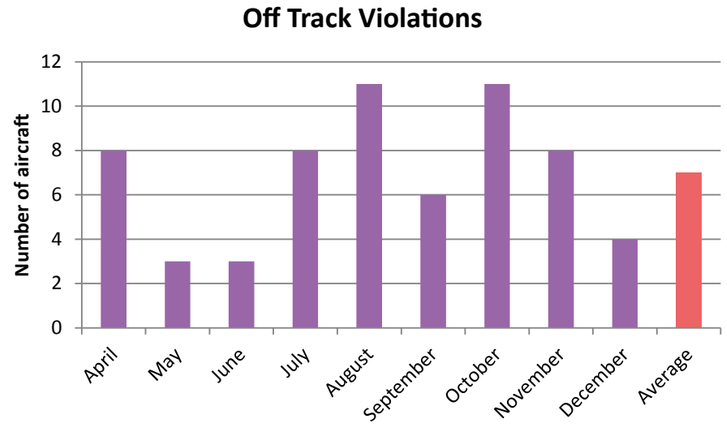
On Track performance

On the 1st April 2015 London Luton airport implemented a Track Violation Penalty System as part of the noise related planning conditions. Using the Aircraft Noise and Track Monitoring System the airport's specialist flight operations team evaluates the radar tracks and investigate them with required input from ATC and airlines. A departure is deemed to have complied with the Noise Preferential Routing if the portion of flight below the appropriate vectoring altitude is flown wholly within the Lateral Swathe (LS). Where the aircraft is clearly flying outside the LS, the aircraft is identified as causing a "possible" track violation and is subject to a nominal fine.

As always, safety prevails and there may be cases which involve vectoring an aircraft sooner than at the NPR height restriction. If ATC identifies any valid justification that could explain the deviation from the track, then the operator causing it will be exempt from the fine. Valid justifications include:

- Safety or operational reasons, i.e ATC vectoring
- Weather avoidance due to thunderstorm activity (as instructed by ATC)
- Emergencies

The diagram below shows off-track violations over the previous 9 month period. The on track performance for this period was 99.51%



The breakdown of the violations by aircraft type is shown in the tables below

A/C Type	№ Violations
ATP	7
CL60	6
GLF5	5
GLEX	5
H25B	4
C550	3
CL30	3
GLF4	3
F900	2
C680	2
C25B	2
GL5T	2
C56X	2
LJ60	2
FA50	2

A/C Type	№ Violations
C525	1
C25A	1
GLF6	1
B462	1
FA50	1
B737	1
BBJ3	1
EA50	1
A319	1
B732	1
C510	1
A320	1
TOTAL	**62**

£52,000, the total of all collected fines transferred to Community Trust Fund

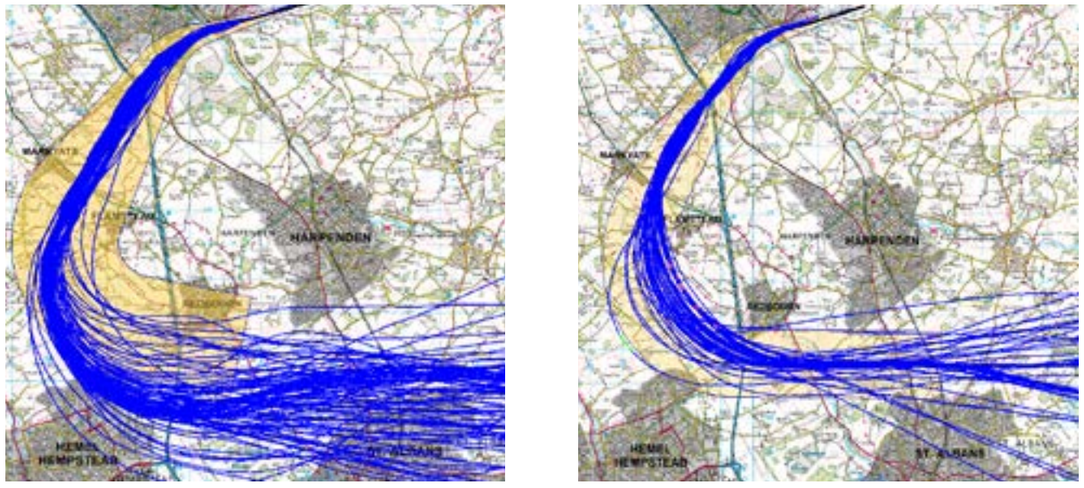
Area Navigation (RNAV) procedures

Following on from a successful consultation, in which over 90% of feedback received from over 1400 responses was in favour of the new route, RNAV1 flight procedures were introduced on our westerly Match/Detling departure route on the 20th August 2015. This was designed to keep aircraft much closer to the centreline of the route using modern GPS procedures as opposed to older ground based radio beacons. This also allowed a reduction in the width of the corridor from 3km to 2km and means the number of people directly overflown has been reduced from approximately 13,000 to 3,000 people.

After implementation the Flight Operations Department at London Luton airport closely monitored the route. For the majority of flights we saw RNAV working as predicted which had positive effects for our local communities. However, some aircraft were still vectored by Air Traffic Control earlier than expected which resulted in some overflights for the north of St Albans. The Flight Operations team have been in close contact with Air Traffic Control in Swanwick regarding this issue, sending daily tracks of where aircraft had been vectored. This has resulted in some improvement. Work will be on-going to improve this although there are occasions when vectoring is required, for safety reasons or to avoid bad weather.

In November 2015, the Flight Operations team noticed that aircraft had been following a tighter curve of the RNAV route and were therefore closer to Flamstead. Through investigation and communication with pilots it was discovered that this is due to strong south-westerly winds during that time. Winds were sometimes between 45-50knots at aerodrome level and therefore at 3000-4000ft these winds are even stronger. Unfortunately this is not something which can be avoided with the RNAV procedures or conventional procedures.

The final step of the Airspace Change Process is the publication of a Post-Implementation Review, this will be published by the CAA a year after implementation.



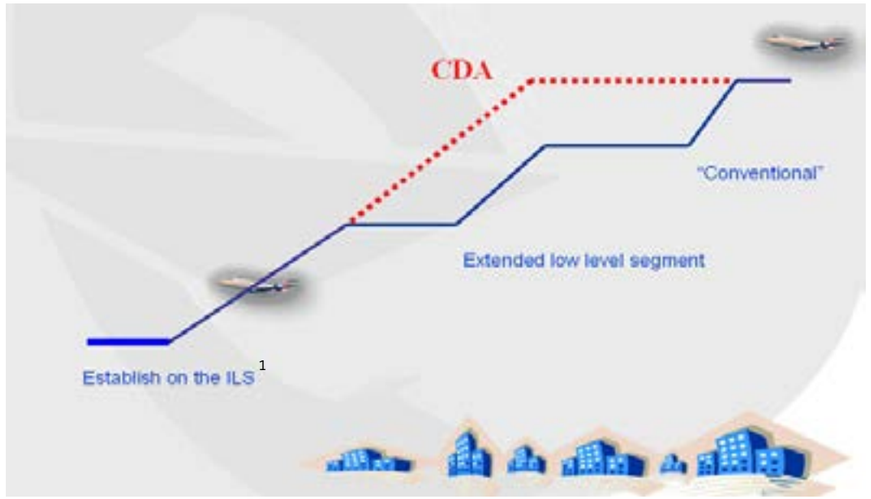
Aircraft using conventional procedures and aircraft using RNAV procedures (above)

Required Navigation Performance (RNP) procedures

LLA is currently in the process of improving track adherence further on the westerly Match/Detling routes by introducing the latest flight procedural technology (known as RNP). The Flight Operations Department started the Airspace Change Process in 2015 and have begun the design process. The team is hoping to conduct live flight trials in late 2016, with a consultation during 2017.
Following this work, the next steps are to adopt new procedures on the remainder of our departure routes and also our arrival routes.

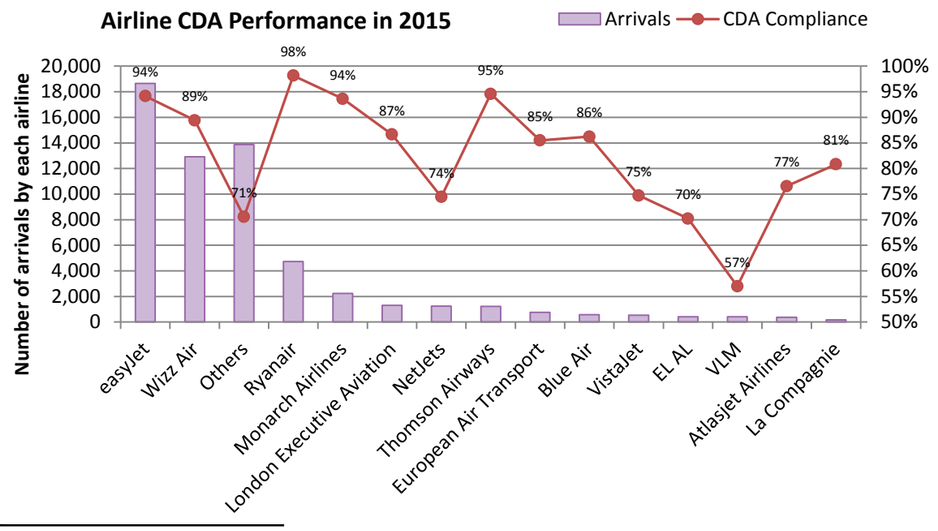
Arriving Aircraft

Although there are no set routes for arriving aircraft there are long established procedures to mitigate the disturbance that can be caused on approach to the airfield. One of the most successful measures is a noise mitigation procedure called Continuous Descent Approach (CDA).



The conventional approach involves descending in steps using engine thrust to level off. In a Continuous Descent Approach, or CDA, an aircraft stays higher for longer and reduces periods of prolonged level flight at lower altitudes. When it's near the airport the pilot, with low power engines, continuously descends straight to the runway where they complete the landing in the traditional manner. With CDA planes burn less fuel and therefore produce less emissions, but most importantly it reduces the noise by avoiding the engine thrust required for level flight.

The overall CDA achievement was 87% with several major LLA operators achieving higher performance – easyJet, Ryanair, Monarch and Thomson Airways. The chart compares the level of CDA performance by our main airline operators.



[1] - An Instrument Landing System (ILS) is a ground-based instrument approach system that provides precision lateral and vertical guidance to an aircraft approaching and landing on a runway, using a combination of radio signals and, in many cases, high-intensity lighting arrays to enable a safe landing during instrument meteorological conditions (IMC).

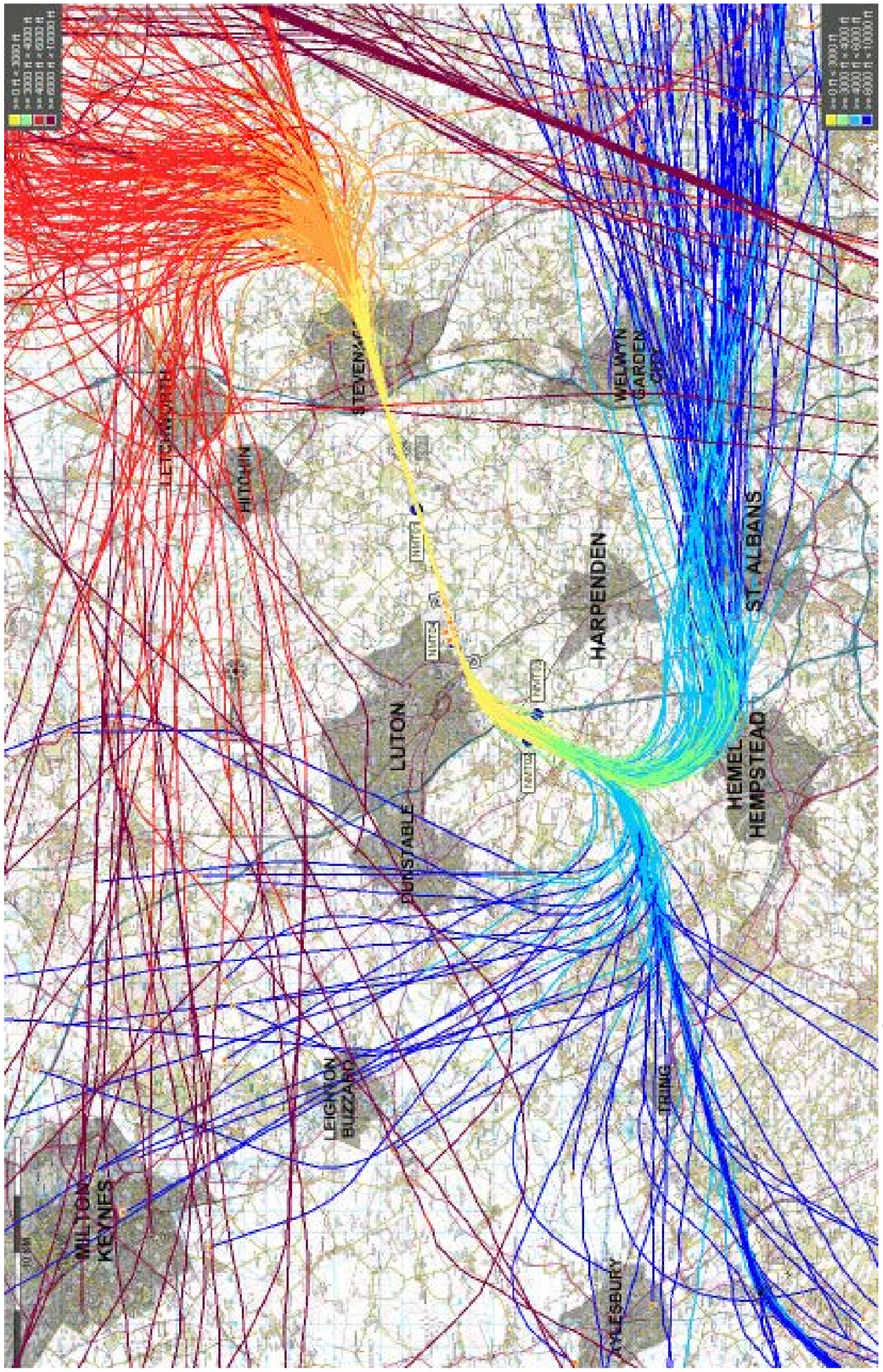
Departure and arrival flight tracks

Maps overleaf display typical 24 hour periods of both westerly and easterly operations, with arriving traffic in red and with departing aircraft tracks in blue. The colour coding from yellow to brown and from yellow to dark blue represents different altitude bands up to 10,000ft above mean sea level.

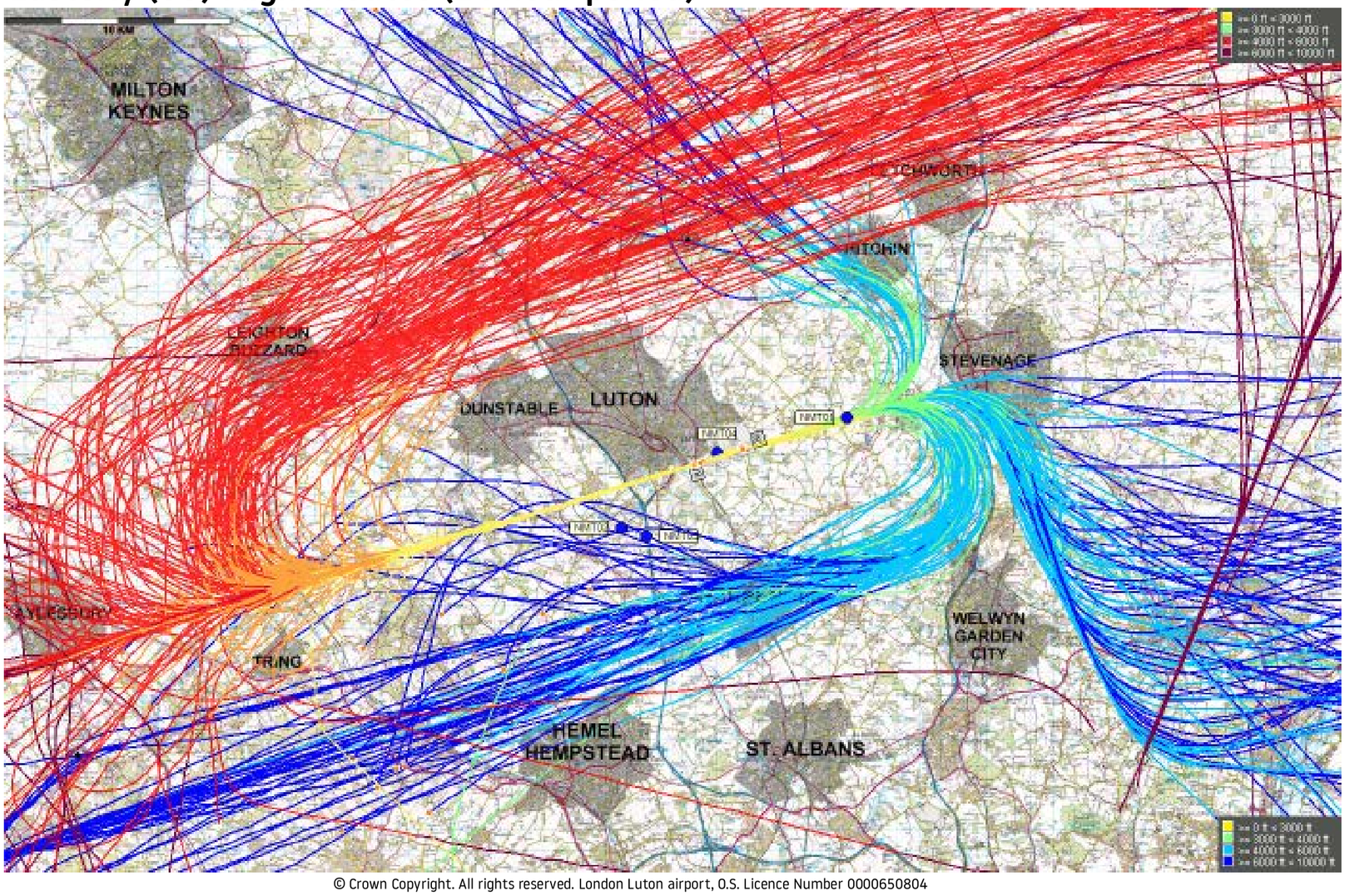
The last two maps display aircraft track density plots for the summer period 16th June - 15th September 2015. A track density plot is a map which displays the pattern of aircraft flight track passing over the region around the airport during a specific period. The system analyses the number of flights passing over each grid element of an array. The colour coding from purple to red represents the range 1 to over 147 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element was less than 1 flight. The red areas represent locations where operations are more densely concentrated.

It should be noted that London Luton airport's aircraft movements integrate with traffic travelling to and from other airports in the region, as the south east area in the UK is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton airport and overflights from other airports have been omitted for clarity.

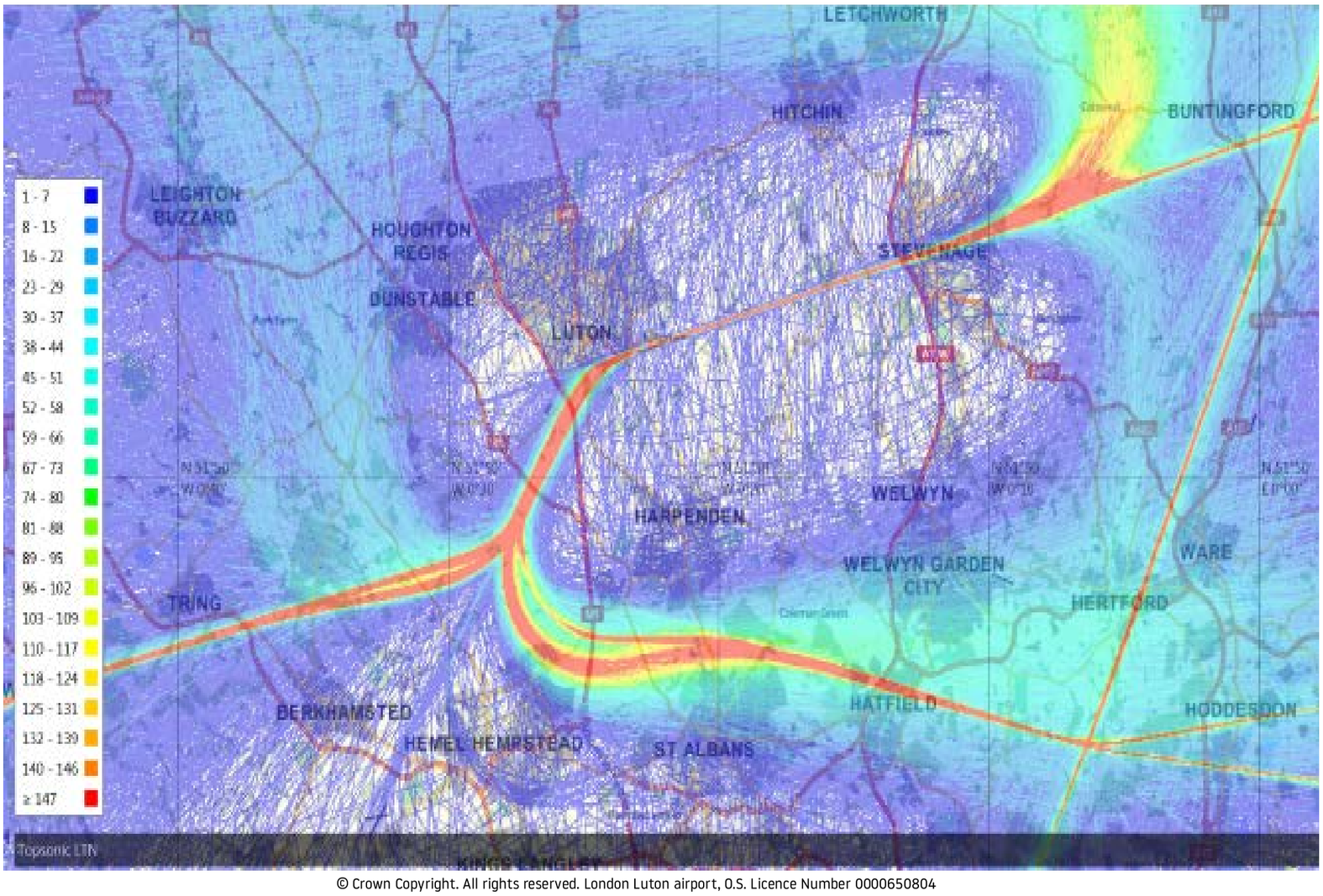
Westerly (26) Flight Routes (24 hour period)

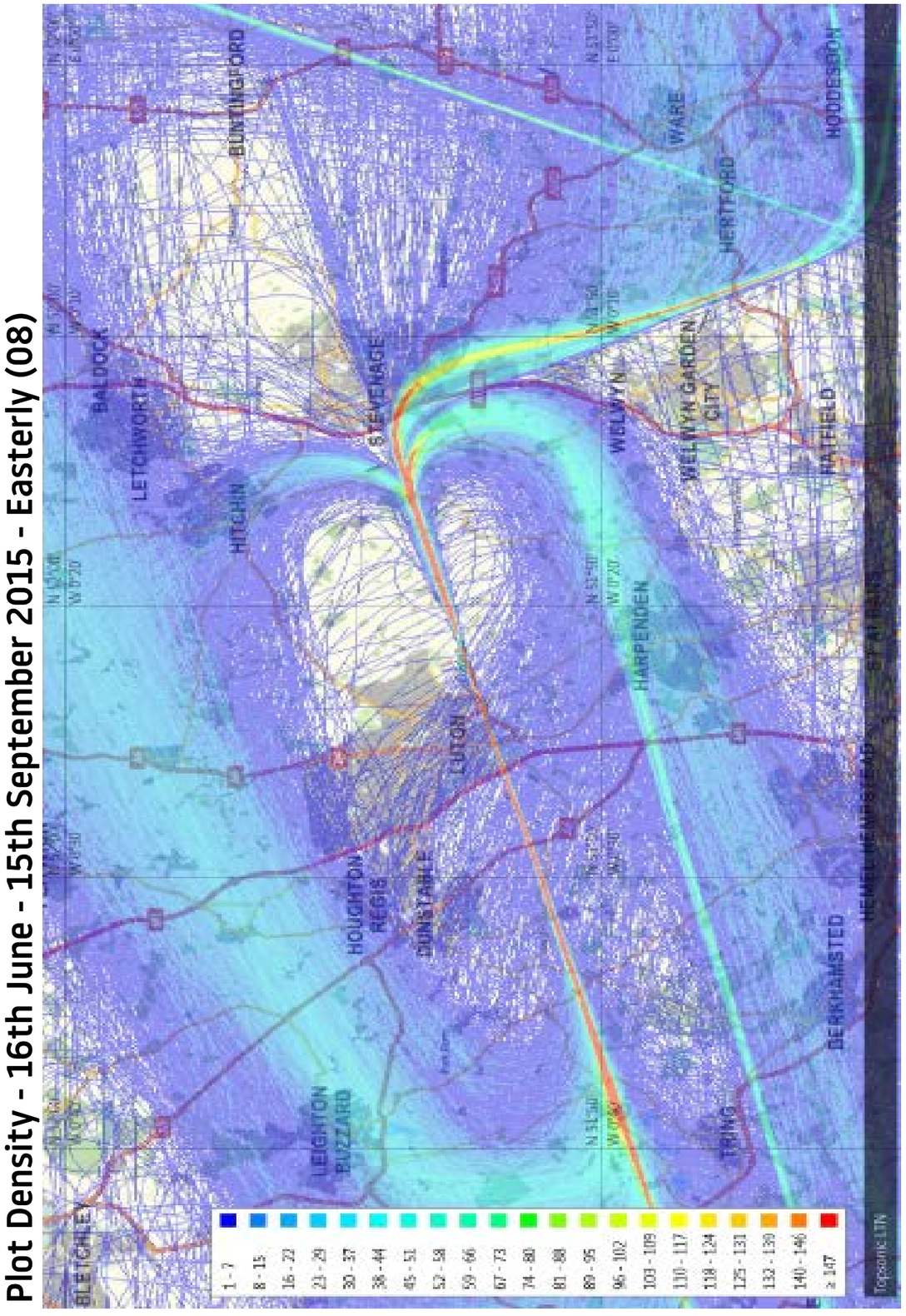


Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2015 - Westerly (26)





Aircraft Noise

Noise is generally defined as unwanted sound. Although it is recognised that noise perception is very subjective, there are a number of internationally recognised terms to describe and measure aircraft noise. Most airport related noise is created by aircraft approaching, taking-off and taxiing to and from the runway. The management and control of noise continues to be a major element of the airport's policy to constantly seek to minimise and mitigate our environmental impact.

How is noise monitored?

People who live close to airports or under flight paths can often feel strongly about the disturbance to their lives from noise. Effects of noise include general distraction, speech interference and sleep disturbance which can lead to annoyance and complaints.

At LLA monitoring is provided by the Topsonic Aircraft Noise and Track Monitoring System. This system is designed to monitor air traffic within a radius around the airport (set at around 25 miles), and generally up to an altitude of 12,000ft. It downloads noise data from three fixed noise monitors located 6.5km from the aircraft start of roll, at either end of the runway within the neighbouring communities. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area.
New features and system enhancements continue to improve the functionality and capabilities available to the Flight Operations Department.

TraVis, an online flight-tracking tool enables the general public to see for themselves the actual flown tracks of LLA aircraft departures and arrivals. This can be viewed online at the following link on the airport website.
http://travisltn.topsonic.aero/

Noise violation levels

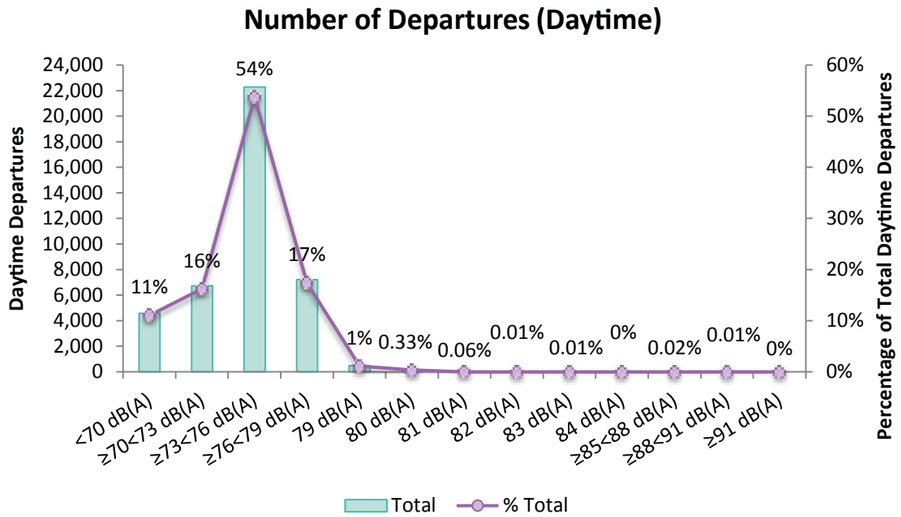
During the 1st Quarter 2015 the day and night Noise Violation Limits (NVLs) were still 94 dB(A) and 82 dB(A) respectively. However, as from 1st April 2015 a progressive reduction in the daytime (0700-2300) NVL was implemented, as well as a voluntary reduction in the night-time (2300-0700) NVL. These were set to 82 dB(A) and 80 dB(A) respectively. The limits encourage airlines to operate modern and quieter aircraft types.

The following table identifies daytime and night-time noise levels correlated to departing aircraft at the fixed noise monitoring terminals.
(Any aircraft exceeding the Daytime Noise Violation Limit of 82dB(A), between 07:00 hrs and 23:00 hrs and the Night-time Noise Violation Limit of 80dB(A), between 23:00 ana 07:00, is fined accordingly).

	Number of Departures													Total
db (A)	<70	>=70 <73	>=73 <76	>=76 <79	79	80	81	82	83	84	>=85 <88	>=88 <91	>=91	
Daytime	4,580	6724	22,284	7,215	467	138	26	5	5	2	9	4	0	**41,459**
Night-time	563	772	2,285	1,082	88	28	7	2	2	0	0	0	0	**4,829**

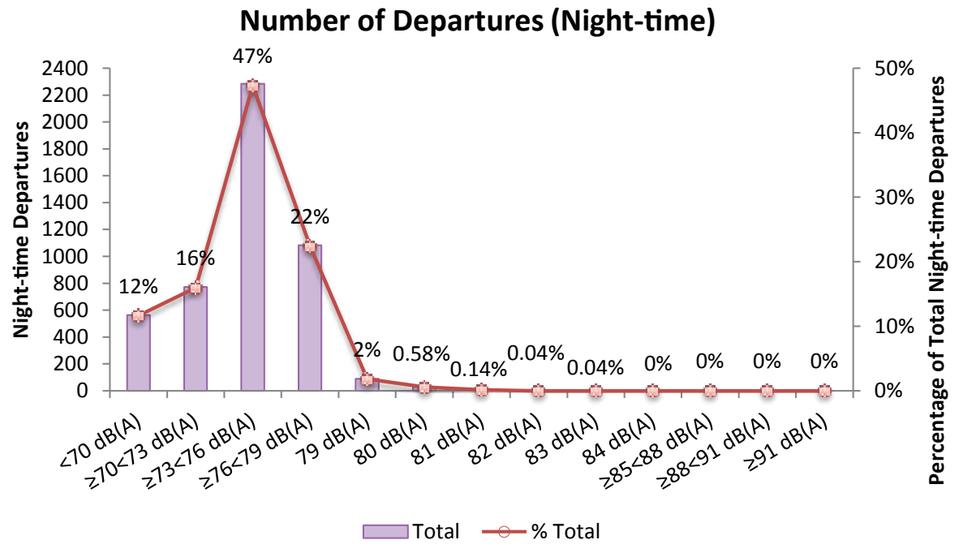
During the daytime 98% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 81% registering below 76dB(A). Throughout the year 656 correlated daytime departures (2%) registered maximum noise levels above 79dB(A).

There were 20 correlated departing aircraft which recorded a maxiumum noise level greater than 82dB, 5 of these instances were recorded before 1st April 2015 and not subject to the new NVL's, therefore there were only 15 daytime noise violations.



During the night 97% of correlated departures recorded maximum noise levels below 79dB(A), with 75% below 76dB(A). During the year 127 correlated night departures (3%) registered maximum noise levels above 79dB(A).

There were 11 correlated departing aircraft which recorded a maxiumum noise level greater than 80dB,. However, 2 of these instances were recorded before 1st April 2015 and not subject to the new NVL's, therefore there were only 9 night-time noise violations.



Noise violations during 2015

There were 15 violations of the daytime noise level in 2015, and a total of 9 violations of the 80dB(A) night noise violation level (details below), compared to four night noise violations in 2014.

	Date / Time (Local)	Aircraft Type	Noise Level	Penalty
Daytime	09/04/2015	Boeing 737-200	85dB (A)	£100
	18/04/2015	Boeing 737-200	85dB (A)	£100
	26/05/2015	MD-83	83dB (A)	£100
	15/06/2015	Boeing 737-200	89dB (A)	£500
	02/07/2015	Boeing 737-200	86dB (A)	£500
	16/07/2015	Boeing 737-200	89dB (A)	£500
	18/07/2015	Boeing 737-200	84dB (A)	£100
	30/08/2015	Boeing 737-200	88dB (A)	£500
	30/08/2015	Dassault Falcon 900	84dB (A)	£100
	07/09/2015	Gulfstream III	85dB (A)	£100
	10/09/2015	Airbus A320	85dB (A)	£100
	23/09/2015	Antonov 12	83dB (A)	£100
	27/11/2015	Boeing 737-200	85dB (A)	£100
	19/10/2015	Boeing 737-200	86dB (A)	£500
	19/12/2015	Boeing 737-200	83dB (A)	£100
Night-time	13/04/2015	Boeing 737-400	81dB (A)	£100
	05/06/2015	Boeing 737-800	83dB (A)	£100
	05/06/2015	Boeing 737-800	82dB (A)	£100
	07/06/2015	Boeing 737-800	83dB (A)	£100
	20/06/2015	Boeing 737-400	81dB (A)	£100
	24/06/2015	Dassault Falcon 900	81dB (A)	£100
	04/09/2015	Boeing 737-800	81dB (A)	£100
	02/12/2015	Boeing 737-200	81dB (A)	£100
	18/12/2015	Airbus A306	81dB (A)	£100

All fines are passed to the London Luton airport Community Trust Fund, further details of which can be found at
http://www.london-lutoninthecommunity.co.uk/content/1/3/community-trust-fund.html

Noise Contours

Since 1989 the preferred measure of aircraft noise, recognised by UK Government, has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700-2300 for an average day between the 16th June and 15th September.

When planning permission was given in 2014 for development at London Luton Airport a number of conditions were imposed. Condition 12 requires that daytime and night-time contours are produced on an annual basis for the previous summer period based on actual aircraft movement data and for the following summer period based on predicted aircraft movement data. The areas of these contours are to be compared to the area limits contained in Condition 12. Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the airport and also the departure routes flown. Changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, determined by the prevailing wind direction.

Annual noise contours summer 2015

The table below shows the annual noise contours for summer 2015 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM software (the Integrated Noise Model) version 7.0d which is the method used by many other airports in the UK.

$L_{Aeq, 16\ hour}$ Daytime	Contour Area (km²)					
	1984	1999	2014	2015	Difference 2014-2015	2016 (forecast)
>72	1.63	1.5	0.9	0.9	0.0	1.0
>69	2.80	2.5	1.4	1.5	+0.1	1.7
>66	4.86	4.4	2.7	2.5	-0.2	2.9
>63	9.10	7.3	5.5	4.9	-0.6	5.7
>60	17.18	11.8	9.3	9.0	-0.3	10.1
>57	**31.52**	**19.6**	**15.8**	**17.2**	**+1.4**	**18.8**

Considering the summer 2015 daytime noise contour there is an increase in area of approximately 9% when comparing the 2015 contour with the 2014 driven by a 15% increase in movements. Due to the updated departure profiles, based on information provided by easyJet, used for the 2015 contours the higher value contours have decreased in area between 60 and 66 dB, despite the increase in movement numbers. The daytime movements increased from 25,616 in 2014 to 29,679 in 2015. The 2016 contours are forecast to grow by 9% to 16% compared to the 2015 contour, largely due to a forecast 11% increase in movement numbers.

$L_{Aeq, 8\ hour}$ Night-time	Contour Area (km²)					
	1984	1999	2014	2015	Difference 2014-2015	2016 (forecast)
>72	0.79	1.1	0.4	0.4	0.0	0.4
>69	1.39	1.8	0.6	0.6	0.0	0.7
>66	2.42	3.0	1.0	1.0	0.0	1.1
>63	4.01	5.2	1.7	1.7	0.0	1.7
>60	7.06	8.3	3.4	3.0	-0.4	3.1
>57	13.05	13.2	6.5	5.7	-0.8	5.8
>54	24.48	21.6	11.3	10.8	-0.5	11.0
>51	44.92	36.0	20.0	20.2	+0.2	20.8
>48	**85.04**	**60.6**	**35.2**	**35.3**	**+0.1**	**36.3**

Considering the summer 2015 night-time noise contour there is very slight increase in the area when comparing the 2015 contour with 2014 contour, while the higher value contours, 54 to 60 dB have decreased in area. The night-time movements decreased slightly from 4,490 to 4,376.

The summer 2016 night-time contour is forecast to grow by 3% compared to the 2015 contour, despite almost no change in movement numbers. This is attributed to the increase in movements by the main passenger types, in particular the Boeing 737-800.

The 2015 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented. The resulting summer 2016 forecast daytime contour has an area of 18.8 km², below the planning limit of 19.4 km², and the summer 2016 forecast night-time contour has an area of 36.3 km², below the planning limit of 37.2 km².

Contour population counts

The population counts for this year were calculated using the CACI Ltd, 2014 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted.

$L_{Aeq, 16\ hour}$ Daytime	2014		2015	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	500	1,300	250	700
>60	1,300	3,600	750	2,200
>57	**2,900**	**7,300**	**2,600**	**7,100**

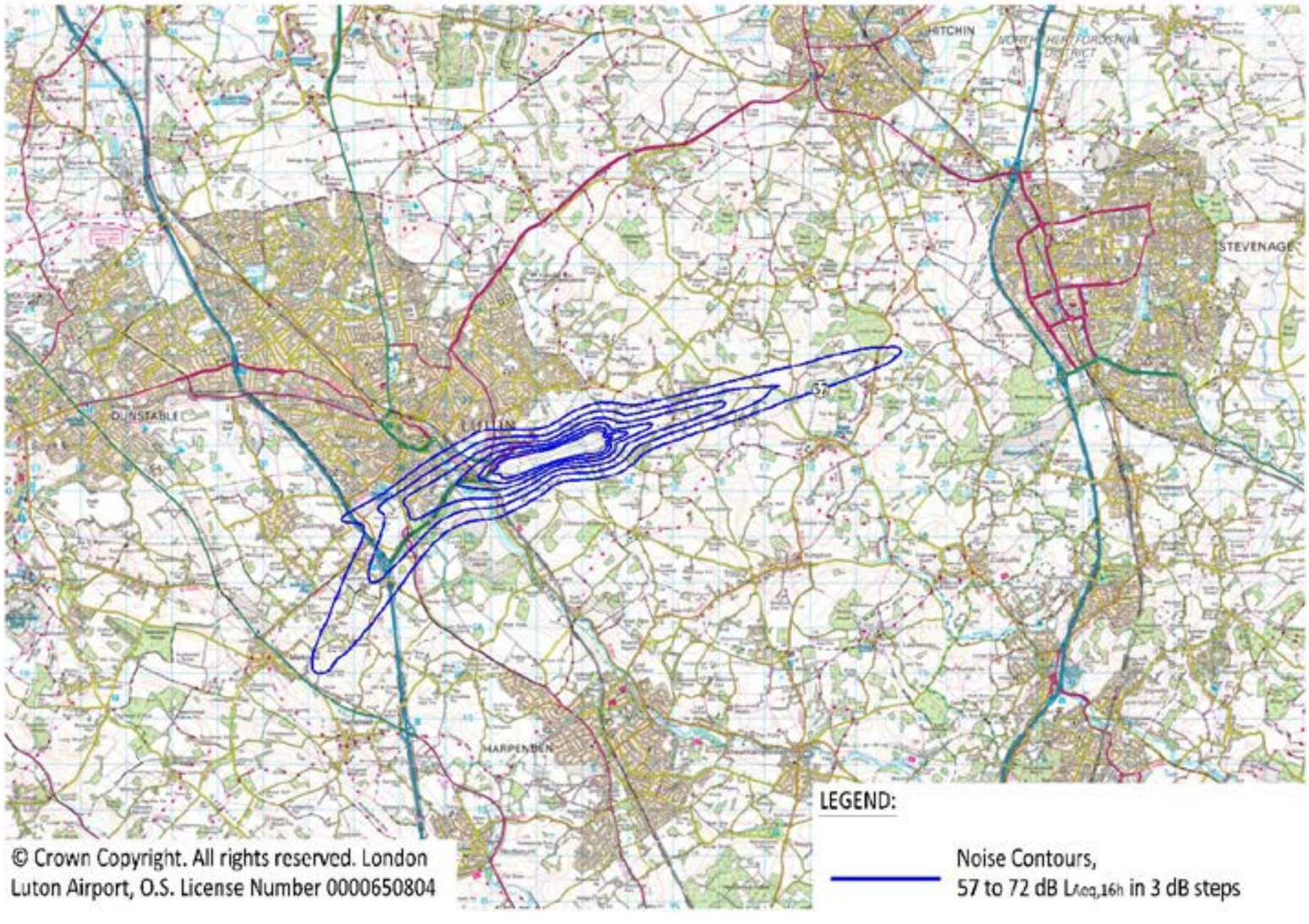
When looking at the daytime results there are generally decreases in the number of dwellings and the population within the contours when comparing 2015 with 2014. For the summer 2015 daytime contour the decrease in population is around 2% for the higher value contours the decrease is significantly greater. The summer 2015 daytime contour also contains fewer dwellings and a lower population despite an increase in overall area, this is due to the change in shape of the contour, with the areas where noise has increased being sparsely populated and the areas where there has been a decrease in noise being more densely populated.

$L_{Aeq, 8\ hour}$ Night-time	2014		2015	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	150	400	0	0
>57	650	1,800	400	1,200
>54	1,600	4,400	1,050	3,000
>51	3,700	9,100	2,850	7,700
>48	**6,600**	**16,000**	**5,550**	**14,700**

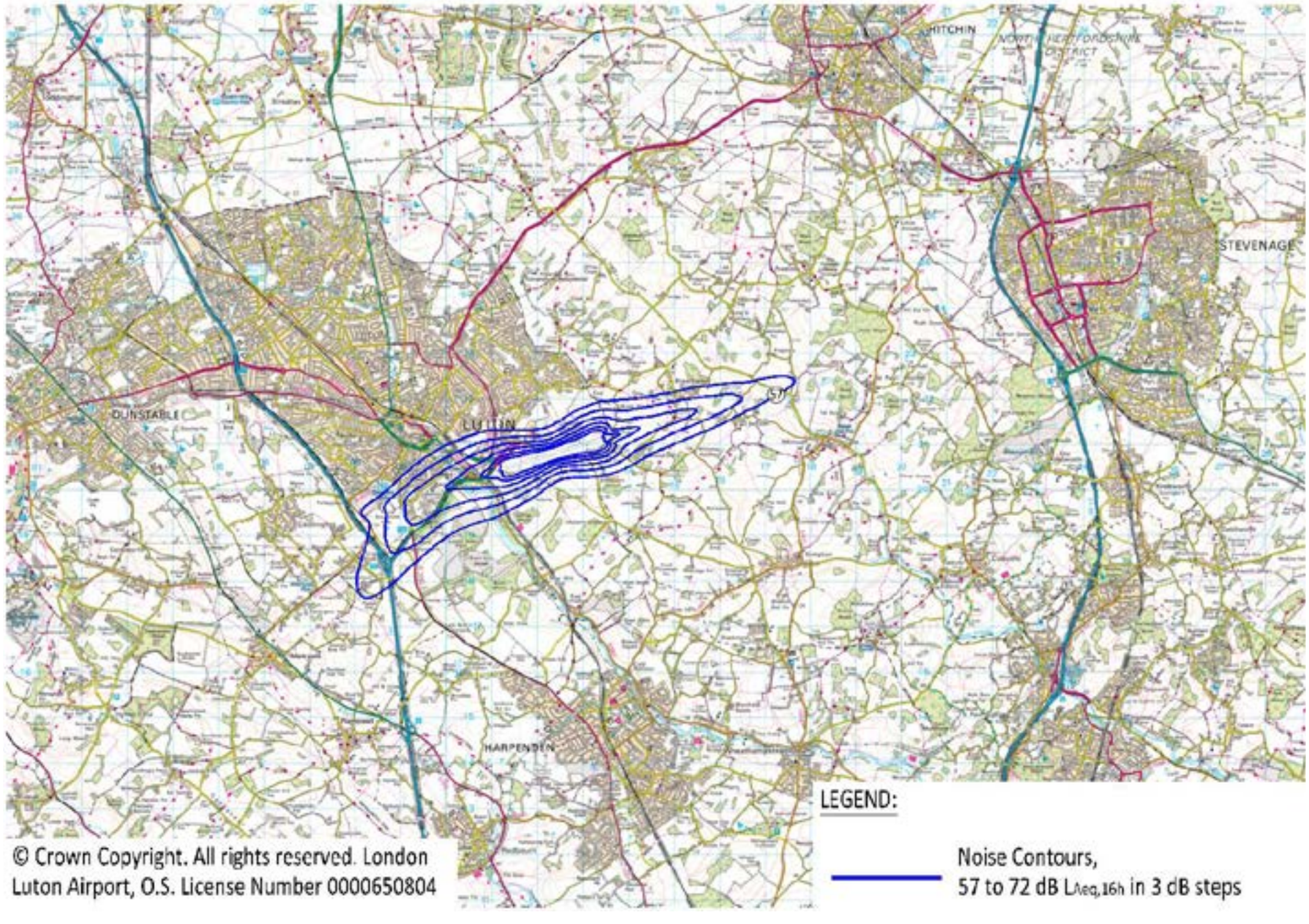
For the night-time contours there are consistent decreases in the numbers of dwellings and the population within the contours when comparing 2015 with 2014. For the summer 2015 night-time contour the decrease in population is around 8%. As for the daytime contours the reductions are due the changed shape of the contour due to the new departure route profiles.

Please note in the above tables the results for households and resident populations are cumulative.

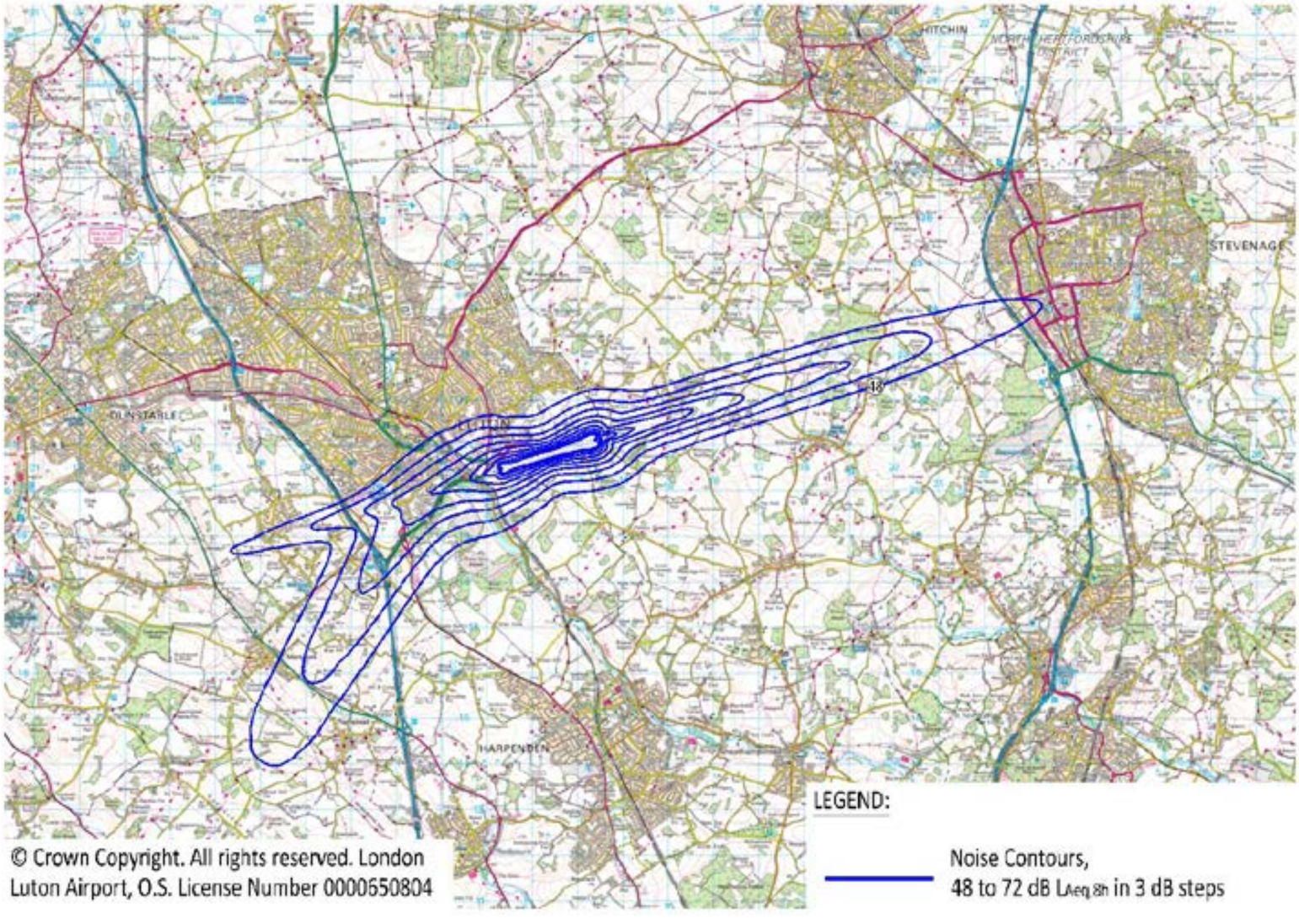
Annual Day Noise Contours Summer 2015



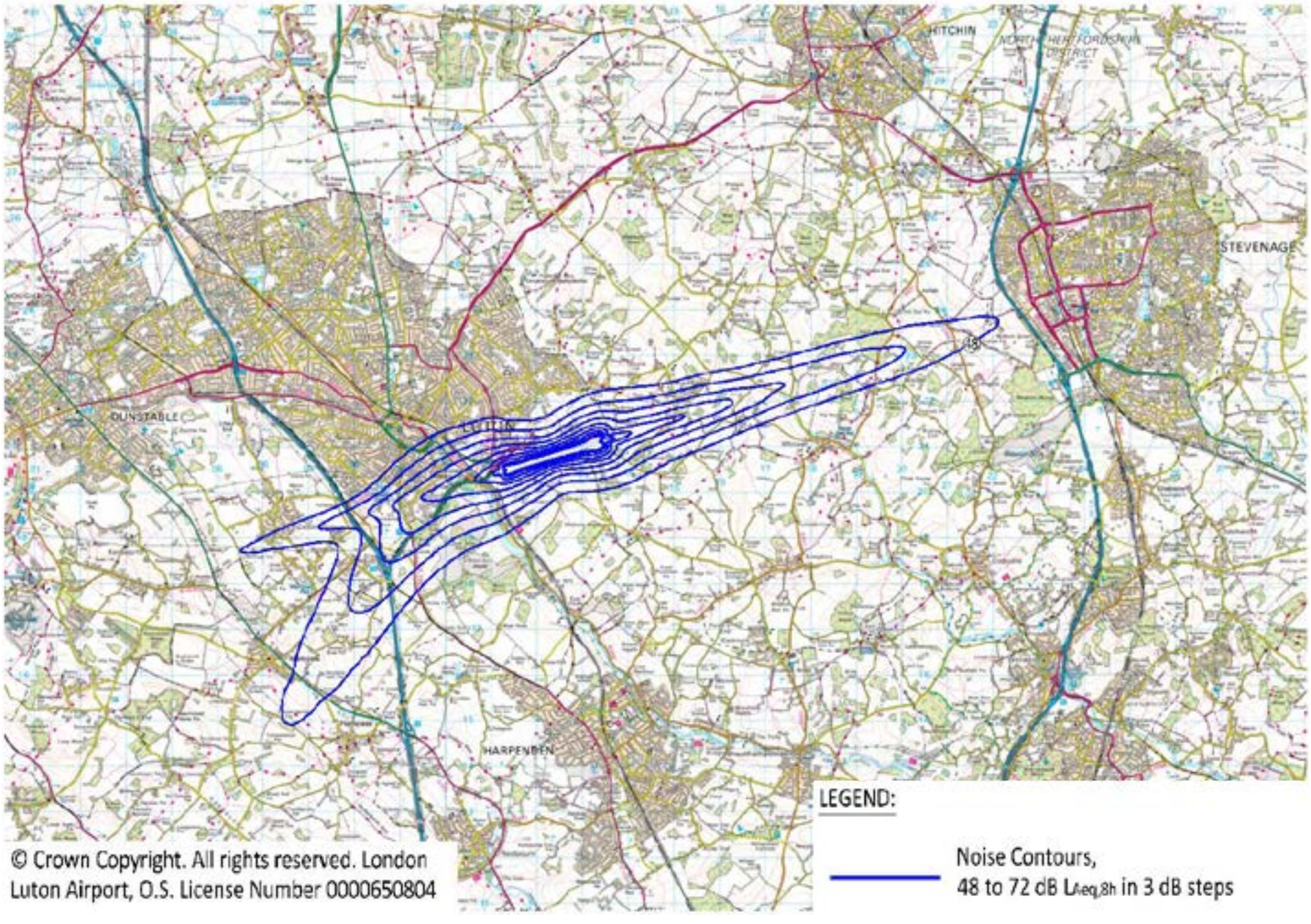
Annual Day Noise Contours Summer 2014



Annual Night Noise Contours Summer 2015



Annual Night Noise Contours Summer 2014



Annual Noise Contours 2015

The annual Lden noise contours for 2015 have been produced in accordance with London Luton airport's Noise Action Plan. The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Compared to annual summer 2015 noise contours Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2015, with a 10dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2015.

Annual Lden Noise Contour Results

Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2014	2015	2014	2015	2014	2015
>75	0.7	0.8	0	0	0	0
>70	1.6	1.7	0	0	0	0
>65	5.3	4.7	1,100	500	400	200
>60	13.1	13.6	5,600	4,700	1,950	1,700
>55	**33.6**	**35.7**	**16,400**	**14,800**	**6,150**	**5,550**

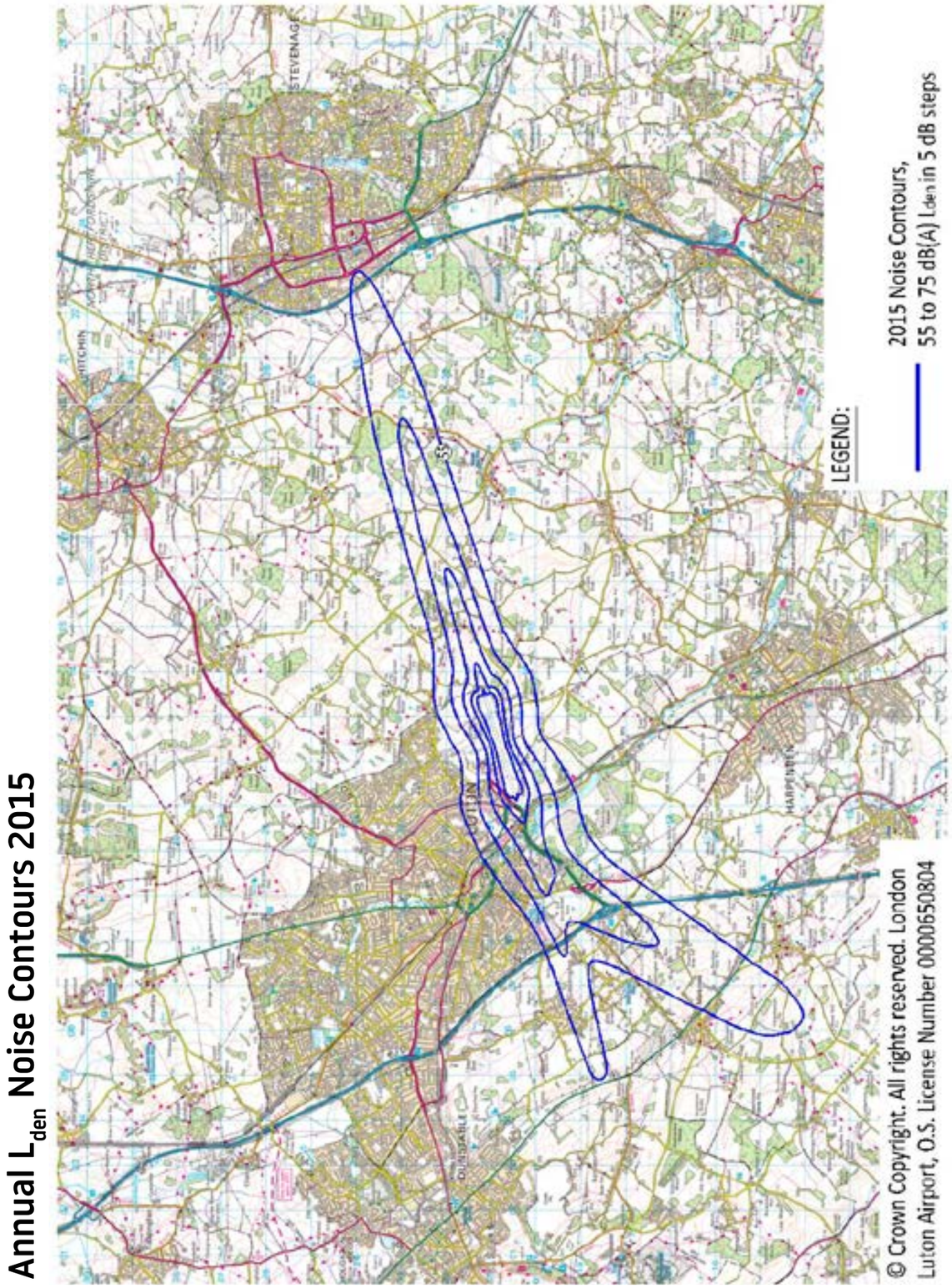
Annual Lnight Noise Contour Results

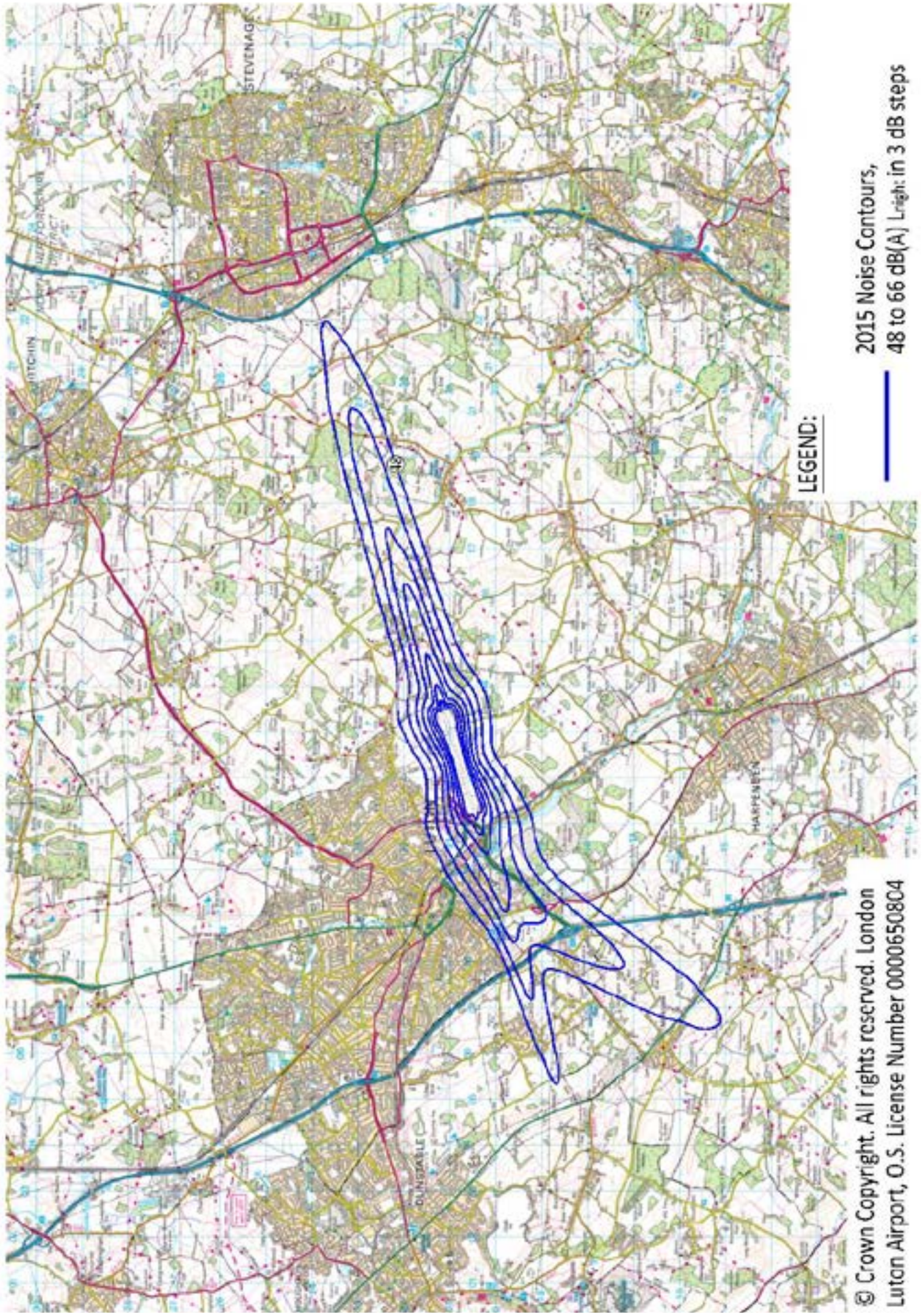
Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2014	2015	2014	2015	2014	2015
>66	0.8	0.8	0	0	0	0
>63	1.3	1.3	0	0	0	0
>60	2.3	2.2	0	0	0	0
>57	4.7	4.3	800	400	350	150
>54	8.3	7.8	2,500	2,000	900	700
>51	14.9	15.0	6,300	5,200	2,250	1,850
>48	**25.7**	**27.1**	**12,700**	**10,900**	**4,750**	**4,100**

The population and dwellings within all the contours has decreased, despite in some cases increasing areas. The contours have narrowed at locations close to the airport, reducing the area of southern Luton contained within the contours. As this area is more densely populated the reduction in area here more than outweighs increases in other more rural areas. This narrowing of the contours is due to the modified departure profiles.

[1] - Population counts rounded to nearest 100

[2] - Dwelling counts rounded to nearest 50





Annual L_{night} Noise Contours 2015

Correspondence and Complaints

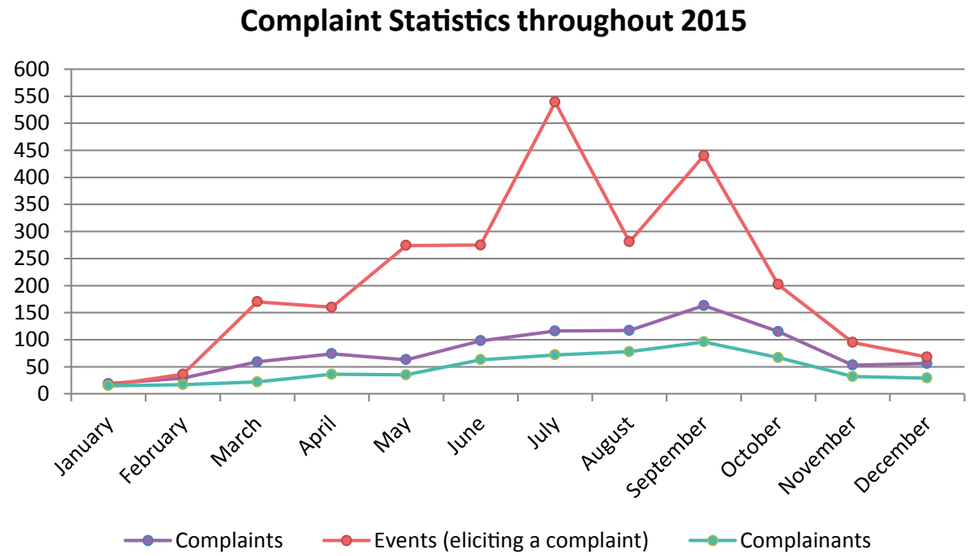
We aim to investigate, log and respond to all correspondence in a timely and systematic manner, preferably within 10 working days. Where this is not possible an acknowledgement is sent by post within 5 working days to those who contact us. E-mail correspondence will automatically receive an acknowledgement by return.

Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

Total complaints relating to LLA aircraft operations

	2014	2015
Total No. of Complaints relating to LLA aircraft operations	**1,146**	**960**
No. of Complainants	**457**	**355**
No. of Events (eliciting a complaint)	**2,836 (1,200*)**	**2,552 (1,098**)**
Average No. of Complaints per Complainant	2.5	2.7
Average No. of Events per Complainant	6.2 (2.6*)	7.2 (3.1**)
Average No. of Events per Complaint	2.5 (1.0*)	2.7 (1.1**)
No. of Aircraft Movements per Complaint	91	121
No. of Aircraft Movements per Event	36 (87*)	45.6 (106**)

During 2015 a total of 960 complaints (on average 3 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 1,146 in 2014. The figure below shows the complaints statistics throughout 2015. More complaints were received in the summer months, correlating with an increase in aircraft activity.



* - Figures excluding 1,636 events reported by three individuals, one resident in Harpenden, one resident in Kensworth and one resident of St Albans

** - Figures excluding 1,454 events reported by two individuals, one resident in Kensworth and one resident in St Albans

355 Individuals reported concerns to the Flight Operations Team during 2015.

231 Individuals **(65%)** contacted the airport only once during 2015.

158 Individuals **(45%)** reported concerns for the first time

During 2015, 1162 events were reported by one individual in St Albans but, in agreement with the LLACC, these events are no longer included in statistics although a total of 92 complaints from this complainant, reporting general disturbance and frequency (both day and night), have been incorporated in all statistics.

960 Complaints relating to LLA aircraft operations

52 Complaints not attributable to LLA traffic, including 7 Complaints relating to non-LLA helicopters operating to/from other airfields

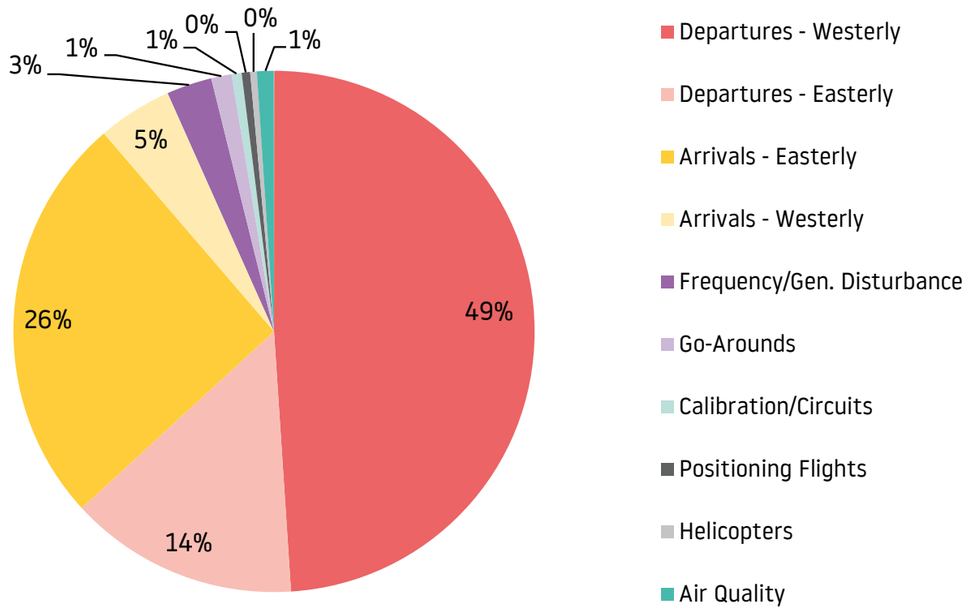
14 Complaints reported disturbance relating to over-flights to/from other airports during the Night Period

181 Individuals reported night noise in 2015 (compared to **92 individuals** in 2014)

434 Complaints concerning night noise disturbance from LLA operations

108 Night noise complaints were from two regular complainants

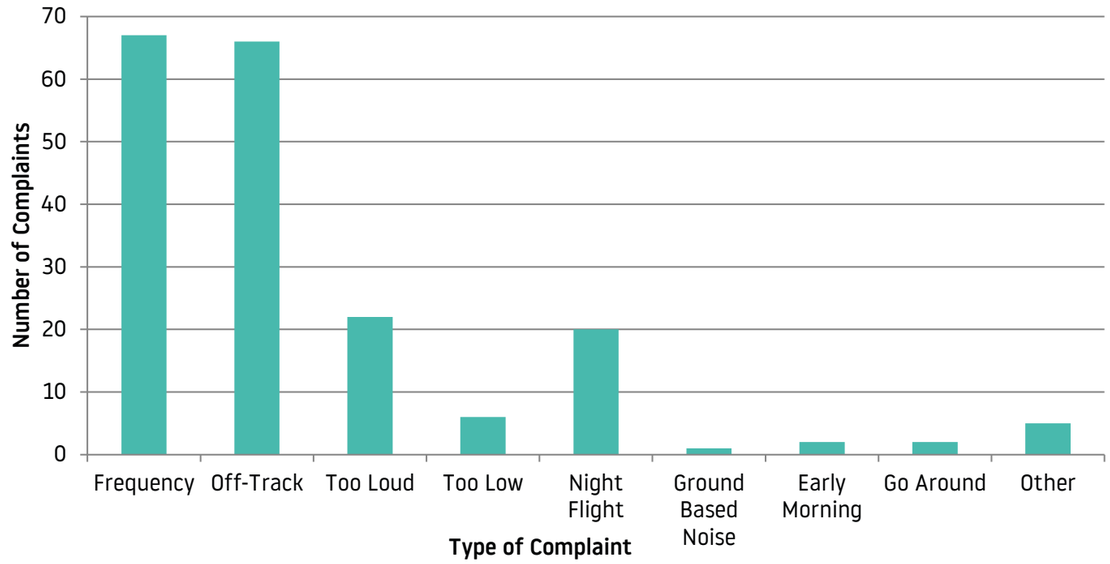
Nature of Disturbance



Within the 473 complaints concerning westerly departures 65 were of a general nature, 373 reported specific aircraft following the Match/Detling route, 24 related to aircraft on the Compton route and 6 related to aircraft following the Olney heading. Five other complaints involved positioning flights following off-airways flight routes.

Of the 138 complaints attributed to easterly departures 8 were of a general nature, 102 related to aircraft following the Compton heading, 7 related to aircraft on Olney flight route and 18 to aircraft on the Match/Detling heading. A further 3 complaints involved positioning flights following off-airways flight routes.

Whilst 187 of the 244 complaints concerning easterly arrivals reported general disturbance, 57 related specifically to aircraft on approach to land from the Lorel Reporting Point.



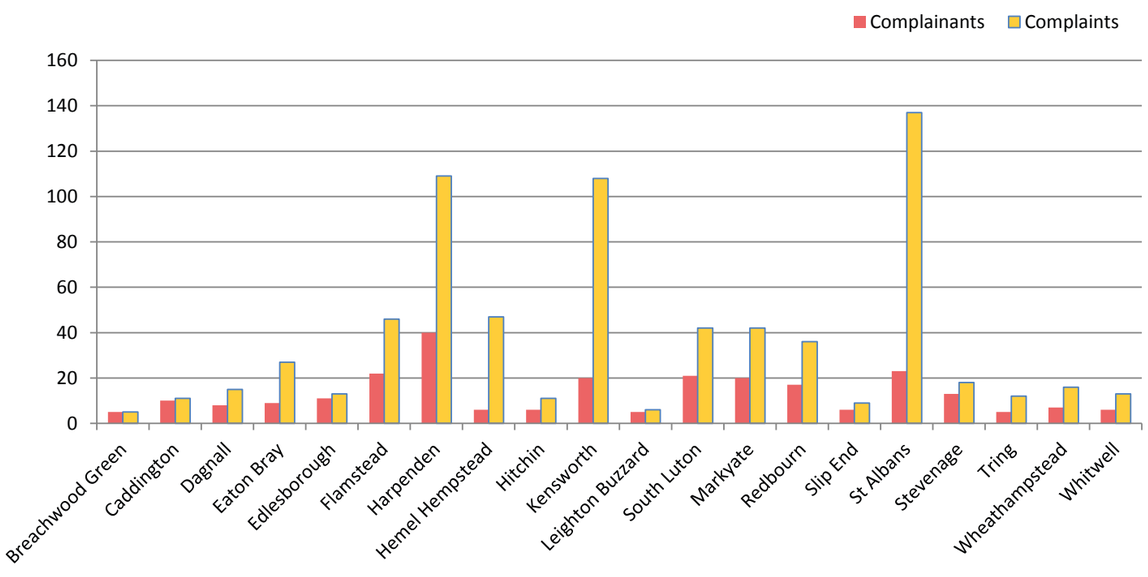
Complaints by aircraft type

Of the 960 complaints relating to LLA aircraft operations registered during the year 574 complaints (60%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The diagram below shows aircraft types generating complaints.

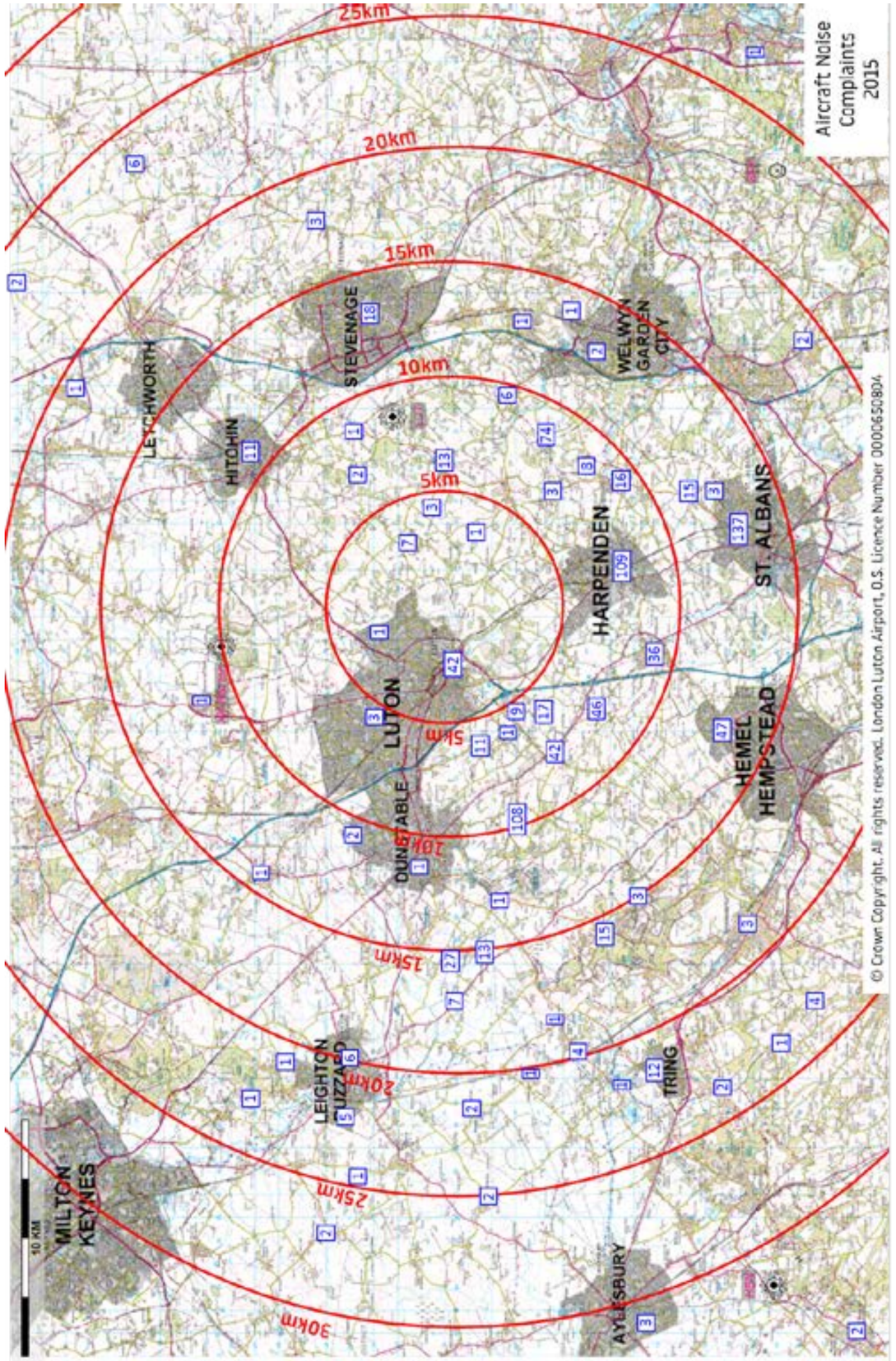
Aircraft Type	No. of Correlated Complaints	% of Total Complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per Correlated Complaint
A320/A321	168	29.30%	42,060	250
A319	69	12.00%	26,554	385
B737-800	67	11.70%	12,046	180
A306 (Cargo)	83	14.50%	1,276	15
B737-400	34	5.90%	1,000	29
GLF4/GLF5/GLF6	10	1.70%	5,500	550
ATP	12	2.10%	403	34
B757 & B767	27	4.70%	1,550	57
B737-300	8	1.40%	316	40
B737-200	8	1.40%	42	5
Helicopter	4	0.70%	468	117
CL30/CL60	7	1.20%	3,260	466
GLF2/GLF3	0	0.00%	439	0
Other Private Aircraft	42	7.30%	20,046	477
Other Cargo Aircraft	1	0.20%	8	8
Other Passenger Aircraft	34	5.90%	34	1

It can be seen that the majority of the complaints are related to the quietest aircraft. This is mainly due to the frequency of these quieter, modern aircraft types compared to the small percentage of older generation aircraft.

Location of Complainants (5+)



Location of Complaints 2015



Communication method

The following table shows the method of communication used to contact London Luton airport regarding noise.

Communication Method	% of Total Complaints
E-mail	75%
Telephone	24%
Letter	0.7%
TraVis	0.3%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Flight Operations team by the following means:

Postal Address **Flight Operations**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY
Direct Telephone **(01582) 395382 (24 hours)**
Direct email **noise@ltn.aero**
TraVis **www.travisltn.topsonic.aero**

Community Relations

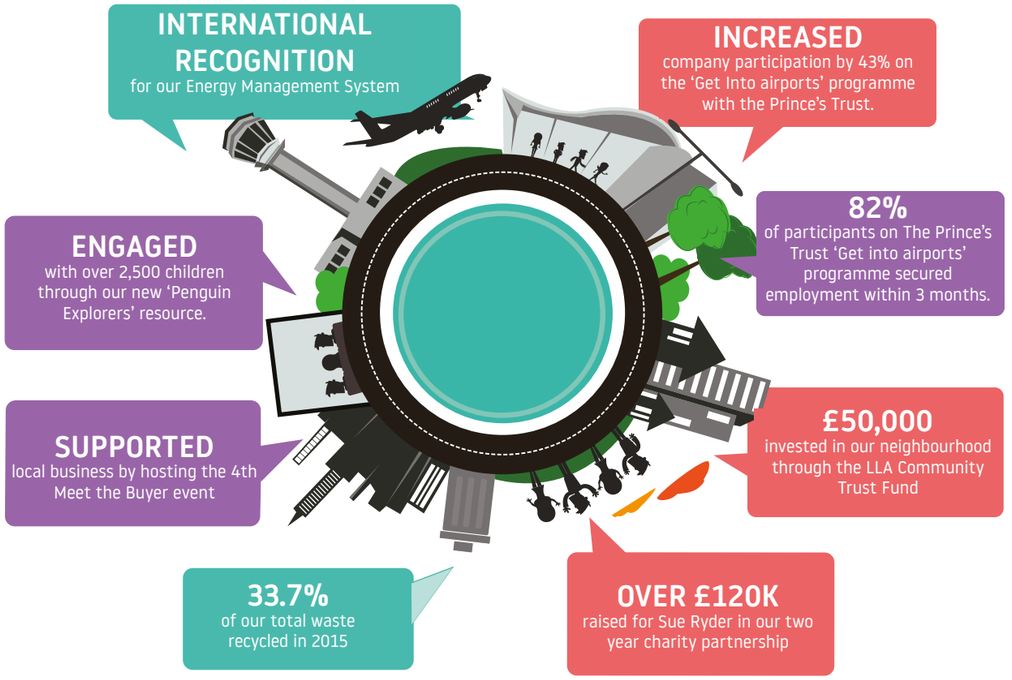
Through the London Luton Airport Consultative Committee (LLACC), which meets each quarter, London Luton airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the airport Consultative Committee including meeting minutes and its representatives can be found at the following link: http://www.llacc.com/

In 2015, members of the airport also went out into the community in the form of Public Surgeries. These allow local residents to approach the members of the airport team directly with aircraft concerns. The Flight Operations team is then able to explain the operations and the airport's actions in reducing the disturbance for our local communities on a one-to-one basis. In 2015, Public Surgeries were held in Redbourn, Markyate, Pepperstock and Kensworth. These will continue to be scheduled in 2016.

Our five year Community Relations Strategy forms part of LLA's corporate social responsibility programme and sets out how we will facilitate community development and meet the needs of key stakeholders. Initiatives are delivered by the airport in collaboration with key community partners. In 2015 we made nine commitments to ensure that we continued to play a positive role in our local community. The following figure summarises the progress made towards these commitments during the year.

We achieved 8 out of 9 of these commitments with one requiring more work. Due to a change in the waste disposal service provider and significantly increased passenger numbers, the airport has not reached its desired target of 45% of total waste being recycled.

Community engagement strategy achievements



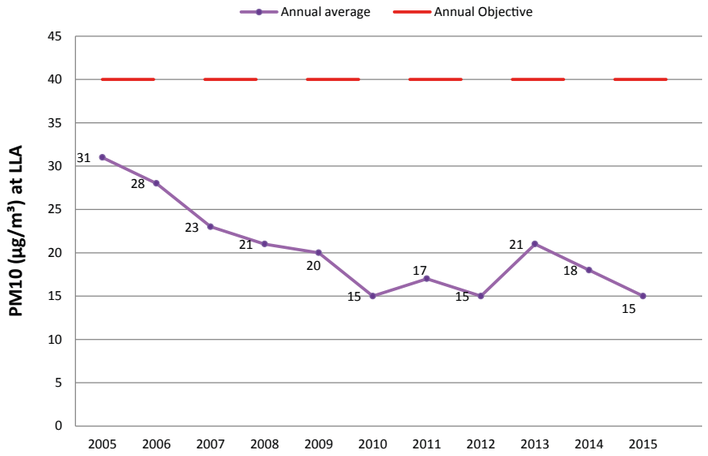
Air Quality

London Luton airport has been monitoring air quality in and around the airport environment since 2003. Air quality data collected at LLA is integrated into a monitoring programme incorporating data collected by the surrounding Local Authorities, with a monthly report available to view online at www.ukairquality.net The parameters we measure are PM_{10} and NO_2.

PM_{10} (Particulates measuring 10µm or less)

PM_{10} is one of the main contributors to reduced ambient air quality. Particulate matter is made of fine particles including dust and soot which are suspended in the air. When you breathe in these particles they can stick to the surface of your lungs, and in areas of high pollution can cause respiratory health problems. Local sources include emissions from vehicles and aircraft engines, wear of brakes, tyres, and construction debris.

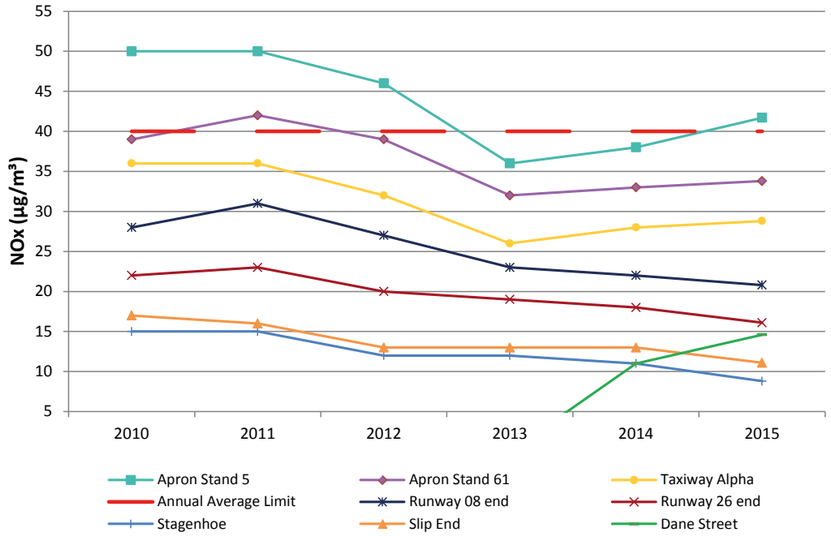
PM_{10} is monitored from one location in the middle of the airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg/m³, and are decreasing over time. There were no pollution occurrences exceeding the daily mean of 50 µg/m³ during the year.



Nitrogen Dioxide (NO_2)

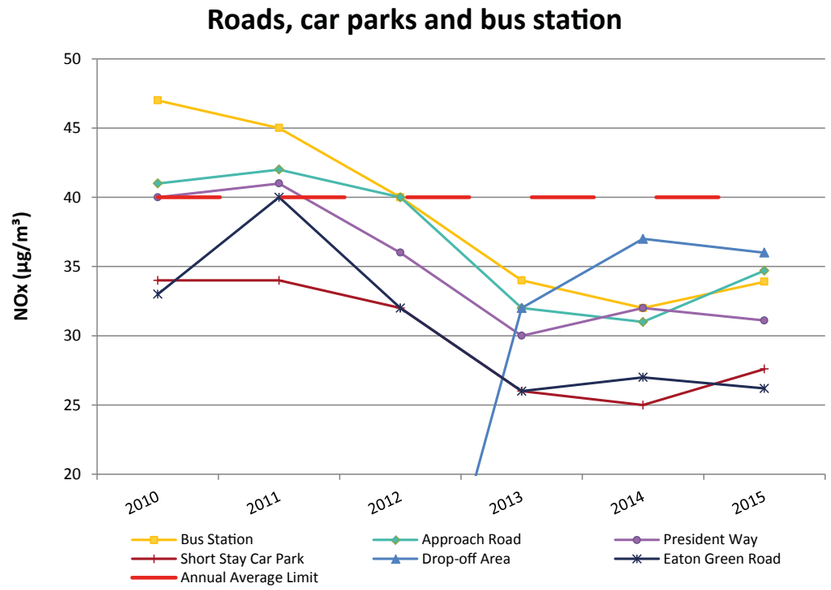
NO_2 in high concentrations can cause a wide variety of health and environmental impacts. The gas is produced from the combustion of fuels such as diesel and aviation fuel. NO_2 is currently measured from 14 locations around LLA, and the results have a bias-adjustment factor applied using national database factors. The annual mean local air quality objective of 40µg/m³ also applies to NO_2.

Airport apron, runway and under the flight paths



NO_2 levels at the closest residential receptors to the airport, and also along the aircraft flight paths are significantly below the the objective level laid out in the Air Quality (England) Regulations 2000 (as amended). Levels monitored by the roads around the airport, in the car parks and on the apron are a little higher, with one location on the main apron slightly exceeding 40 µg/m³. A project is underway to standardise equipment on the apron which will help reduce pollution levels.

Roads, car parks and bus station



Surface Access

LLA aims to improve access to London Luton airport, particularly by public transport in order to reduce the contribution that journeys make to total airport-related CO2 emissions and also to air pollution. LLA's current airport Surface Access Strategy runs from 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework.

Modes of Transport

Passengers transport mode share (CAA Data)

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLA uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table shows the weighted CAA data for 2010-2014. The CAA statistics suggest that 29% of airport passengers chose to use public transport in 2014. LLA aims to achieve 40% by 2017, and has has invested in improvements to the bus station in 2015, increasing the number of stands from 11 to 18. Plans for a new passenger transit system from Luton airport Parkway to the airport terminal are also being developed.

%	2010	2011	2012	2013	2014
Private Car - Drop Off	27	27	27	28	25
Private Car - Park	24	23	23	23	28
Rail	17	15	17	16	14
Bus/Coach	15	16	16	16	15
Taxi	15	18	17	17	17

Staff transport mode share

LLA aims to reduce the proportion of staff travelling alone by car to and from London Luton airport to 60% or lower by 2017. Whilst employee travel does not generate as many trips as passengers, it is as important consideration as employees making a more sustainable travel choice will give daily results due to the frequency of their need to commute to work. Staff travel surveys are undertaken once every 2 years, and the results since 2010 are presented in the table below.

%	2008	2010	2012	2014
Drive alone	72	66	66	62
Car share	10	12	8	11
Taxi	2	1	1	0
Motorcycle	1	1	1	1
Rail	5	5	5	10
Bus/Coach	6	7	9	8
Cycle	1	2	2	2
Walk	3	5	6	7

Road Traffic and Car Parks

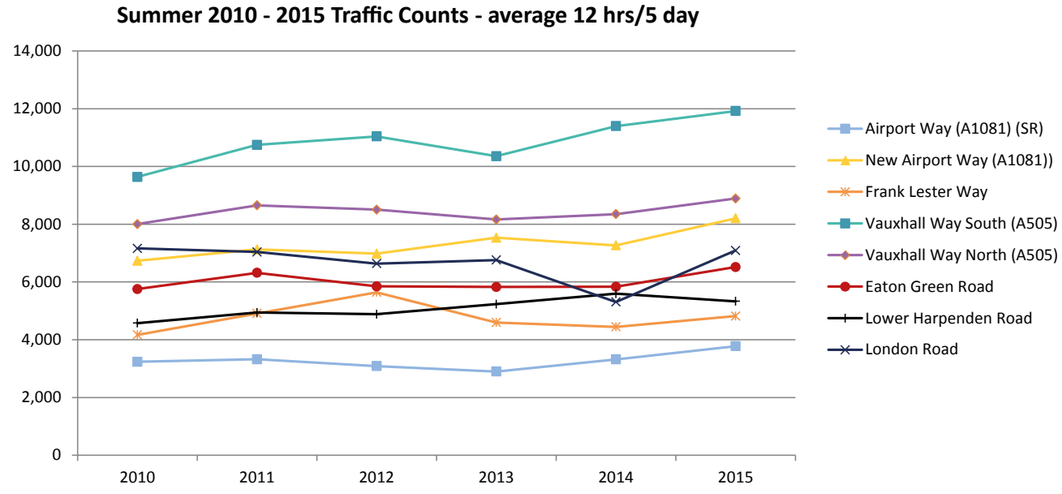
The information contained in this section is based on traffic counts conducted at 8 sites during the period 9th-28th September 2015. This period is comparable with previous summer traffic counts and avoids any periods when significant changes in traffic characteristics can occur. The flows on London Road, in comparing 2014 flows with those in previous years, appear to have been supressed as a result of the works at Junction 10a in 2014; similarly the flows on Lower Harpenden Road were higher during the works. As a result flow comparisons between 2014 and 2015 are not meaningful, and any comparisons in the remainder of this section are therefore made between 2013 and 2015 flows.

The table and graph below show an increase in 12hr/5day traffic flows between 2013 and 2015 on all of the 8 monitored roads, with the highest percentage increase being +30.3% on old airport Way (+878 vehicles) and the second highest +15.1% (+1,562 vehicles) on Vauxhall Way (south).

Summer 2010 - 2015 Traffic Counts (Average 12 hrs/5 day)

	Map ref	2010	2011	2012	2013	2014	2015
Airport Way (A1081) (SR)	599	3,237	3,323	3,088	2,897	3,319	3,775
New Airport Way (A1081))	925	6,735	7,127	6,979	7,532	7,268	8,204
Frank Lester Way	445	4,170	4,908	5,642	4,597	4,445	4,818
Sub-total		**14,142**	**15,358**	**15,709**	**15,026**	**15,032**	**16,797**

	Map ref	2010	2011	2012	2013	2014	2015
Vauxhall Way South (A505)	520	9,638	10,746	11,039	10,355	11,395	11,917
Vauxhall Way North (A505)	603	8,005	8,652	8,505	8,164	8,348	8,889
Eaton Green Road	677	5,755	6,317	5,849	5,826	5,835	6,517
Lower Harpenden Road	106	4,576	4,942	4,885	5,232	5,594	5,331
London Road	393	7,163	7,037	6,634	6,759	*5,307	7,090
Sub-total		**35,137**	**37,694**	**36,912**	**36,336**	**36,479**	**39,654**
Total		**49,279**	**53,052**	**52,621**	**51,362**	**51,511**	**56,451**



* - Site impacted by J10a works

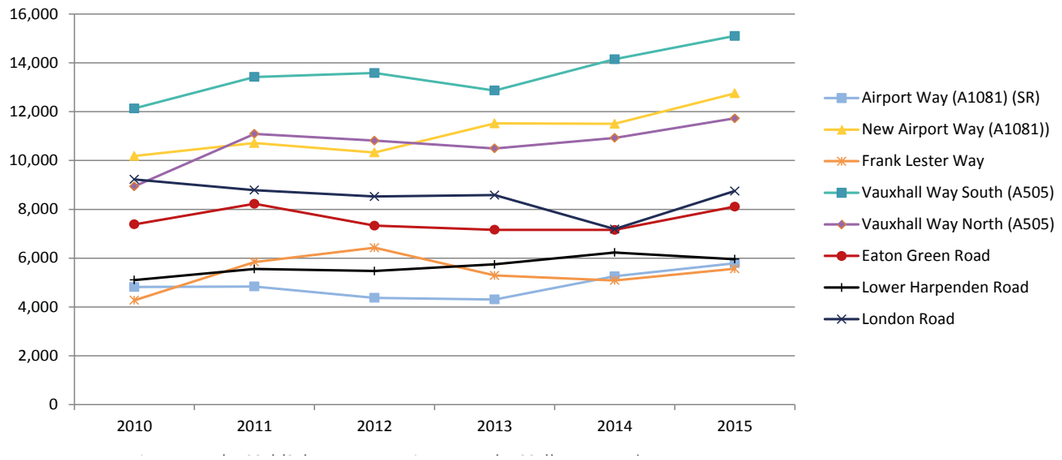
For the 24-hour week (24/7), the table and graph below reveal similar patterns to the 12hr/5day traffic counts. The highest increase in traffic is +34.4% on old airport Way (+1,482 vehicles) and the second highest is +17.4% (+2,236 vehicles) on Vauxhall Way (south).

Summer 2010 - 2015 Traffic Counts (Average 24 hrs/7 day)

	Map ref	2010	2011	2012	2013	2014	2015
airport Way (A1081) (SR)	599	4,818	4,840	4,374	4,309	5,256	5,791
New airport Way (A1081))	925	10,185	10,714	10,330	11,518	11,503	12,751
Frank Lester Way	445	4,275	5,842	6,426	5,289	5,086	5,564
Sub-total		**19,928**	**21,396**	**21,130**	**21,116**	**21,845**	**24,106**

	Map ref	2010	2011	2012	2013	2014	2015
Vauxhall Way South (A505)	520	12,131	13,421	13,582	12,865	14,146	15,101
Vauxhall Way North (A505)	603	8,939	11,093	10,813	10,496	10,924	11,726
Eaton Green Road	677	7,383	8,226	7,330	7,161	7,155	8,109
Lower Harpenden Road	106	5,104	5,555	5,475	5,746	6,232	5,959
London Road	393	9,225	8,788	8,523	8,582	*7,190	8,747
Sub-total		**42,782**	**47,083**	**45,723**	**44,850**	**45,647**	**49,642**
Total		**62,710**	**68,479**	**66,853**	**65,966**	**67,492**	**73,748**

Summer 2010 - 2015 Traffic Counts - average 12 hrs/7 day



A general conclusion in comparing the 2014 and 2015 data is that flows increased on all but one of the 8 monitored roads, with the greatest increases in flows (both absolute numbers and % change) being on London Road. The only monitored road where flows reduced over the same period was on the Lower Harpenden Road. However, as it has already been mentioned both London Road and Lower Harpenden Road traffic counts are not meaningful as a result of the works at Junction 10a in 2014.

The map overleaf indicaticates location of these observation points.

* - Site impacted by J10a works

Local Highway Network

Sustainability

LLAOL is committed to operating in a way that maximises the socio-economic benefits for the local and regional area whilst minimising the environmental impacts. To ensure this vision is shared and supported, we work closely with airlines, stakeholders and business partners to promote this approach across the airport, ensuring that the full benefits that London Luton Airport can bring to the region are realised.

LLAOL aims to continuously improve on environmental performance in many different areas across the Airport. In 2015 the following was achieved:

17%
The percentage of electricity usage per passenger to have been reduced by the airport in 2015

9% reduction
in Carbon emissions

34%
of waste was recycled

7% reduction
in Water usage

The airport maintened the ISO14001 international accreditation for Environmental Management System and the ISO50001 international accreditation for Energy Management.

Sustainable Travel Improvements during 2015

During 2015 construction works began to redevelop the road network, parking, taxi and drop-off facilities at the terminal entrance along with the bus station. Further information on these upgrades can be found under 'Planning and Development'.

Overnight rail services from Luton Airport Parkway begin at the end of 2015, making rail a viable transport option for 2-3 million more airport passengers per year. The shuttle buses from Luton Airport Parkway up to the airport terminal were also rebranded, and improved ticket machine facilities were installed.

A new bus service began running up to the airport in 2015, operated by Metroline. The 714 service runs from New Barnet, through London Colney, St Albans and Harpenden before travelling up to the airport.

Major improvements to Junction 10a of the M1 have recently been completed in conjunction with the Highways Agency and Luton Borough Council. These works have relieved congestion at this junction, providing seamless dual carriageway access from the M1 to the airport approach road.

A survey on issues relating to luggage on public transport to and from the airport was also undertaken in August 2015, with the results reported back to transport operators.

Planning and Development

Through the local transport plan, Luton Borough Council (LBC) set out the policies, strategies and schemes for Luton, Dunstable and the Houghton Regis area. The current Local Transport Plan (LTP3) for Luton covers the period 2011-2026 and can be accessed through LBC's website.

Airport planning and development

London Luton airport's planning consent for a £110m development was granted by Luton Borough Council in 2014. The ambitious project aims to greatly enhance the passenger experience with an extensive terminal upgrade, better road access, and a new multi-storey car park.

During 2015 enabling works were undertaken in preparation for the official commencement of re-development on the 1st January 2016. Two construction contractors were also appointed in 2015, these were Mclaughlin & Harvey and Whitemountain.

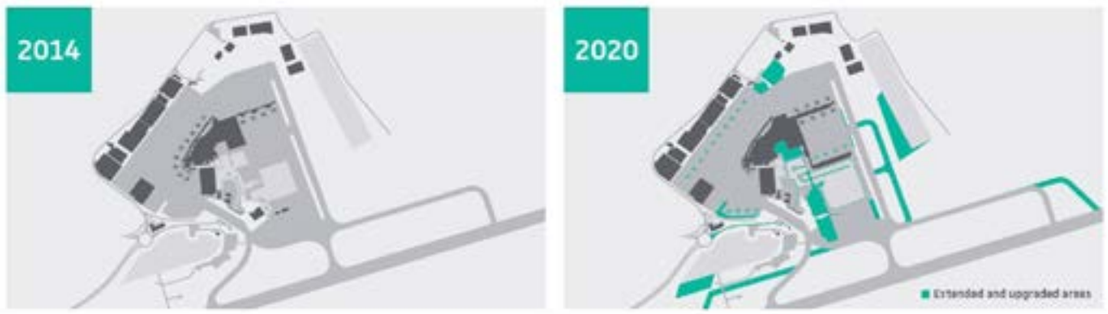
The redevelopment is currently on schedule with a number of key milestones already reached in 2015.

Security Search Area
In November 2015 the security search area was relocated to a larger space on the ground floor along with the introduction of new equipment which has helped speed up security checks. The area will be expanded further in future to increase the number of security lanes.

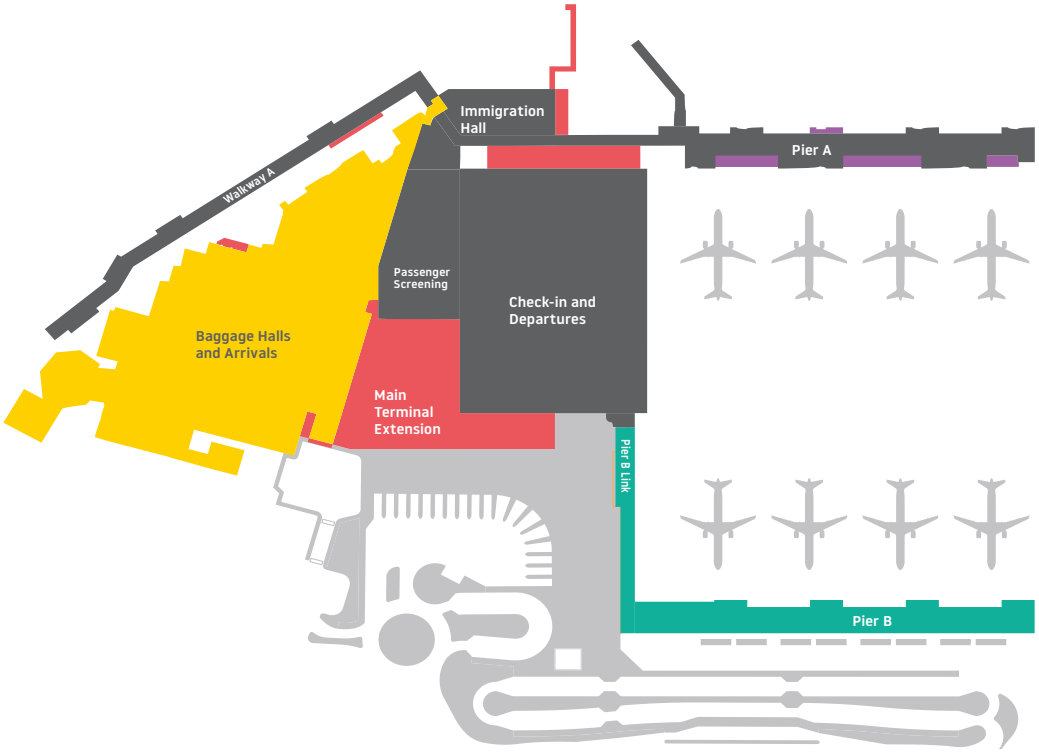
Temporary Arrivals
The arrivals hall moved to its temporary location in 2015, this has enabled terminal works to commence inside the terminal area and the security hall to be moved in to it's place.

Bus Interchange
2015 saw the opening of the new bus interchange area, this now offers more routes and increased frequency of the bus routes.

Below are two maps showing the extent of the works.



The following two maps show the timescales and description of the works both airside and landside.



Main Terminal Extension

Start Date: January 2016
Completion Date: June 2017

Pier A Extensions

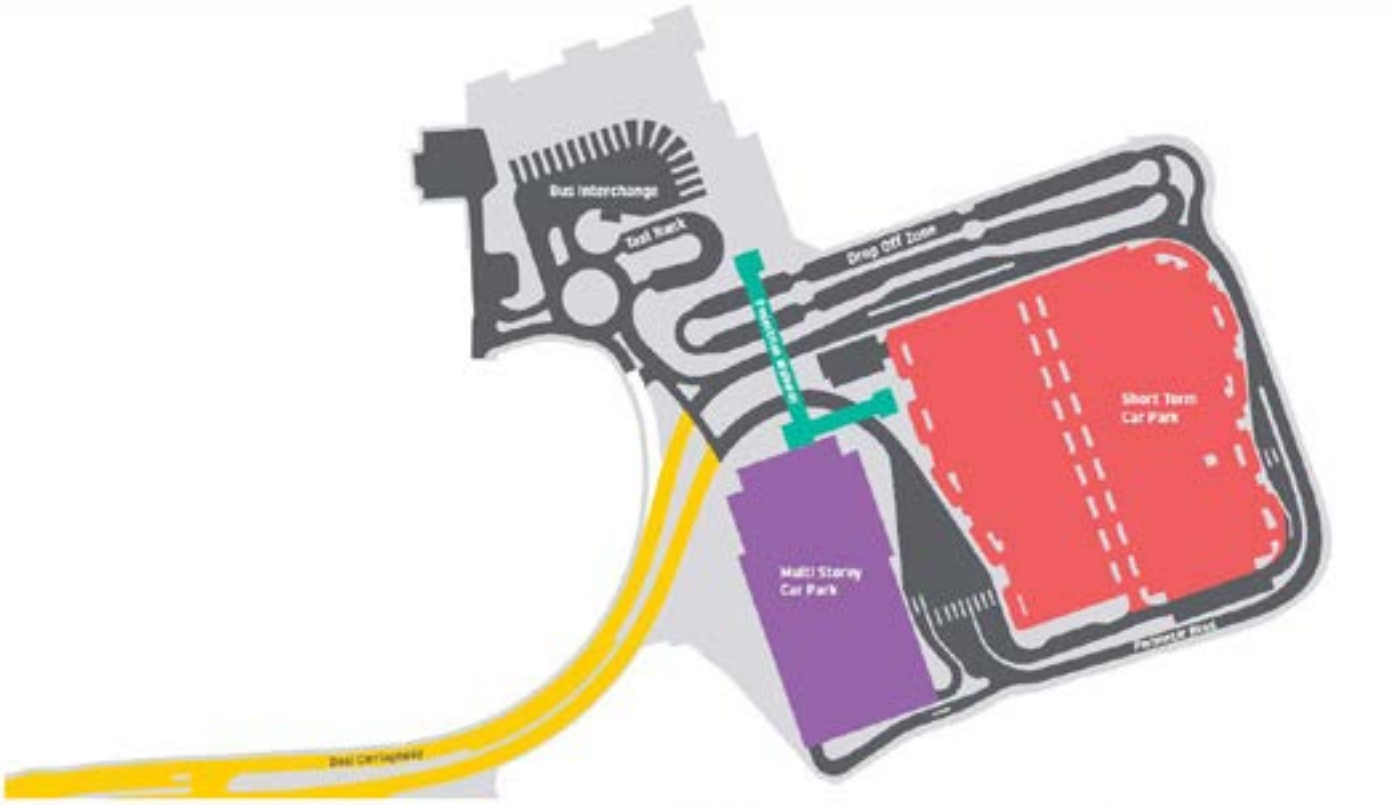
Start Date: April 2016
Completion Date: October 2016

New Pier

Start Date: March 2016
Completion Date: End of 2017

Baggage Reclaim

Start Date: April 2017
Completion Date: End of 2017



Short Term Car Park

Start Date: July 2015
Completion Date: October 2016

Multi Storey Car Park

Start Date: January 2016
Completion Date: July 2016

Pedestrian Walkway

Start Date: November 2015
Completion Date: July 2016

Dual Carriageway

Start Date: January 2016
Completion Date: September 2016

ANNEX G - AIRPORT ANNUAL MONITORING REPORT 2016

Annual Monitoring Report
2016

London
Luton
Airport

Contents

Foreword

2016 was a record year for London Luton Airport (LLA). 14.5million passengers chose to travel with us, making it our busiest year on record.

Demand for air travel across the UK is increasing rapidly. Moreover, the airspace over our local region is among the busiest in the world: over 4,000 flights a day operating in and out of London airspace, which means we cannot act alone to change flightpaths to and from LLA.

In response to increased demand, we are making the biggest investment in our history to transform the airport. The redevelopment of our terminal will bring huge benefits for passengers, but it is vitally important to us that the local community also shares in the success of the airport.

At LLA, our aim is always to work constructively with the local community and our partners to strike the right balance between maximising the positive social and economic benefits of a successful airport to the local area and the UK as a whole while minimising the impact of aircraft noise.

The economic benefits of the airport are easy to quantify.

Once the current development is complete, LLA will contribute £1.4billion per year to the local economy and £2.3billion nationally. It will support over 37,700 jobs, which on average pay £11,000 per year more than the national average wage. Residents of the Three Counties took more than 4.5 million flights from LLA last year, equivalent to 2.3 trips per person.

But we recognise that the airport's growth may give rise to questions about noise levels.

LLA already operates under the most stringent noise restrictions of any major UK airport. But we are continually looking to do more. As the airport continues its growth and development, we are evolving our approach to noise management. We are committed to:

1. Inviting and listening to feedback
We hold regular noise surgeries and are available to listen to your concerns 365 days per year.

2. Acting on the feedback we receive
Whether it is introducing new mitigation initiatives, buying new noise monitors or simplifying our complaints system, we act on your feedback.

3. Communicate transparently
We update the community with quarterly monitoring reports, through our consultative committee and a new monthly email newsletter: 'Inform'.

4. Input into national policy-making
Airspace changes depend on national policies. LLA will make sure your views are heard in national consultations.

This Annual Noise Monitoring Report is one example of how we put those principles into action. We hope it answers some of the questions you may have over the impact of the airport's transformation.

If you have any further queries please don't hesitate to contact the team by calling 01582 395382 or emailing noise@ltn.aero.

Neil Thompson
Operations Director
London Luton airport

Key Monitoring Indicators

Parameter		2016	2015
Total Aircraft Movements	↑	131,435	116,412
Day Movements (07:00 - 23:00)	↑	116,686	103,220
Night Movements (23.00 – 07.00)	↑	14,749	13,192
Early Morning Movements (06.00 – 07.00)	↑	5,161	4,778
Total Scheduled Passengers	↑	14,092,180	11,807,292
Total Charter Passengers	↓	459,657	471,893
Total Passengers	↑	14,551,837	12,279,185
Number of Destinations	↑	135	118
Number of New Airlines	-	4	4
Number of New Routes	↑	23	20
Westerly/Easterly Runway Split (%)	-	70/30	72/28
Night Quota Used (3,500 Limit)	↑	2,663.75	2,480
Average Ratio of Aircraft movements % (day/night)	-	89/11	89/11
Track Violations (covers period Apr-Dec 15)	↑	91	62*
Departure Noise Infringements (Day)*	↑	21	15
Departure Noise Infringements (Night)*	↓	3	9
Fines transferred into Community Trust Fund	↑	**£75,700**	£52,000
24hr Continuous Decent Approach (% achievement)	↑	90%	87%
No. Departures Recorded at ≥ 85 dB(A) during Day (Night)	-	8 (1)	13 (0)
No. Departures Recorded at ≥ 76 dB(A) during Day (Night)	-	6,379 (943)	7,871 (1,209)
No. Departures Recorded at ≥ 70 dB(A) during Day (Night)	-	42,667 (4,511)	36,879 (4,266)
Night Noise Contour Area (48 dB $L_{Aeq, 8h}$)	↑	36.5km^2	35.3km^2
Population within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	16,105	14,681
Dwellings within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	6,767	5,539
Noise Complaints	↑	3,612	960
Complainants	↑	814	355
Number of New Complainants	↑	525	158
Largest Source of Complaints	-	Deps. West	Deps. West
Number of PM_{10} exceedances	-	0	0

*Please note that the data shown for noise infringements in 2015, includes those that recieved a violation between January-March 2015, when the noise limits were greater. New lower noise limits were put in place in April 2015.

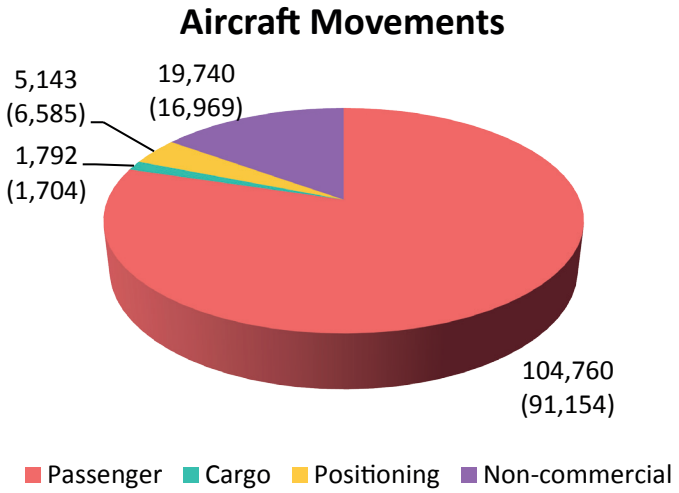
Air Traffic Data

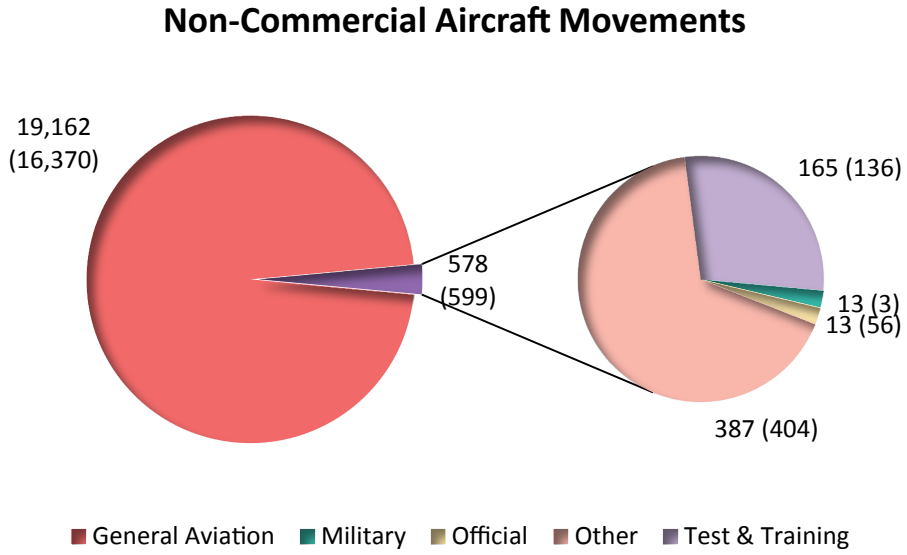
Aircraft movements

LLA handled a total of 131,435 aircraft movements during 2016, an increase of 13% compared to 2015. An aircraft movement is the take-off or landing of any aircraft from the airport.

The majority of aircraft movements were passenger flights at 104,760 movements. This includes commercial flights by executive aircraft (compared with 91,154 in 2015). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2015 data is shown in brackets.

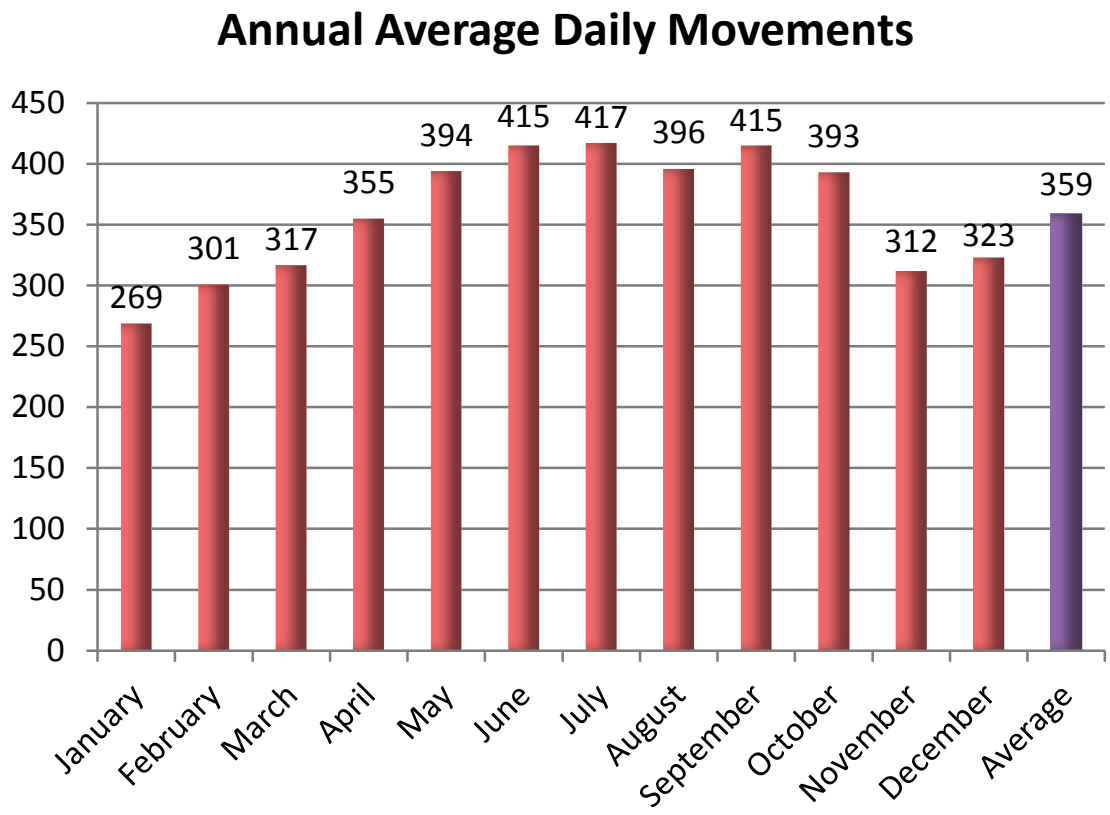




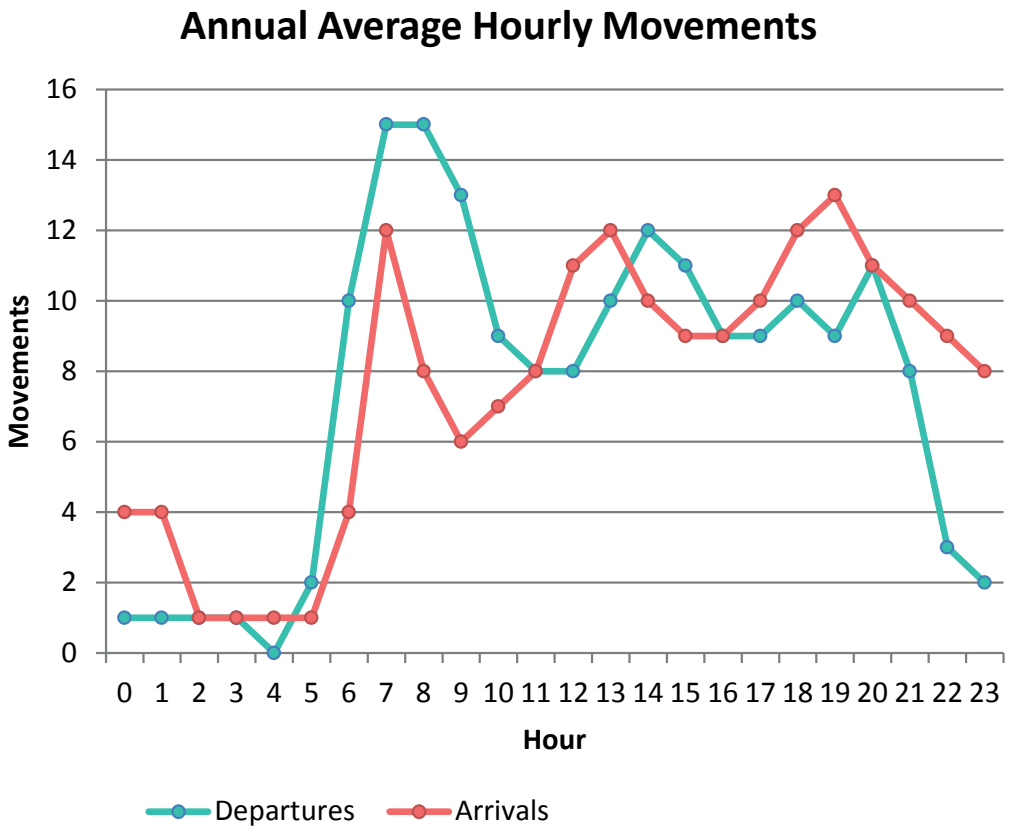
Movement Classification

Commercial – operating for hire or reward and includes cargo, passenger and positioning flights
Non-Commercial – not operating for hire and reward
Cargo – aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories
General Aviation – private aircraft, helicopters and business jets not operating for hire or reward
Passenger – commercial passenger flights, including executive aircraft
Positioning – typically empty flights to/from other airports
Military – flights on military business
Official – flights solely for official purposes by British or foreign civil government departments
Other – flights coming for maintenance and or departing aircraft that have made an unscheduled return to base
Test & Training – training flights involving aircraft and also flights following or during aircraft maintenance

The graph below illustrates that the busiest time of year is May - October, with over 390 flights per day. **Our busiest day of the year was September 9th with 463 aircraft movements.** In comparison, winter months are the quietest, with just over 300 flights per day. On average there were 359 movements per 24 hours (compared to 319 in 2015).



The busiest time on average during 2016 for departing aircraft was 06:00-09:00 hrs, with another peak between 13:00-15:00. The average busiest time for arrivals was 07:00-08:00 and 12.00-14.00 hrs. The graph also highlights a low level of average movements during the hours of 00:00-05:00 hrs.



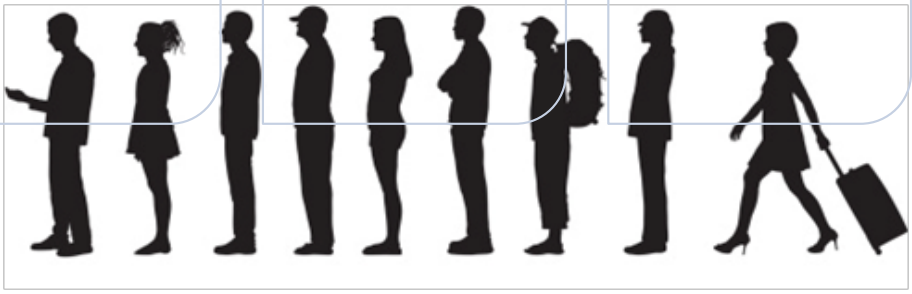
Passenger data

Scheduled	Charter	Totals
• **14,092,180** passengers • 19% increase compared with 2015 • **147** average passengers per flight	• **459,657** passengers • 2.5% decrease compared with 2015 • **180** average passengers per flight	• **14,551,837** passengers • 18.5% increase compared with 2015 • Total **148** average passengers per flights

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 14,551,837 passengers were handled at LLA during 2016; 14,092,180 on scheduled flights (97%) and 459,657 on charter flights (3%). This represents an increase in passengers of 18.5% compared with 2015.

Domestic	EU	Non-EU	Totals
• **1,041,862** passengers • 9% increase compared with 2015	• **9,769,176** passengers • 19% increase compared with 2015	• **3,740,799** passengers • 17.5% increase compared with 2015	• **14,551,837** passengers • 18.5% increase compared with 2015



Cargo

Cargo operations represent just under 2% of all air transport movements at London Luton Airport. Night movements accounted for 70% of total cargo movements. These were primarily postal flights or intra-European express delivery services moving time sensitive and perishable freight such as fresh food, medication and urgently needed technical equipment vital to supporting and sustaining economic growth. The flights carrying more general, less time-sensitive cargo already operate outside of the night-time period. This would include Formula 1 cars, live animals, clothing, machine parts and more.

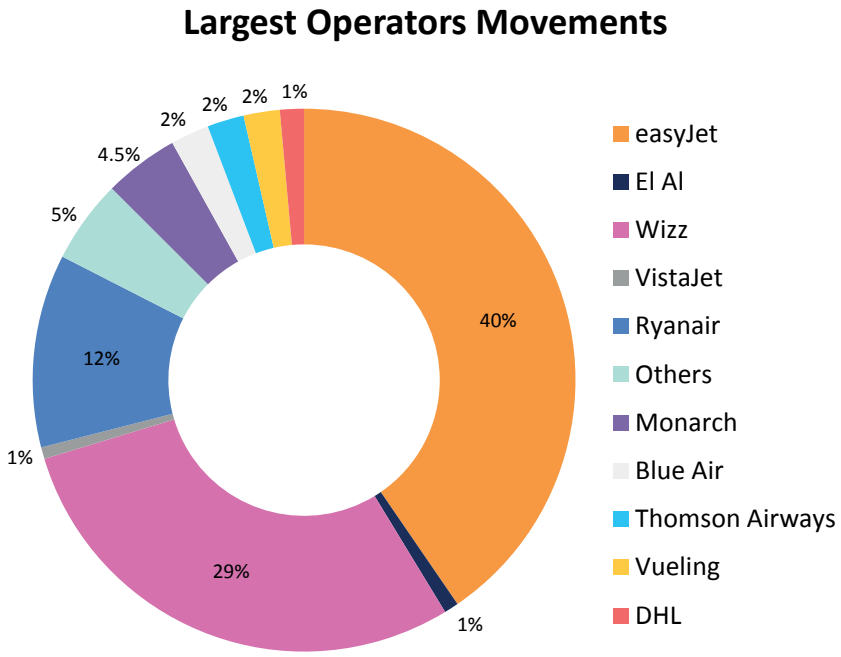
Operator	Movements			Tonnes
	Day Movements	Night Movements	Total	Total
2016	648	1,515	2,163	25,788
2015	**739**	**1,279**	**2,018**	**28,041**
2016/2015 comparison	-12%	+18%	+7%	-8%

N.B. The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because 3% of total cargo tonnage was carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in the Aircraft Movements piechart which shows dedicated cargo movements.

Airlines

London Luton Airport works very closely with its airline partners. The table below provides the movement statistics by the 10 largest operators.

Operator	Movements
easyJet	41,625
Wizz	29,868
Ryanair	11,846
Monarch	4,587
Blue Air	2,364
Thomson Airways	2,252
Vueling	2,219
DHL	1,469
El Al	888
VistaJet	715
Others	5,150
TOTAL	**102,938**



N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.

Movements by aircraft type

	Aircraft Type	Movements	% of Total movements
Passenger Aircraft (99,640 movements)	Airbus A320 & A320 sharklets[1] (easyJet, Wizz Air, Monarch)	45,281	34.5%
	Airbus A319 (easyJet)	28,000	21.3%
	Boeing B737-800 winglets[1] (Ryanair, Thomson, Blue Air, El Al)	15,437	11.7%
	Airbus A321 & A321 sharklets[1] (Wizz Air, Monarch)	6,673	5.1%
	Boeing B737-400 (Blue Air)	1,340	1.0%
	Boeing B757 & B767 family (Thomson, El Al)	1,280	1.0%
	MCD Douglas MD-82/87	54	0%
	Other Passenger Aircraft	**1,575**	1.2%
Cargo (2,189 movements)	Airbus A300-600 (A306) (DHL, MNG Cargo)	1,134	0.9%
	BAe ATP (West Atlantic)	476	0.4%
	Boeing B737-300 & B737-400 (DHL)	154	0.1%
	Boeing B757-200 (DHL)	390	0.3%
	Other Cargo Aircraft	**35**	0%
General Aviation (29,033 movements)	Gulfstream 5 and 500 series GLF5	2,277	1.7%
	Canadair Global Express GLEX	3,806	2.9%
	Cessna Citation Excel C56X	2,896	2.2%
	Canadair Challenger CL60	1,483	1.1%
	Gulfstream 3, 4, & 400 series GLF3/GLF4	1,735	1.3%
	Gulfstream 650 GLF6	1,042	0.8%
	Embraer Legacy 600 E135	1,720	1.3%
	Canadair Challenger CL30	997	0.8%
	Cessna Citation Jet C525	1,351	1.0%
	Dassault Falcon FA7X	871	0.7%
	Other Private Aircraft	**10,855**	8.3%
	Helicopter	573	0.4%
	TOTAL	**131,435**	100%

The aim of this section is to provide the number of movements for a specific aircraft type. The groups are conditional, assuming that these are the typical aircraft types used for passengers, cargo and general aviation movements. As a result the number quoted here within this section will differ from those within the Aircraft Movements Section.

[1] - Winglets and sharklets are small aerodynamic surfaces mounted almost vertically at the wingtips. There is no difference between winglets and sharklets; the term sharklet is just the name used by Airbus for the winglets fitted to their aircraft.

Destinations

London Luton Airport has seen thirty three months of consecutive passenger growth (correct as of January 2017) making 2016 the busiest year ever in the airport's history. This significant growth comprised of increased capacity and new routes with established airlines and the arrival of four new airlines Vueling, Transavia France, Adria Airways and Fly Kiss.
The map below shows the destinations flown/on sale to and from London Luton in 2016. Our airlines fly to 135 destinations across 35 different countries.

New Routes 2016

Destination	Launch	Airline
Turin, Italy	10-Dec-16	easyJet
Brest, France	7-Nov-16	flyKiss
Clermont Ferrand, France	7-Nov-16	flyKiss
Satu Mare, Romania	31-Oct-16	Wizz Air
Tuzla, Bosnia	30-Oct-16	Wizz Air
Tenerife, Spain	20-Sep-16	easyJet
Toulouse, France	19-Sep-16	easyJet
Lanzarote, Spain	19-Sep-16	easyJet
Suceava, Romania	19-Aug-16	Wizz Air
Zurich, Switzerland	1-Aug-16	Vueling
San Sebastian, Spain	26-Jul-16	Air Nostrum
Pristina, Kosovo	19-Jun-15	Adria Airways

Destination	Launch	Airline
Olsztyn-Mazury, Poland	18-Jun-16	Wizz Air
Dubrovnik, Croatia	24-May-16	easyJet
Larnaca, Cyprus	24-Apr-16	Blue Air
Paris Orly, France	22-Apr-16	Transavia
Vilnius, Lithuania	2-Apr-16	Ryanair
Kaunas, Lithuania	29-Mar-16	Wizz Air
Turin, Italy	27-Mar-16	Blue Air
Jersey, UK	27-Mar-16	easyJet
Palanga, Lithuania	23-Mar-16	Wizz Air
Amsterdam, Netherlands	18-Mar-16	Vueling
Barcelona, Spain	17-Mar-16	Vueling

Routes Ending 2016

Whilst there were 23 new routes launched from LLA in 2016, four have ended; these include Istanbul, New York, Ercan and Waterford.

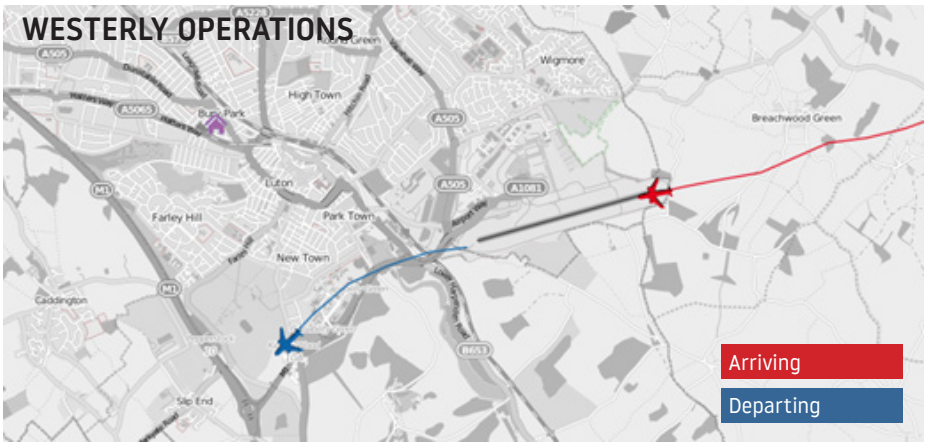
More information about our destinations can be found on the airport's website:
http://www.london-luton.co.uk/inside-lla/destination-map

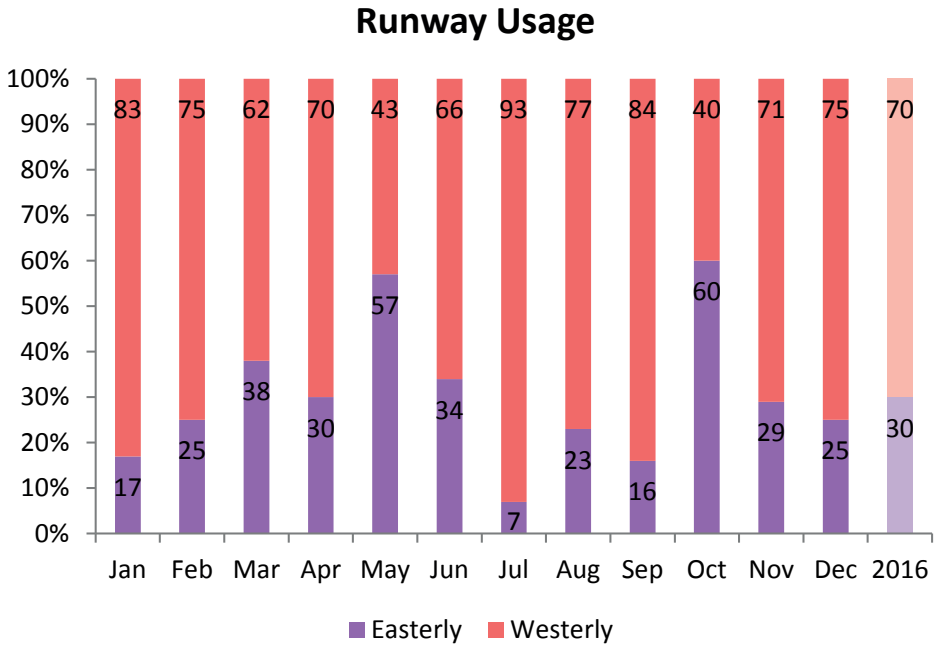
Runway usage

Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. South westerly and westerly winds prevail for much of the year, typically around 70 per cent of the time.

Wind speeds and directions recorded at higher altitudes can vary considerably from those recorded at ground level. The position of the wind is under constant review by NATS which is why the operation can change direction more than once in a day. However it is also not unusual for the runway to operate in the same direction for several weeks.

A monthly breakdown is shown, highlighting unusually prolonged spells of westerly operations over the summer and increased levels of easterly operations over the winter and spring months of 2016.





Year	Easterly	Westerly
2016	**30%**	**70%**
2015	28%	72%
2014	32%	68%
2013	36%	64%
2012	27%	73%
Average	**31%**	**69%**

The runway split during 2016 was 30% easterly and 70% westerly (compared to 28% / 72% in 2015). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 31% easterly and 69% westerly.

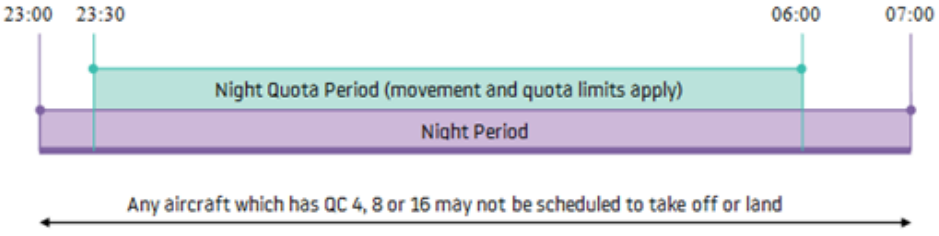
Night Flights

Night Flying Restrictions

As from 1st April 2015 London Luton Airport introduced new night restrictions as part of the planning conditions imposed by Luton Borough Council.

These restrictions have been put in place to limit and mitigate noise disturbance from aircraft operating at night, to prohibit aircraft of certain types from operating, as well as limiting the number of occasions on which aircraft may take off or land.

The night flying restrictions contain a 12 month period aircraft movement limit and a 12 month period quota count limit. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft



The table overleaf records the QC bands identified by the certified noise levels, and gives some typical example aircraft, some of which operate from LLA.

The 'Night Quota Period'
The 'Night Quota Period' is from 23:30 to 06:00 hours local, during which period aircraft movements (take-off or landing) are restricted by a limit on the number of movements with noise quotas as an additional measure.

Aircraft are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce during specific certification tests conducted by the manufacturer. They are classified separately for both take off and landing. The points are then allocated to different aircraft types according to how noisy they are.

The 'Early Morning Shoulder Period'
The 'Early Morning Shoulder Period' is 06:00 to 07:00 hours local. During this period aircraft movements (take-off or landing) are restricted by a limit on the number of movements (the same as the Night Quota Period).

Aircraft movement and quota count limits (per 12 month period)

Condition 11(f) requires that for the Night Quota Period (2330 - 0600) the following limits shall not be exceeded:

- Total annual movements by aircraft per 12 month period shall be limited to 9,650;
- The total annual noise quota in any 12 month period shall be limited to 3,500.

Certificated noise level (EPNdB)	Typical aircraft	Quota Count
Greater than 101.9	Some B741/B742, AN124/AN225	QC 16
99 to 101.9	Some B744, MD8	QC 08
96 to 98.9	B732, MD10	QC 04
93 to 95.9	B772, A306, A332	QC 02
90 to 92.9	A320/A321, some B738, B752, B788	QC 01
87 to 89.9	A319/A320, some B734, B738, B788	QC 0.5
84 to 869.	A319/A320, GLEX, FA7X/F900/F2TH	QC 0.25
Less than 84	Challenger series (eg CL60), ATP, C525/C550	QC 0

Condition 11(h) requires that for the Early Morning Shoulder Period (0600 - 0700) the total annual movements by aircraft in any 12 month period shall be limited to 7,000.

The table below provides total aircraft annual movements and noise quota per 12 month period and compares those against the limits set by planning conditions.

	Night Quota Period (2330 - 0600)		Early Morning Shoulder (0600 - 0700)
	Movements Limited to 9,650	Quota Count Limited to 3,500	Movements Limited to 7,000
Jan 2016	360	133.25	250
Feb 2016	366	151.75	259
Mar 2016	396	166.50	313
Apr 2016	576	201.75	509
May 2016	745	250.75	544
Jun 2016	940	301.00	485
Jul 2016	931	309.50	556
Aug 2016	834	293.75	539
Sep 2016	801	267.00	576
Oct 2016	746	253.25	525
Nov 2016	388	156.25	296
Dec 2016	420	179.00	309
Total for preceding 12 months	**7,503**	**2,663.75**	**5,161**

There were no night time aircraft movements with a QC value of greater than 2 in 2016. Of the 129 QC 2 aircraft movements in 2016, 111 were departures by Airbus A300-600 aircraft.

Marginally Compliant Chapter 3 aircraft

Taking the year as a whole, of the 130,044 movements where Chapter 3 categorisation is applicable, only 52 are known to be marginally compliant. These movements were all by a single aircraft, a Boeing 737-200. A further 37 aircraft movements were by aircraft with unknown classification. These comprised 9 different aircraft; three Antonov 12s, a Boeing 767-200, three Boeing 767-300s, a Dassault Falcon 20, and a Gulfstream 3.

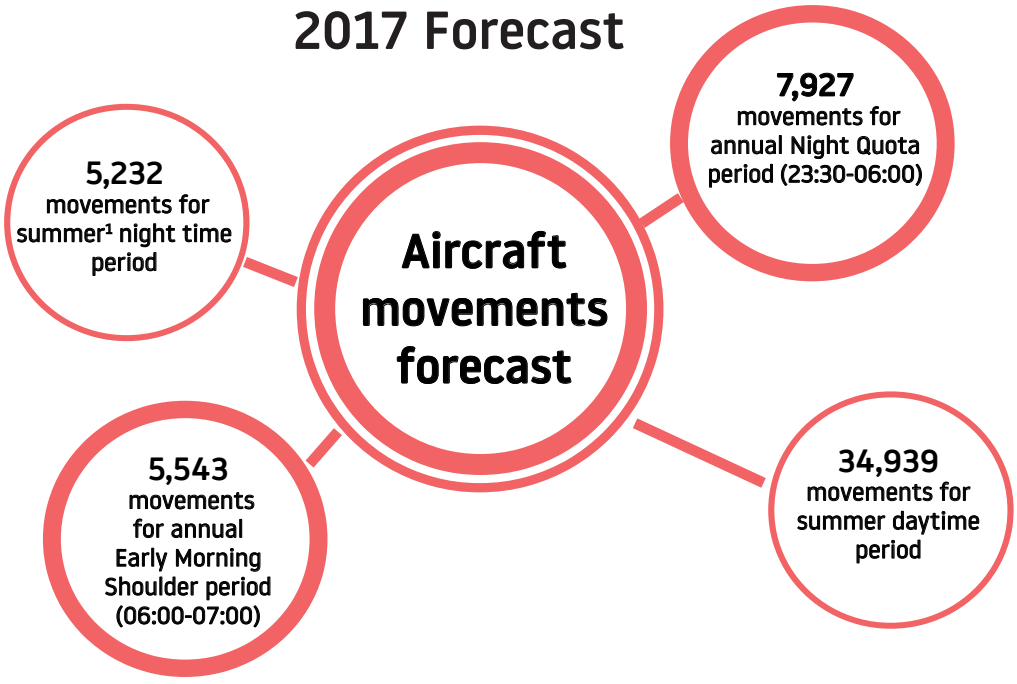
Day/Night ratio of movements

There were 14,749 night movements during 2016 (compared to 13,192 in 2015, an increase of 12%), an average of 40 movements per night (compared to 36 last year). Arriving aircraft accounted for 57% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the airport at night, between 23:00 hrs and midnight. 60% of total night departures took off between 0600 - 0700 in the morning.

The average ratio of total aircraft movements during 2016 was 89% day / 11% night (in line with 89% day / 11% night in 2015).

2016	Day Movements (0700 - 2300)	Night Movements (2300 - 0700)		
	Day Movements	Night Quota Period (2330 - 0600)	Early Morning Shoulder (0600 - 0700)	Total Night Movements (2300 - 0700)
Departures	59,446	2,066	3,789	6,272
Arrivals	57,240	5,437	1,372	8,477
TOTAL	**116,686**	**7,503**	**5,161**	**14,749**

The figure below shows forecast aircraft movements for 2017, separated into daytime and night time periods.



[1] - Summer time covers period from 16th June until 15th September

Departing Aircraft

All propeller-driven aircraft with Maximum Take Off Mass (MTOM) over 5,700kg and all jet aircraft leaving London Luton Airport are required to follow specific departure routes known as Noise Preferential Routes (NPRs). These are established by consultation with the Safety and Airspace Regulatory Group (SARG) at the CAA and the London Luton Airport Consultative Committee, and they are designed to avoid flying over built-up areas wherever possible.

There are four Standard Instrument Departure (SID) routes for each runway – OLNEY, COMPTON, MATCH and DETLING.

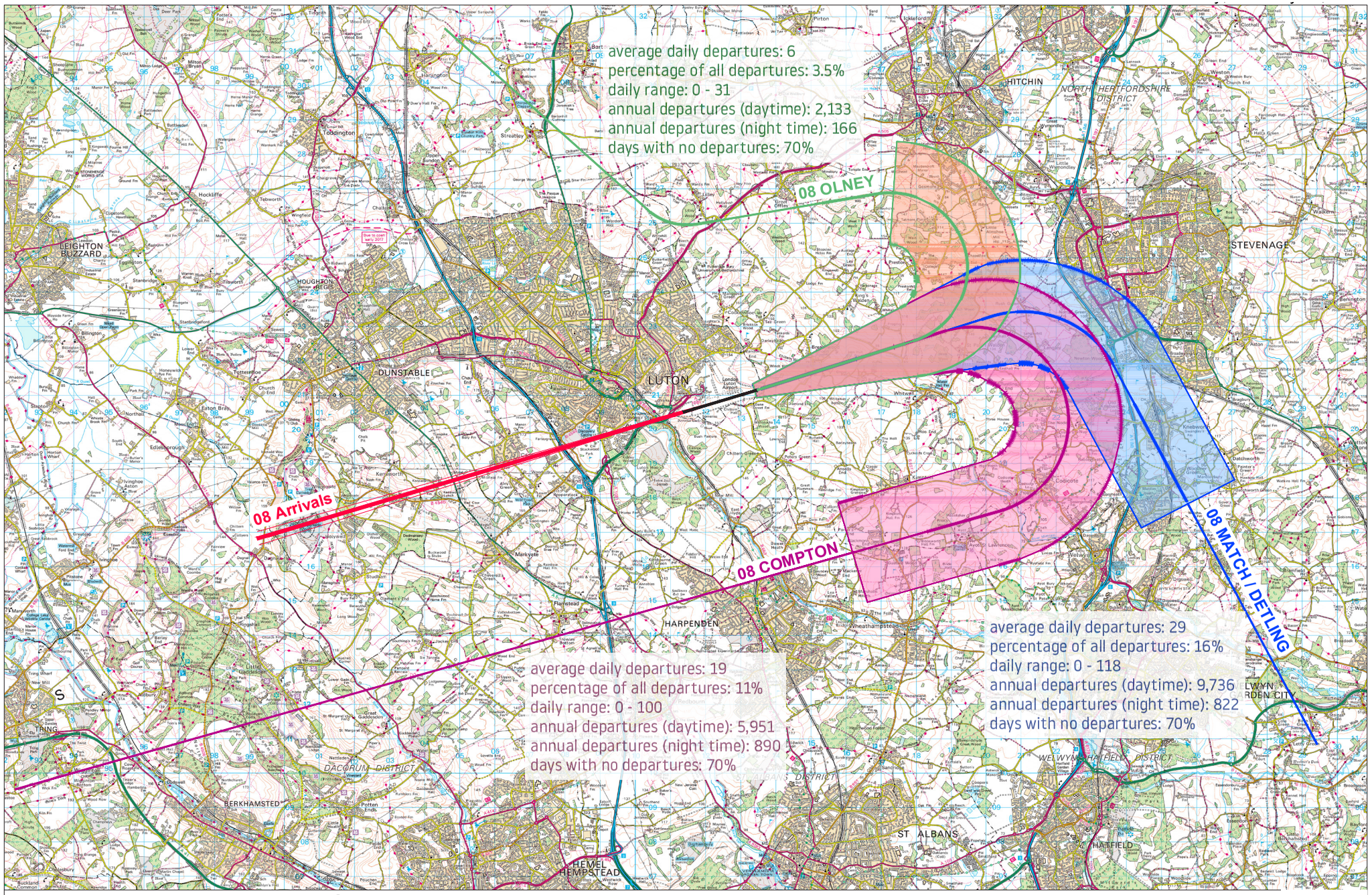
Associated with each NPR is a swathe of airspace extending 1.5km (1km for RNAV) each side of the NPR centre line, within which aircraft concentrate and are considered to be flying on track. Aircraft must follow the NPR controls applicable to the runway in use at that time.

In the UK, the obligations of Noise Preferential Routings for aircraft following conventional SIDs cease when a height of 3,000ft (between 07:00hrs to 23:00hrs local time) and 4,000ft (during night time, 23:00hrs to 07:00hrs local time) has been reached. The obligations of the RNAV NPR ceases when a height of 4,000ft has been reached at all times.

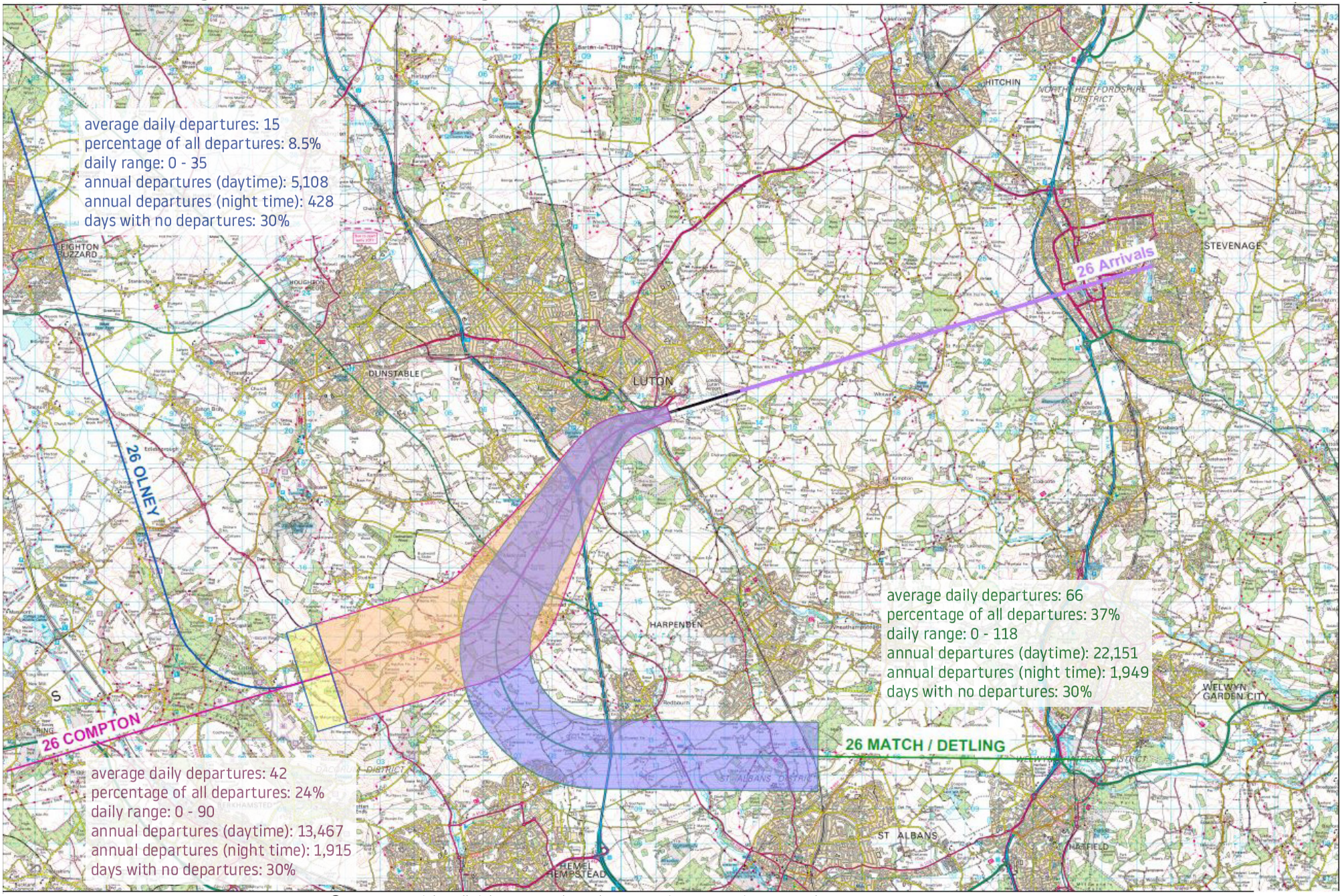
Once aircraft have reached the NPR restricted altitude they will be considered no longer on the Noise Preferential Route. At that stage the aircraft may be directed by Air Traffic Controllers onto a different heading in order to integrate with the overall flow of traffic, this is known as vectoring. However on RNAV Match/Detling SID aircraft should not be vectored before the railway line between St Albans and Harpenden, unless this is required for safe separation from other aircraft or for other safety issues such as avoiding adverse weather.

Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton Airport with detailed information about each departure route.

Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



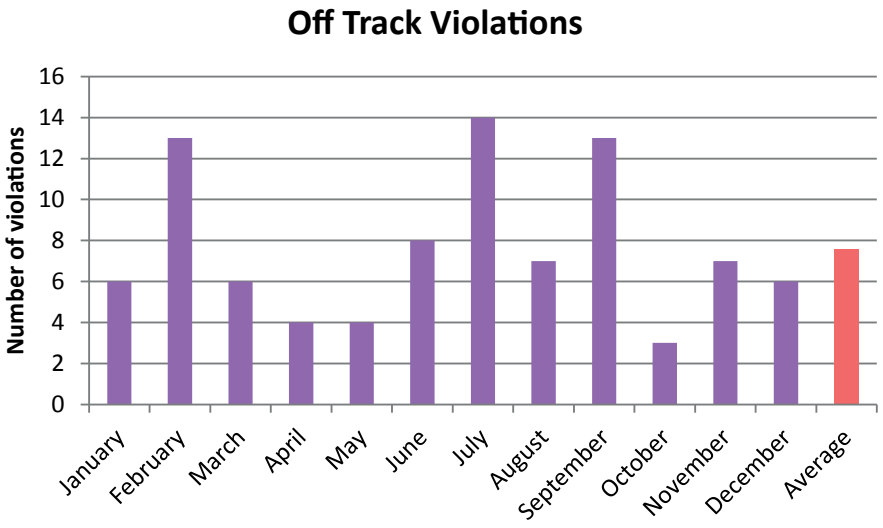
On Track performance

On the 1st April 2015 London Luton Airport implemented a Track Violation Penalty System as part of the noise related planning conditions. Using the airport's Aircraft Noise and Track Monitoring System, the Flight Operations Team evaluates the radar tracks and investigates them with required input from Air Traffic Control (ATC) and airlines. A departure is deemed to have complied with the Noise Preferential Routing if the portion of flight below the appropriate vectoring altitude is flown wholly within the Lateral Swathe (LS). Where the aircraft is clearly flying outside the LS, the aircraft is identified as causing a "possible" track violation and is subject to a nominal fine. This money is transferred to our Community Trust Fund which awards grands to community projects.

As always, safety is paramouth and there may be cases which involve vectoring an aircraft sooner than at the NPR height restriction. If ATC identifies any valid justification that could explain the deviation from the track, then the operator causing it will be exempt from the fine. Valid justifications include:

- Safety or operational reasons, i.e ATC vectoring
- Weather avoidance due to thunderstorm activity (as instructed by ATC)
- Emergencies

The diagram below shows off-track violations by month in 2016. The track keeping performance was 99.6%. This calculation includes deviations for weather, traffic avoidance and those identified as violations.



The breakdown of the violations by aircraft type is shown in the tables below.

A/C Type	№ Violations
GLF6	11
CLF4	6
GL5T	5
C25A, C56X, CL30, CL60, F2TH	20
ATP, A320, GLEX	9
A321, C550, E55P, FA7X, GLF5, LJ55, MD82	14
A333, B732, B734, B737, B738, B752, B753, B763, BE40, C500, C510, C525, C560, C650, C680, CRJ2, E35L, E50P, F50, F900, G280, GALX, H25B, LJ31, PC12, SW4	26
TOTAL	**91**

£75,700, the total of all collected fines transferred to Community Trust Fund

Area Navigation (RNAV) procedures

Following on from a successful consultation, in which over 90% of feedback received from over 1400 responses was in favour of the new route, RNAV1 flight procedures were introduced on our westerly Match/Detling departure route on the 20th August 2015. This was designed to keep aircraft much closer to the centreline of the route using modern GPS procedures as opposed to older ground based radio beacons. This also allowed a reduction in the width of the corridor from 3km to 2km and means the number of people directly overflown has been reduced from approximately 13,000 to 3,000 people.

After implementation the Flight Operations Team at London Luton Airport closely monitored the route. For the majority of flights we saw RNAV working as predicted which had positive effects for our local communities. However, there were some track adherance issues with a small number of aircraft types, which resulted in some aircraft flying further south before turning over Hemel Hempstead and others cutting the corner of the route and flying directly over Flamstead. Until we could understand the full issue at hand, these operators were stopped from using RNAV route and reverted to the conventional route until the technical issues have been resolved.

In collaboration with the operators and aircraft manufacturers, LLA found a possible solution to the issue. The RNAV flight procedure a slight amendment and validation before being submitted to the CAA for approval, and implementation. The solution has been tested to ensure that it would work for all operators and not have any negative effect on those already using the RNAV procedure. The proposal was submitted to the CAA in July 2016 and notification of approval was received in October 2016. The amended procedure will be implemented in February 2017.

The final step of the Airspace Change Process is the Post-Implementation Review (PIR). This is usually conducted by the CAA twelve months after implementation; however, as there were only 85% of aircraft using the route in 2016 and implementation of the amended procedure is scheduled for February 2017, the review was delayed. CAA will confirm timescales and a list of PIR requirements in 2017.

Next Steps in Airspace Change

Aircraft currently departing on the 26 Match/Detling route, have a number of altitude constraints due to the interaction with other neighbouring airport flight paths, London Luton Airport is planning to explore the opportunities to remove these constraints when safe and possible to do so.

LLA is still exploring options for the Required Navigation Performance (RNP) route design; the location of RNP route needs to be carefully considered and LLA will be exploring the options of RNP in conjunction with increasing the altitude of aircraft. Investigations with NATS are ongoing to understand what steps need to be taken in order to achieve this.

Following this work, the next step within our programme would be to adopt new modernised procedures on the remainder of our departure routes and also our arrival routes.

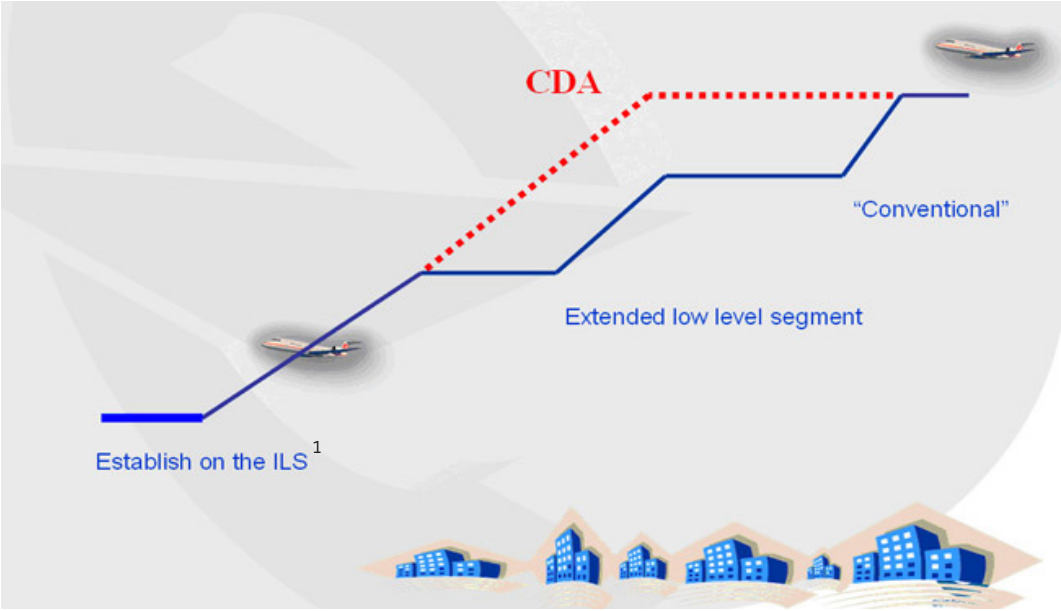
The Sky's the Limit

The London airspace is a particularly busy area and requires modernisation. The current airspace has not changed in the last 50 years despite the increase in movements from all airports. It is critical that the industry and Government now work together to deliver modernisation. In 2016, an industry campaign 'The Sky's the Limit' was set up to call on the Government to prioritise its work on airspace, noise and support industry efforts to do so. London Luton Airport strongly supports this campaign.

More information and videos regarding The Sky's the Limit campaign are available on their website which can be accessed http://theskysthelimit.aero/

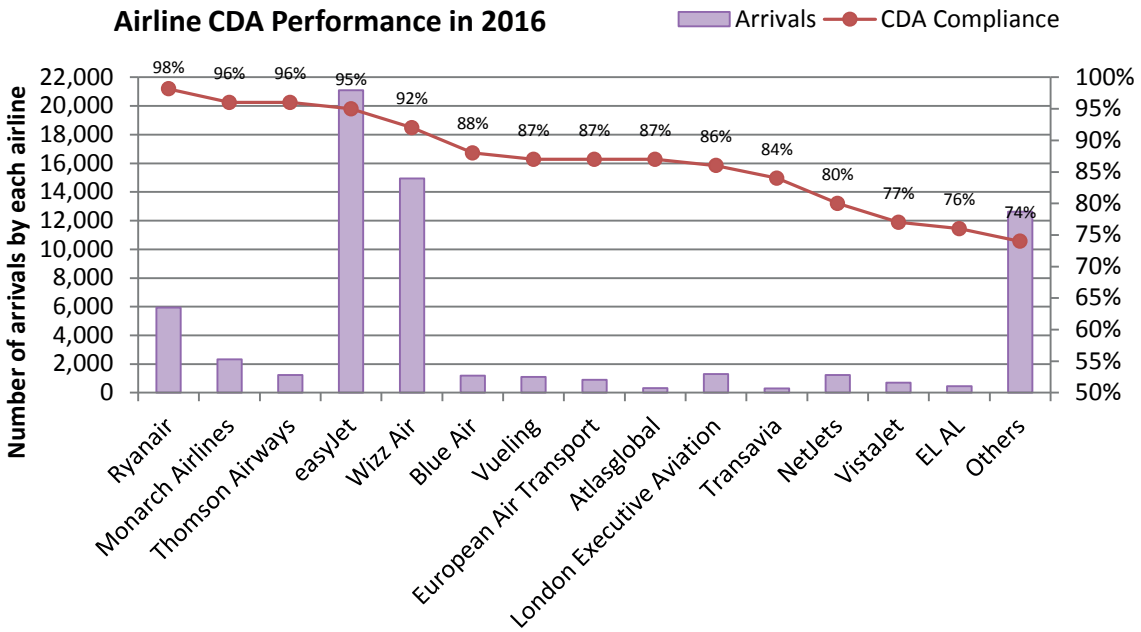
Arriving Aircraft

Although there are no set routes for arriving aircraft there are long established procedures to mitigate the disturbance that can be caused on approach to the airfield. One of the most successful measures is a noise mitigation procedure called Continuous Descent Approach (CDA).



The conventional approach involves descending in steps using engine thrust to level off. In a Continuous Descent Approach, or CDA, an aircraft stays higher for longer and descends at a continuous rate to the runway threshold therefore reducing periods of prolonged level flight at lower altitudes. With CDA less fuel is burnt, less emissions are produced but most importantly it reduces the noise by avoiding the use of engine thrust required for level flight.

The overall CDA achievement was 90% with several major LLA operators achieving higher performance; easyJet, Wizz Air, Ryanair, Monarch and Thomson Airways. The chart compares the level of CDA performance by our main airline operators.



[1] - An Instrument Landing System (ILS) is a ground-based instrument approach aid based on two radio beams which together provide lateral and vertical guidance to an aircraft approaching and landing on a runway.

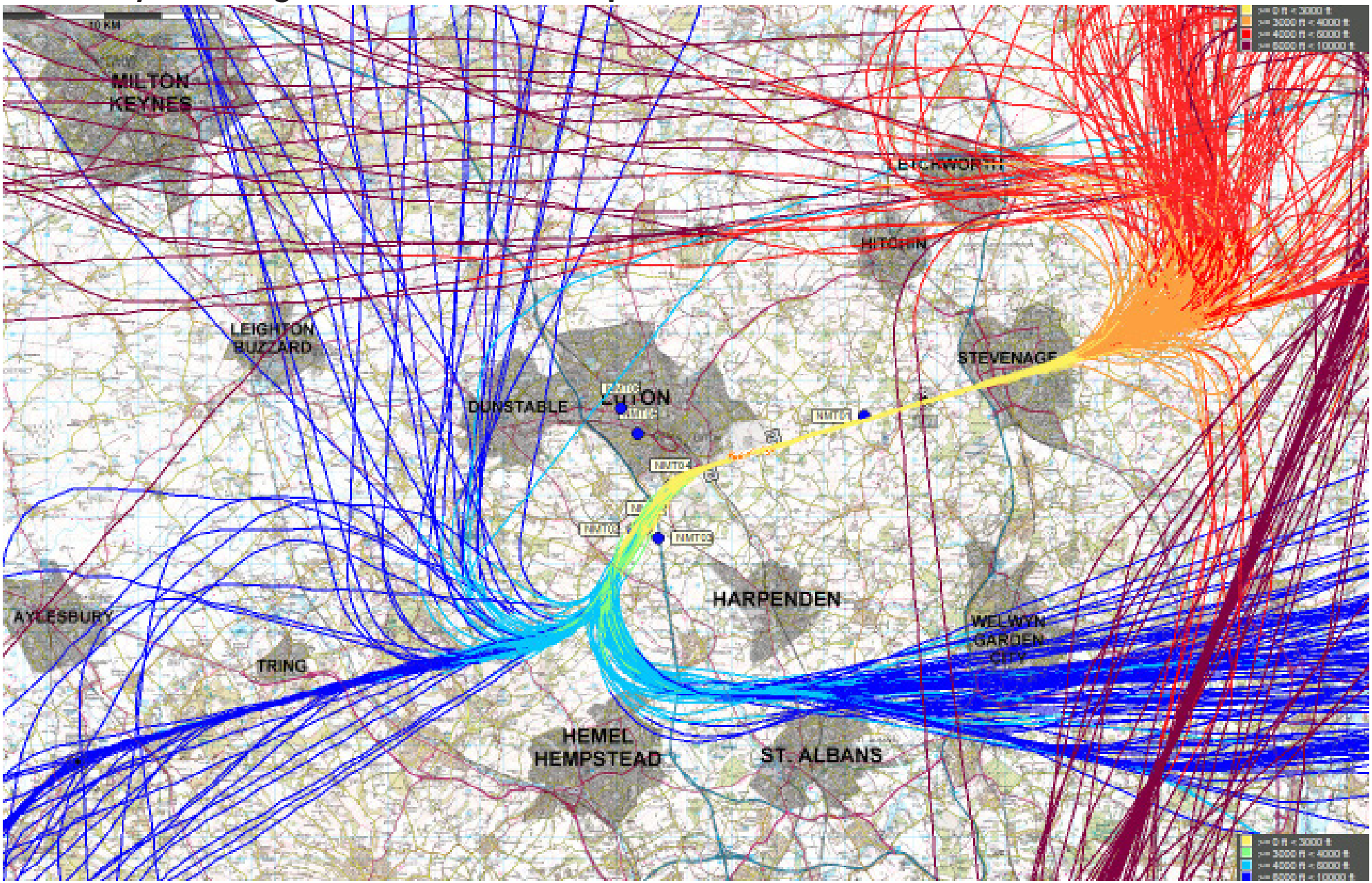
Departure and arrival flight tracks

Maps overleaf display typical 24 hour periods of both westerly and easterly operations, with arriving traffic in red and with departing aircraft tracks in blue. The colour coding from yellow to brown and from yellow to dark blue represents different altitude bands up to 10,000ft above mean sea level.

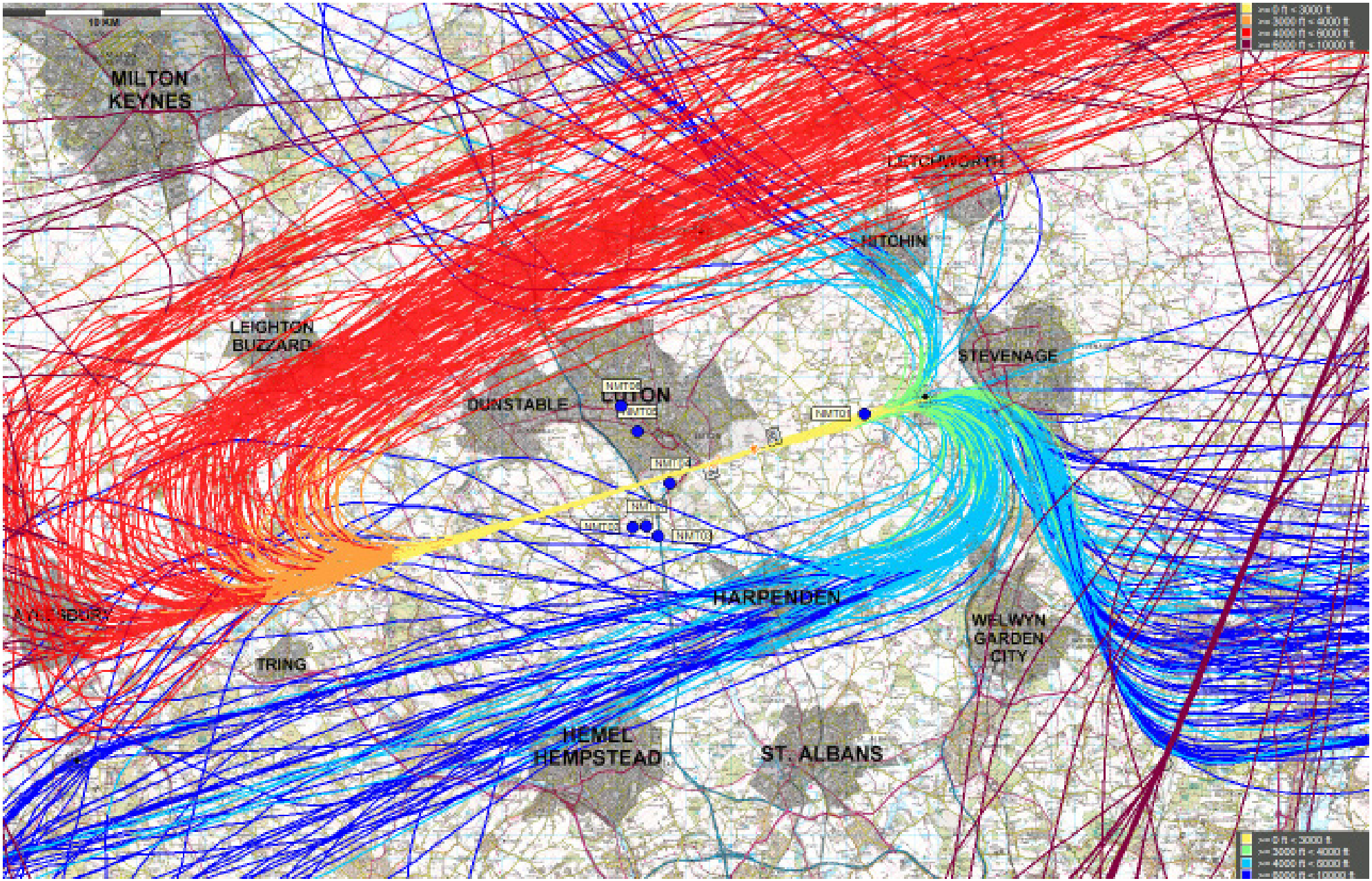
The last two maps display aircraft track density plots for the summer period 16th June - 15th September 2016. A track density plot is a map which displays the pattern of aircraft flight track passing over the region around the airport during a specific period. The system analyses the number of flights passing over each grid element of an array. The colour coding from purple to red represents the range 1 to over 147 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element was less than 1 flight. The red areas represent locations where operations are more densely concentrated.

It should be noted that London Luton Airport's aircraft movements integrate with a traffic network travelling to and from other airports in the region, and the South East is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton Airport and overflights from other airports have been omitted for clarity.

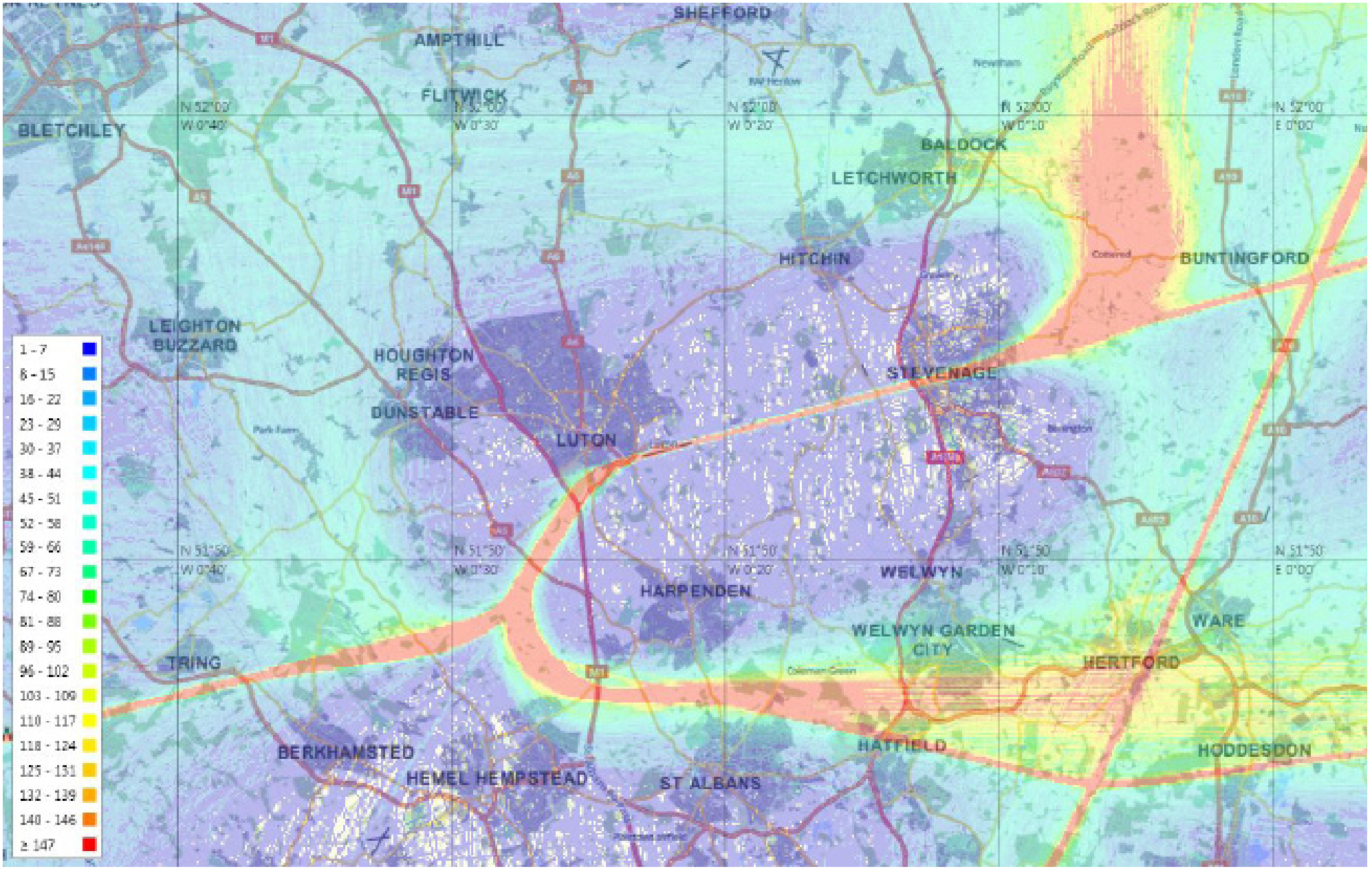
Westerly (26) Flight Routes (24 hour period)



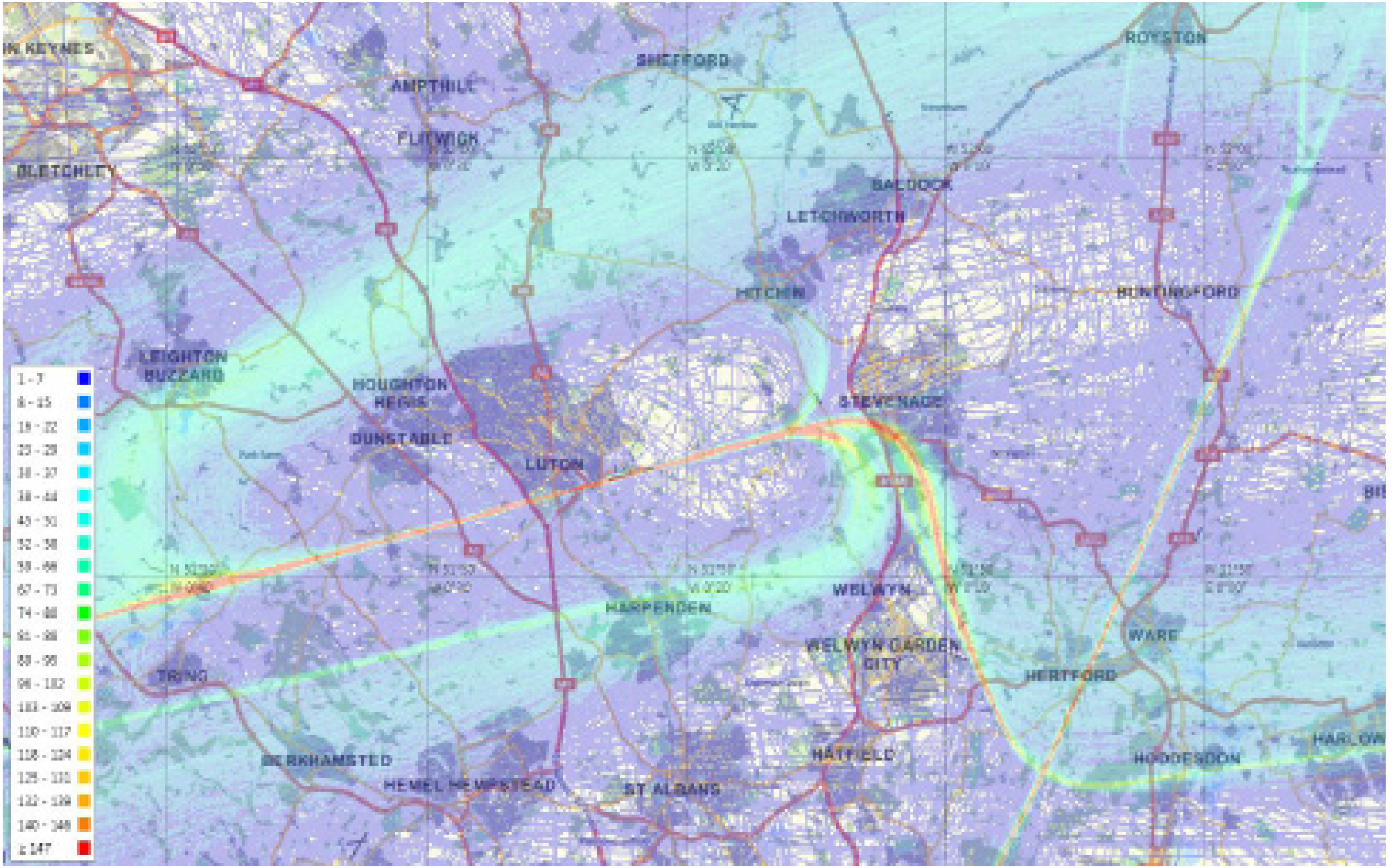
Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2016 - Westerly (26)



Plot Density - 16th June - 15th September 2016 - Easterly (08)



Aircraft Noise

Noise is generally defined as unwanted sound. Although it is recognised that noise perception is very subjective, there are a number of internationally recognised terms to describe and measure aircraft noise. Most airport related noise is created by aircraft approaching, taking-off and taxiing to and from the runway. The management and control of noise continues to be a major element of the airport's policy to constantly seek to minimise and mitigate our environmental impact.

How is noise monitored?

People who live close to airports or under flight paths can often feel strongly about the disturbance to their lives from noise. Effects of noise include general distraction, speech interference and sleep disturbance which can lead to annoyance and complaints.

At LLA monitoring is provided by the Topsonic Aircraft Noise and Track Monitoring System. This system is designed to monitor air traffic within a radius around the airport (set at around 25 miles), and generally up to an altitude of 12,000ft. It downloads noise data from three fixed noise monitors located 6.5km from the aircraft start of roll, at either end of the runway within the neighbouring communities. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area.
New features and system enhancements continue to improve the functionality and capabilities available to the Flight Operations Department.

TraVis, an online flight-tracking tool enables the general public to see for themselves the actual flown tracks of LLA aircraft departures and arrivals. This can be viewed online at the following link on the airport website.
http://travisltn.topsonic.aero/

Noise violation levels

The following table identifies daytime and night-time noise levels correlated to departing aircraft at the fixed noise monitoring terminals.
Any aircraft exceeding the Daytime Noise Violation Limit of 82dB(A), between 07:00 hrs and 23:00 hrs and the Night-time Noise Violation Limit of 80dB(A), between 23:00 ana 07:00, is fined accordingly.

dB (A)	Daytime	NightTime	Total
<70	5,526	653	5,879
70	1,828	219	2,047
71	3,557	372	3,929
72	6,362	612	6,974
73	9,088	881	9,969
74	9,019	848	9,867
75	6,434	636	7,070
76	3,175	382	3,557
77	1,652	288	1,940
78	915	161	1,076
79	393	83	476
80	153	26	179
81	43	2	45
82	28	0	28
83	8	0	8
84	4	0	4
85	7	0	7
86	0	1	1
87	0	0	0
88	1	0	1
89	0	0	0
90	0	0	0

Number of Correlated Events

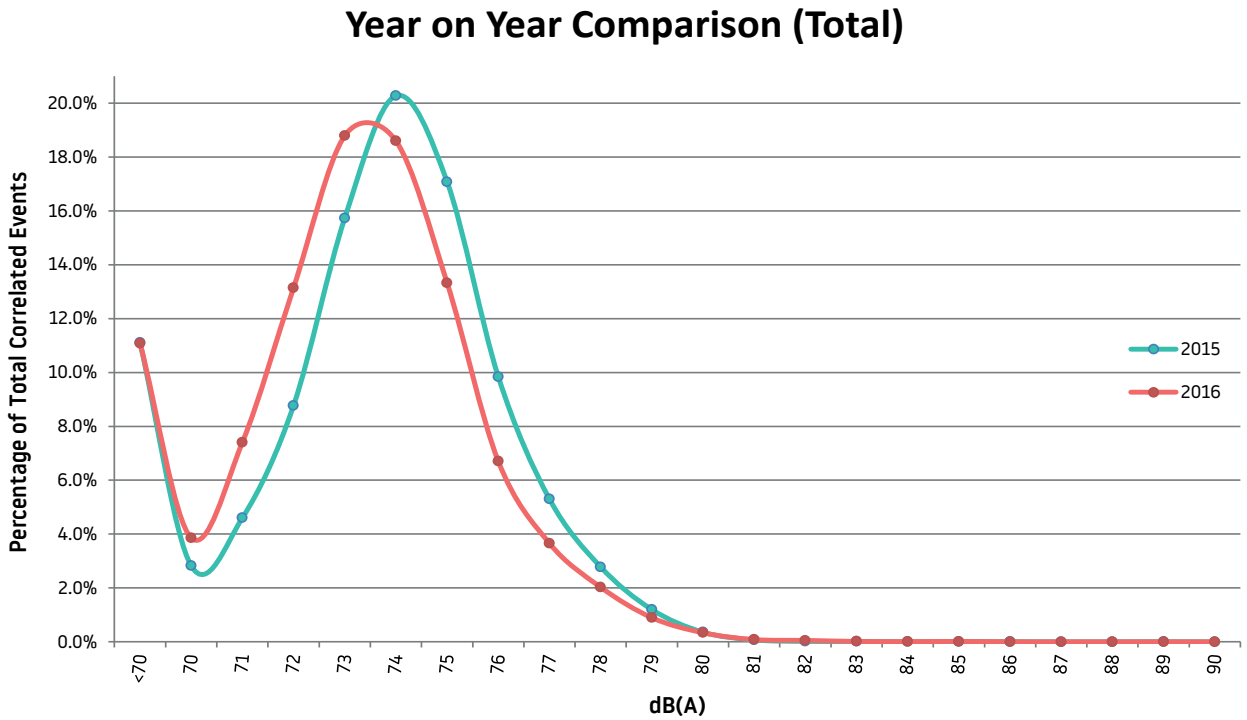
During the daytime 99% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 87% registering below 76dB(A). Throughout the year 637 correlated daytime departures (1%) registered maximum noise levels at 79dB(A) or above.

There were 21 correlated departing aircraft which recorded a maxiumum noise level greater than 82dB, all of these departures were fined as part of the Noise Violation Limits, these fines were added to the Community Trust Fund.

During the night 98% of correlated departures recorded maximum noise levels below 79dB(A), with 82% below 76dB(A). During the year 112 correlated night departures (2%) registered maximum noise levels at or above 79dB(A).

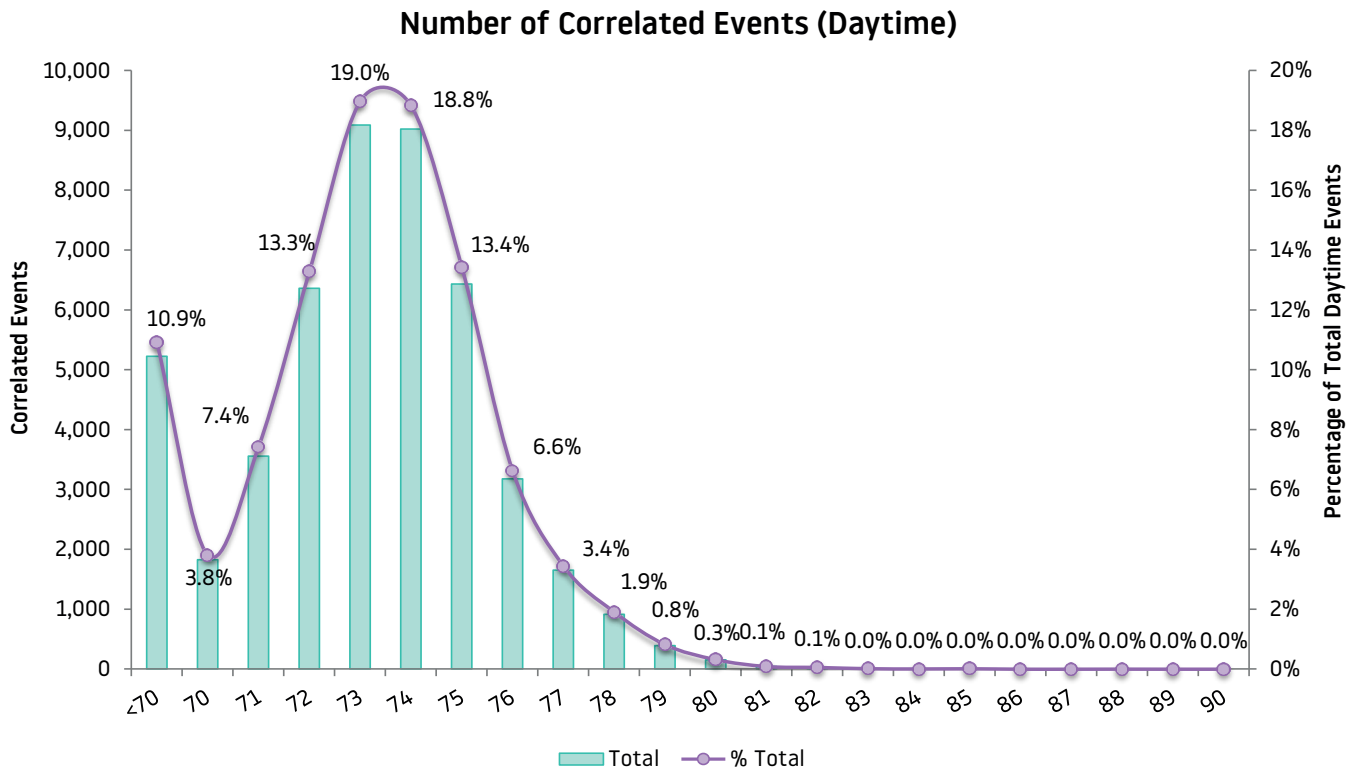
There were 3 correlated departing aircraft which recorded a maxiumum noise level greater than 80dB, all of these departures were fined as part of the Noise Violation Limits, these fines are put into the Community Trust Fund.

The graph below shows the year on year comparison of the correlated departure noise events.



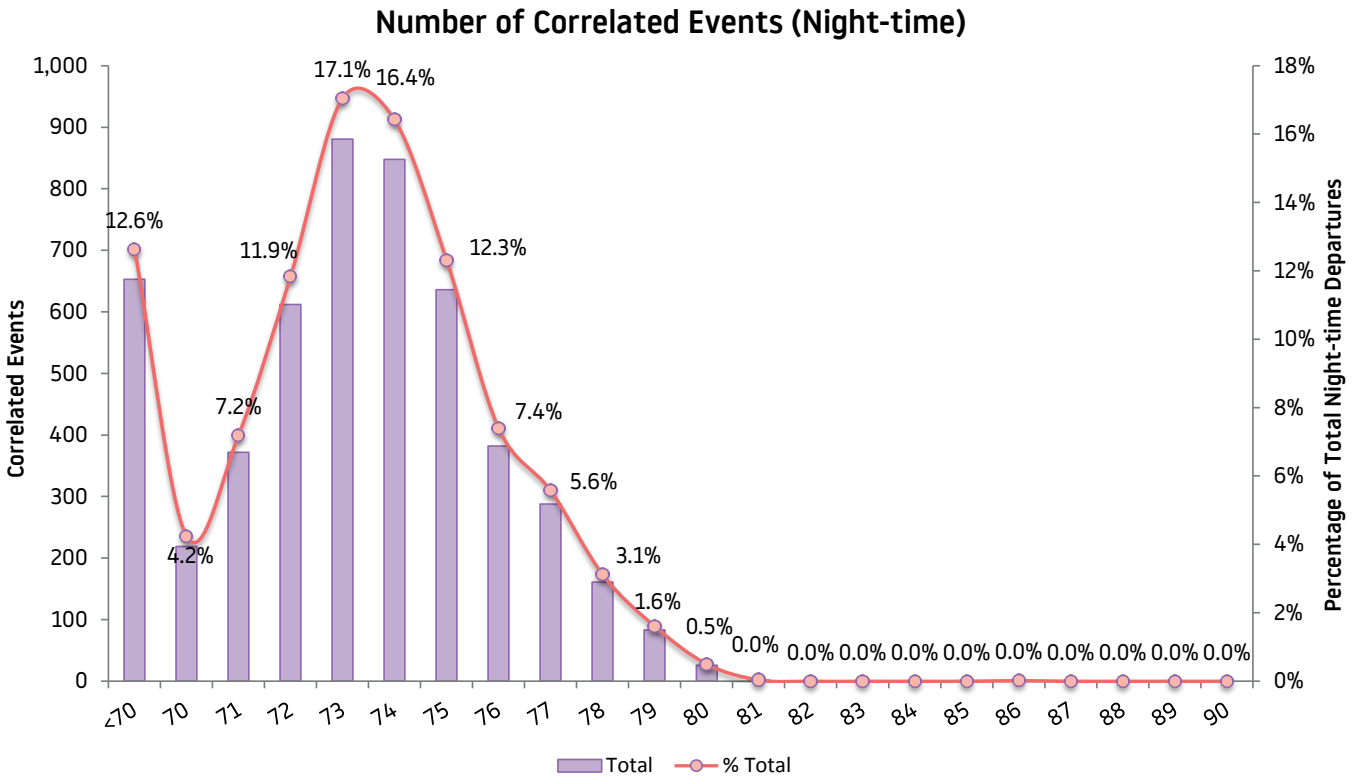
Daytime Noise

The following graph shows the number of correlated events during the daytime period (07:00hrs - 23:00hrs) compared to the total percentage of correlated events during the daytime.



Night-time Noise

The following graph shows the number of correlated events during the night-time period (23:00hrs - 07:00hrs) compared to the total percentage of correlated events during the night-time.



Noise violations during 2016

There were 21 violations of the daytime noise level in 2016, and a total of 3 violations of the 80dB(A) night noise violation level (details below), compared to 15 day-time noise violations and 9 night noise violations in 2015. Operators at London Luton Airport take these noise violation limits very seriously and in some cases these have led to changes in operating procedures in order to reduce the noise from their aircraft. Additionally, some operators have even dismissed pilots as a result of a noise violation fine.

	Date / Time (Local)	Aircraft Type	Noise Level	Penalty
Daytime	05/01/2016	Boeing 737-200	86dB (A)	£500
	17/02/2016	Boeing 737-200	84dB (A)	£100
	26/02/2016	Boeing 727-200	85dB (A)	£100
	03/03/2016	Gulfstream III	85dB (A)	£100
	07/04/2016	Antonov 12	85dB (A)	£100
	13/04/2016	Boeing 737-200	85dB (A)	£100
	13/06/2016	MD-87	83dB (A)	£100
	03/07/2016	Dassault Falcon 900	84dB (A)	£100
	14/07/2016	MD-82	83dB (A)	£100
	15/07/2016	MD-82	83dB (A)	£100
	21/07/2016	MD-82	84dB (A)	£100
	22/07/2016	MD-82	85dB (A)	£100
	25/07/2016	MD-82	83dB (A)	£100
	05/08/2016	MD-82	83dB (A)	£100
	19/08/2016	MD-82	85dB (A)	£200
	19/08/2016	Boeing 737-200	88dB (A)	£500
	16/09/2016	MD-87	83dB (A)	£100
	18/09/2016	MD-87	83dB (A)	£100
	02/10/2016	Boeing 737-200	84dB (A)	£100
	28/11/2016	Boeing 737-200	85dB (A)	£100
	30/12/2016	Boeing 737-200	83dB (A)	£100
Night-time	05/01/2016	Antonov 12	86dB (A)	£500
	27/04/2016	Airbus A300	81dB (A)	£100
	01/12/2016	Boeing 737-800	81dB (A)	£100

All fines are passed to the London Luton airport Community Trust Fund, further details of which can be found at http://www.london-lutoninthecommunity.co.uk/content/1/3/community-trust-fund.html

Noise Insulation Scheme

In 2016 we started our Noise Insulation Scheme, which aims to assist in reducing the noise for properties in our local communities.The scheme covers both residential and non-residential properties. Depending on any existing insulation in the property, double glazing, secondary glazing and ventilation units can be provided. Rooms eligible for insulation include living rooms, dining rooms, kitchen-diners and bedrooms.

The Noise Insulation Sub-Committee selected 31 residential properties which would be prioritised for insulation in 2016. LLA contacted these 31 properties and 11 accepted the scheme.

Noise Contours

Since 1989 the preferred measure of aircraft noise, recognised by UK Government, has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700-2300 for an average day between the 16th June and 15th September.

When planning permission was given in 2014 for development at London Luton Airport a number of conditions were imposed. Condition 12 requires that daytime and night-time contours are produced on an annual basis for the previous summer period based on actual aircraft movement data and for the following summer period based on predicted aircraft movement data. The areas of these contours are to be compared to the area limits contained in Condition 12. Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the airport and also the departure routes flown. Changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, determined by the prevailing wind direction.

Annual noise contours summer 2016

The table below shows the annual noise contours for summer 2016 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM software (the Integrated Noise Model) version 7.0d which is the method used by many other airports in the UK.

$L_{Aeq, 16\ hour}$ **Daytime**	**Contour Area (km²)**					
	1984	1999	2015	2016	Difference 2015-2016	2017 (forecast)
>72	1.63	1.5	0.9	1.0	+0.1	1.1
>69	2.80	2.5	1.5	1.7	+0.2	1.8
>66	4.86	4.4	2.5	3.2	+0.7	3.3
>63	9.10	7.3	4.9	6.2	+1.3	6.3
>60	17.18	11.8	9.0	10.6	+1.6	11.2
>57	**31.52**	**19.6**	**17.2**	**19.2**	**+2.0**	**20.7**

Considering the summer 2015 daytime noise contour there is an increase in area of approximately 12% when comparing the 2016 contour with the 2015. This is generally in line with what would be expected based on the increase in movement numbers.

The 2017 contours are forecast to grow by 6 to 8% compared to the 2016 contours at the lower values, and by a smaller amount at the higher values. This is largely due to a forecast 8% increase in movement numbers. At 57 dB LAeq, 16h the 2017 contour is a similar shape but slightly larger than the 2016 contour.

$L_{Aeq, 8\ hour}$ **Night-time**						
	1984	1999	2015	2016	Difference 2015-2016	2017 (forecast)
>72	0.79	1.1	0.4	0.4	0.0	0.5
>69	1.39	1.8	0.6	0.6	0.0	0.8
>66	2.42	3.0	1.0	1.0	0.0	1.2
>63	4.01	5.2	1.7	1.7	0.0	2.0
>60	7.06	8.3	3.0	3.3	+0.3	3.7
>57	13.05	13.2	5.7	6.3	+0.6	6.9
>54	24.48	21.6	10.8	11.5	+0.7	12.9
>51	44.92	36.0	20.2	20.7	+0.5	23.6
>48	**85.04**	**60.6**	**35.3**	**36.5**	**+1.2**	**40.2**

Considering the 48 dB LAeq,8h night time noise contour there is an increase in area of approximately 3% when comparing the 2016 contour with the 2015 contour, while some of the higher value contours, 54 to 60 dB LAeq,8h, have increased in area by around 10%. This is largely due to the increase in movement numbers, although the departure movements, which make the most noise, have remained similar, with the increase comprising mainly arrivals.The 48 dB LAeq,8h 2017 contour is forecast to grow by 10% compared to the 2016 contour. This is largely due to a forecast 8% increase in movement numbers.

The 2016 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented.

Contour population counts

The population counts for this year were calculated using the CACI Ltd, 2015 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted.

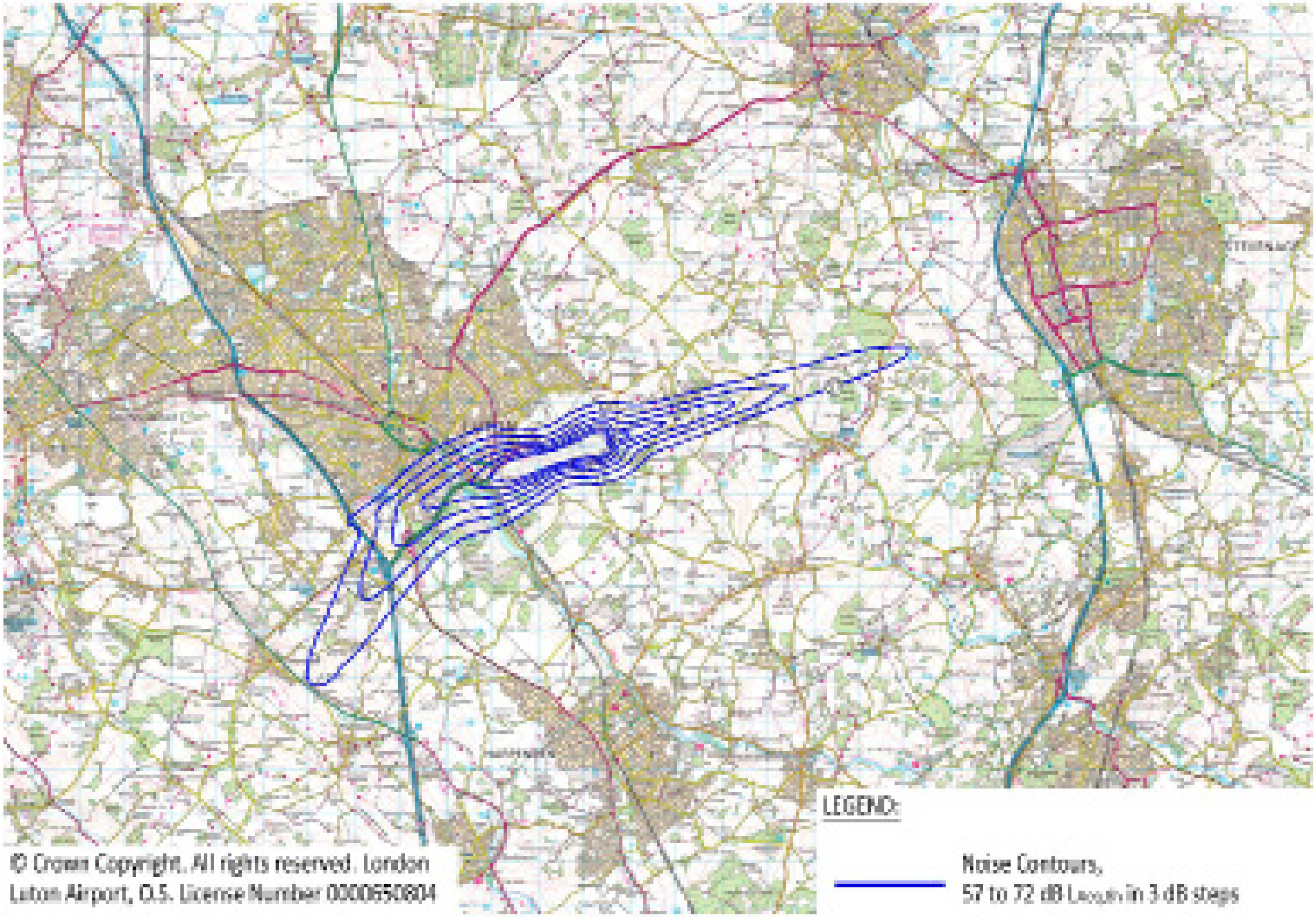
$L_{Aeq, 16\ hour}$ Daytime	2015		2016	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	250	700	700	1,800
>60	750	2,200	1,700	4,500
>57	**2,600**	**7,100**	**3,600**	**8,900**

When looking at the daytime results there are increases in the numbers of dwellings and the population within the contours when comparing 2016 with 2015. For the summer 2015 daytime contour the increase is around 40% and for the higher value contours the increase is significantly greater. This is due to the greater activity in 2016 leading to an increase in the area of the contours, which is around 12% at 57 dB. A further factor is that the population is not evenly distributed across the contour area. In particular the majority of the population is located in South Luton. The 2015 contour only included the southern edge of this area, whereas the 2016 contours extend slightly further north. This means that although the aircraft noise exposure change associated with the contour area increase is relatively small, it is enough to move a significant population from just outside to inside the contour.

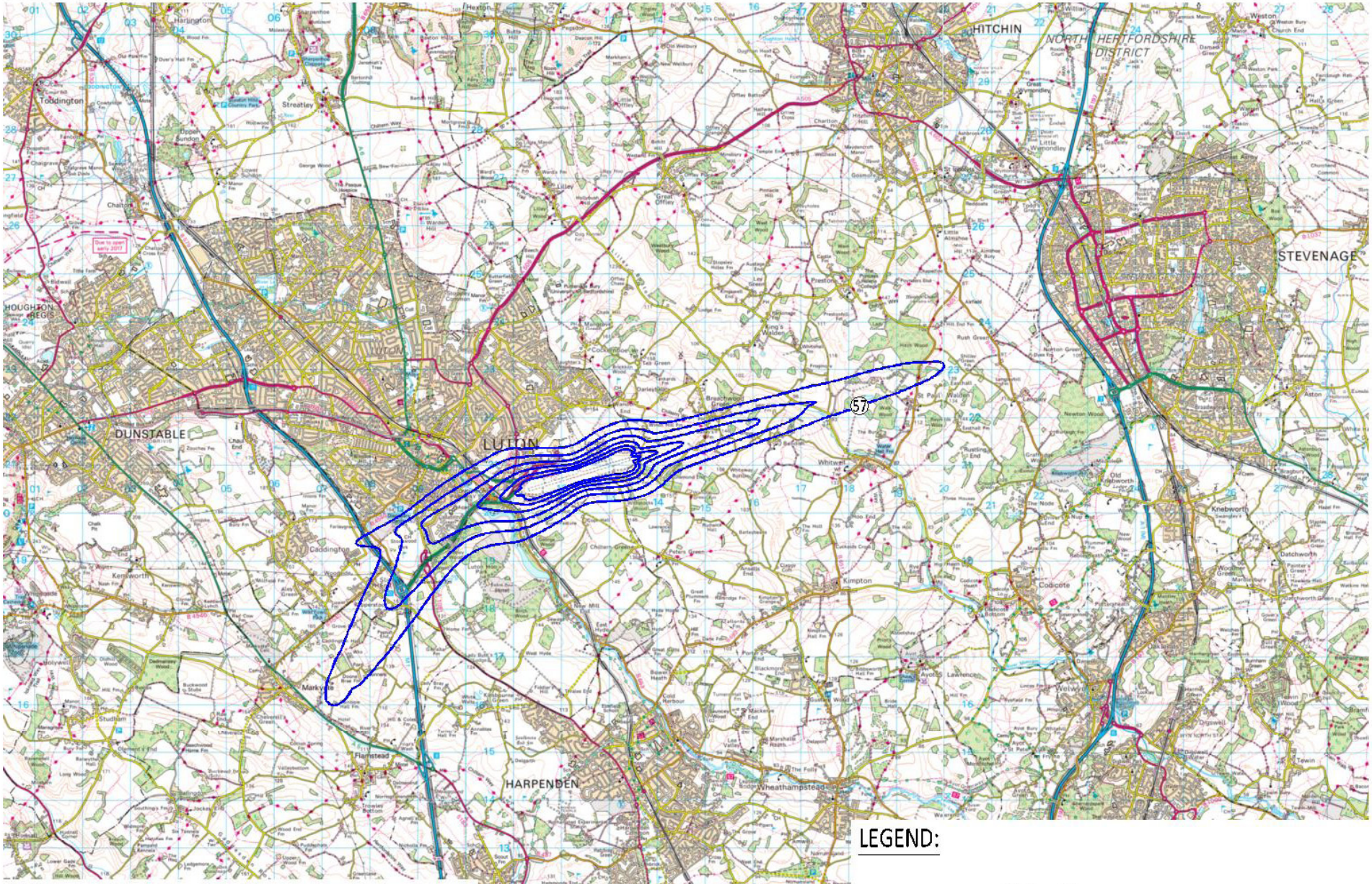
$L_{Aeq, 8\ hour}$ Night-time	2015		2016	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	0	0	0	0
>57	400	1,200	500	1,300
>54	1,050	3,000	1,550	4,200
>51	2,850	7,700	3,250	8,100
>48	**5,550**	**14,700**	**6,750**	**16,100**

For the night-time contours there are increases in the numbers of dwellings and the population within the contours when comparing 2016 with 2015 although these are less than during the daytime, for example for the 48 dB LAeq8h contour the increase in the population is around 10%. For the daytime contours the increases are due to the greater size of 2016 contours, which is around 3% at 48 dB LAeq. The contours extend slightly further into populated areas. For example in 2015,the eastern end of the 48 dB contour is largely restricted to industrial and commercial area of Stevenage whereas the 2016 contour extends further and so includes some residential properties.

Annual Day Noise Contours Summer 2016



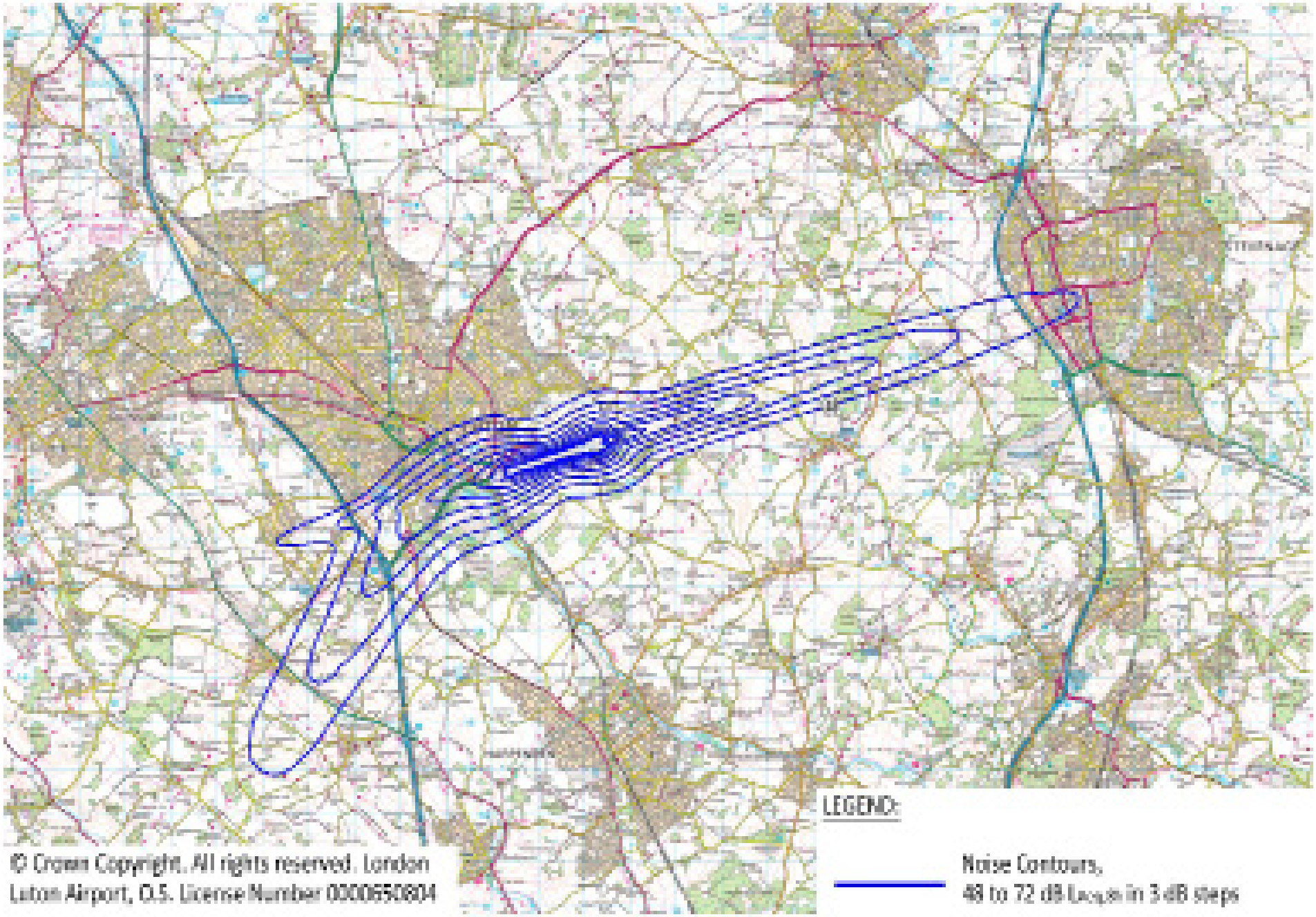
Annual Day Noise Contours Summer 2015



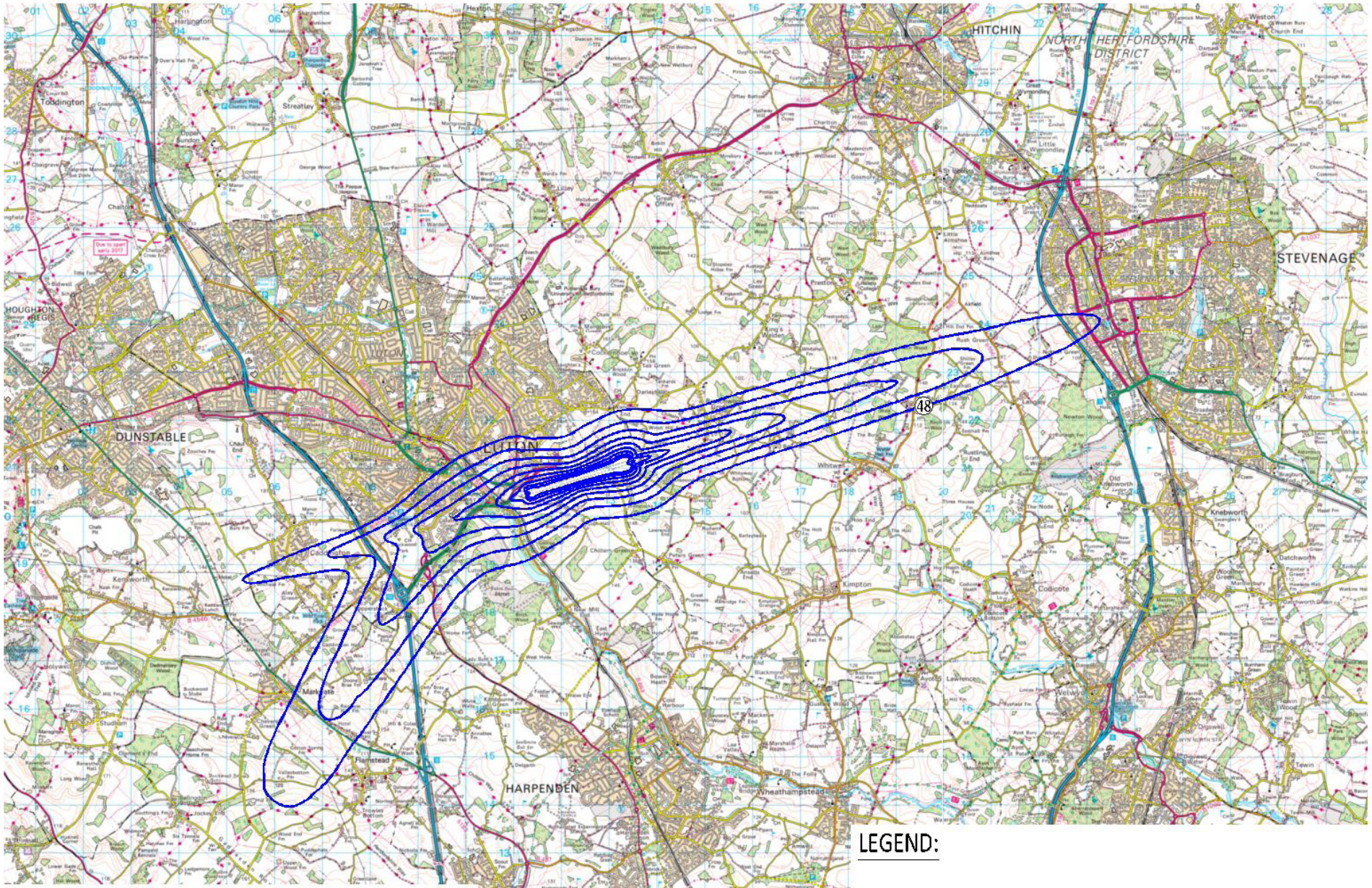
LEGEND:

Noise Contours,
57 to 72 dB $L_{Aeq,16h}$ in 3 dB steps

Annual Night Noise Contours Summer 2016



Annual Night Noise Contours Summer 2015



LEGEND:

Noise Contours,
48 to 72 dB $L_{Aeq,8h}$ in 3 dB steps

Annual Noise Contours 2016

The annual Lden noise contours for 2016 have been produced in accordance with London Luton Airport's Noise Action Plan. The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Compared to annual summer 2016 noise contours Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2016, with a 10dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2016.

Annual Lden Noise Contour Results

Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2015	2016	2015	2016	2015	2016
>75	0.8	0.8	0	0	0	0
>70	1.7	1.9	0	0	0	0
>65	4.7	5.5	500	1,100	200	450
>60	13.6	15.2	4,700	5,700	1,700	2,200
>55	**35.7**	**39.3**	**14,800**	**17,100**	**5,550**	**7,000**

Annual Lnight Noise Contour Results

Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2015	2016	2015	2016	2015	2016
>66	0.8	0.9	0	0	0	0
>63	1.3	1.4	0	0	0	0
>60	2.2	2.4	0	0	0	0
>57	4.3	4.7	400	500	150	200
>54	7.8	8.5	2,000	2,100	700	800
>51	15.0	16.3	5,200	6,000	1,850	2,300
>48	**27.1**	**29.3**	**10,900**	**11,600**	**4,100**	**4,800**

The areas of every Lden contour have increased except the area of the 75 dB Lden contour, which has remained the same. The increases are relatively consistent across contour bands, ranging from 10-17%, and are in line with what would be expected due to the increase in aircraft movements.

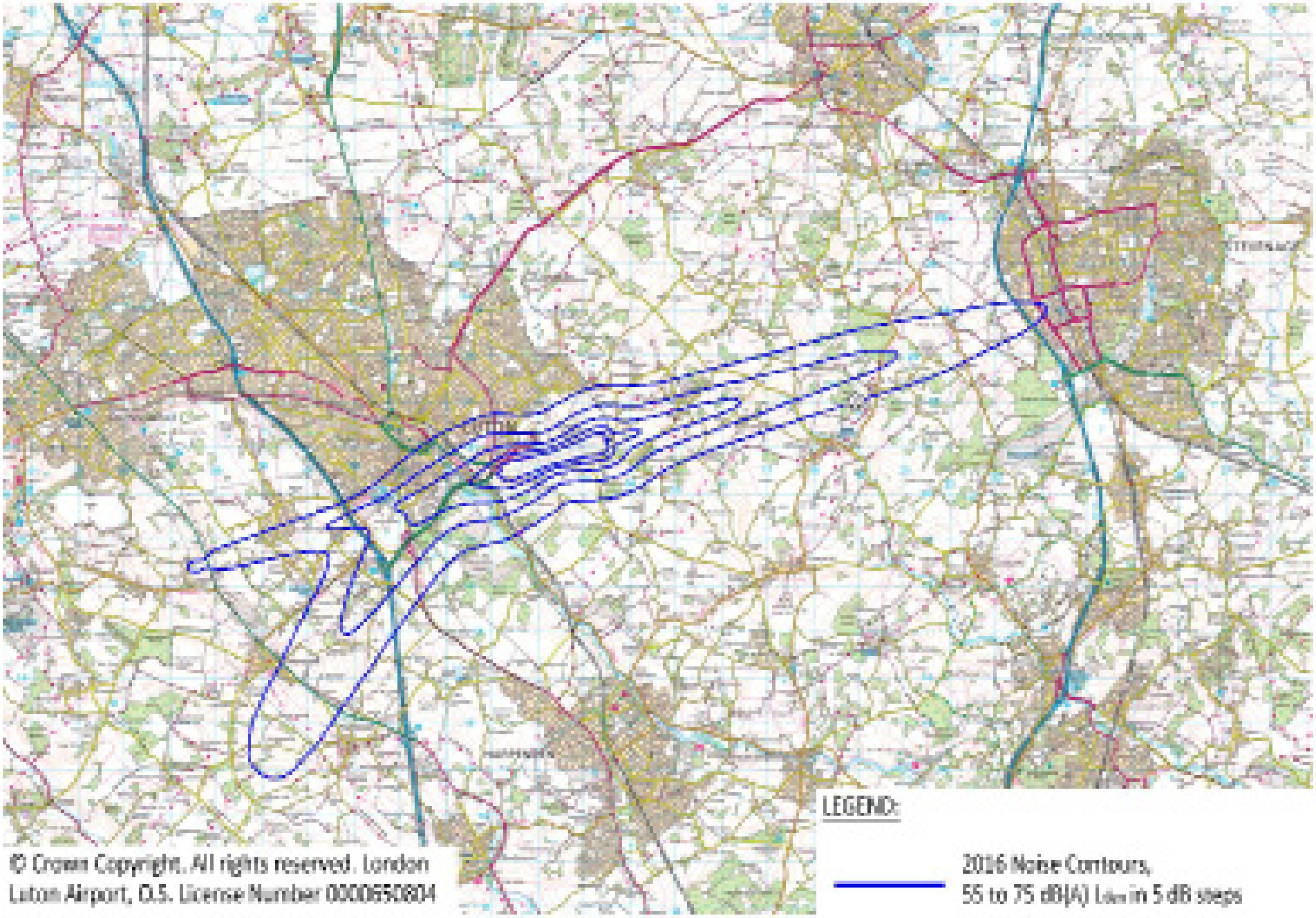
Similarly the areas of all the Lnight contours have increased by around 8-9%.

The population and dwellings within the contours has increased, due to the increasing areas. The contour shape is similar, but slightly larger in 2016.

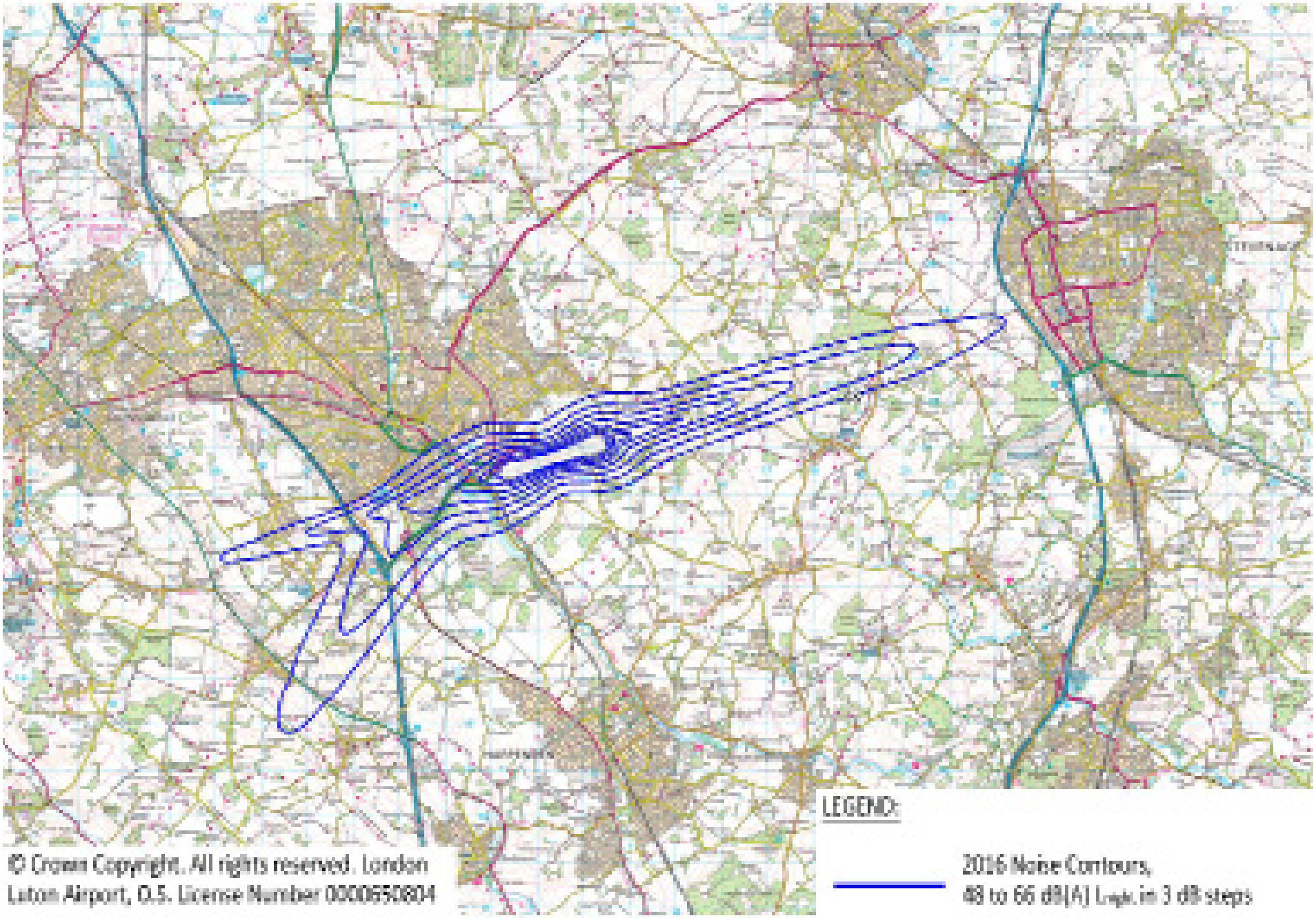
[1] - Population counts rounded to nearest 100

[2] - Dwelling counts rounded to nearest 50

Annual L_{den} Noise Contours 2016



Annual L_{night} Noise Contours 2016



Correspondence and Complaints

On the 1st January 2016 the airport implemented a new complaints policy. This was aimed to remove the confusion relating to the 'Events' section of the reporting. Complaints will now be reported in two forms – General disturbance and Specific disturbance. A General disturbance relates to a complaint that does not specify a time period, examples of this type of complaint includes frequency, air quality and ground noise. A specific complaint relates to a complaint which specifies the time which can be correlated to an aircraft, example complaints of this type include too low, too loud, night flight and off-track. If a single piece of correspondence contains multiple specific disturbances, this will be logged as a general complaint regarding frequency.

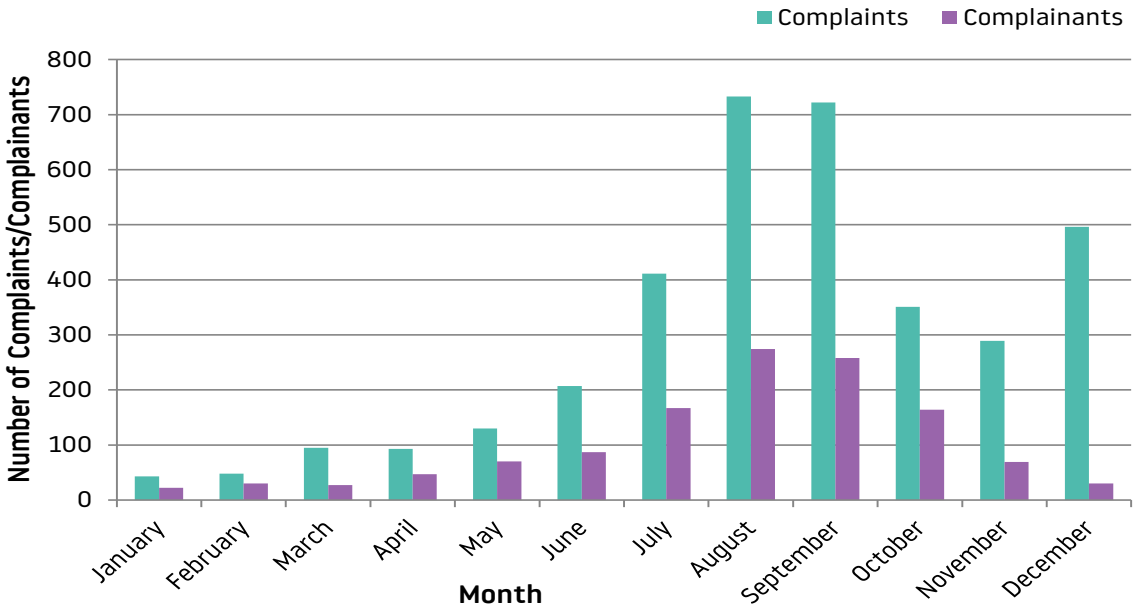
Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

Total complaints relating to LLA aircraft operations

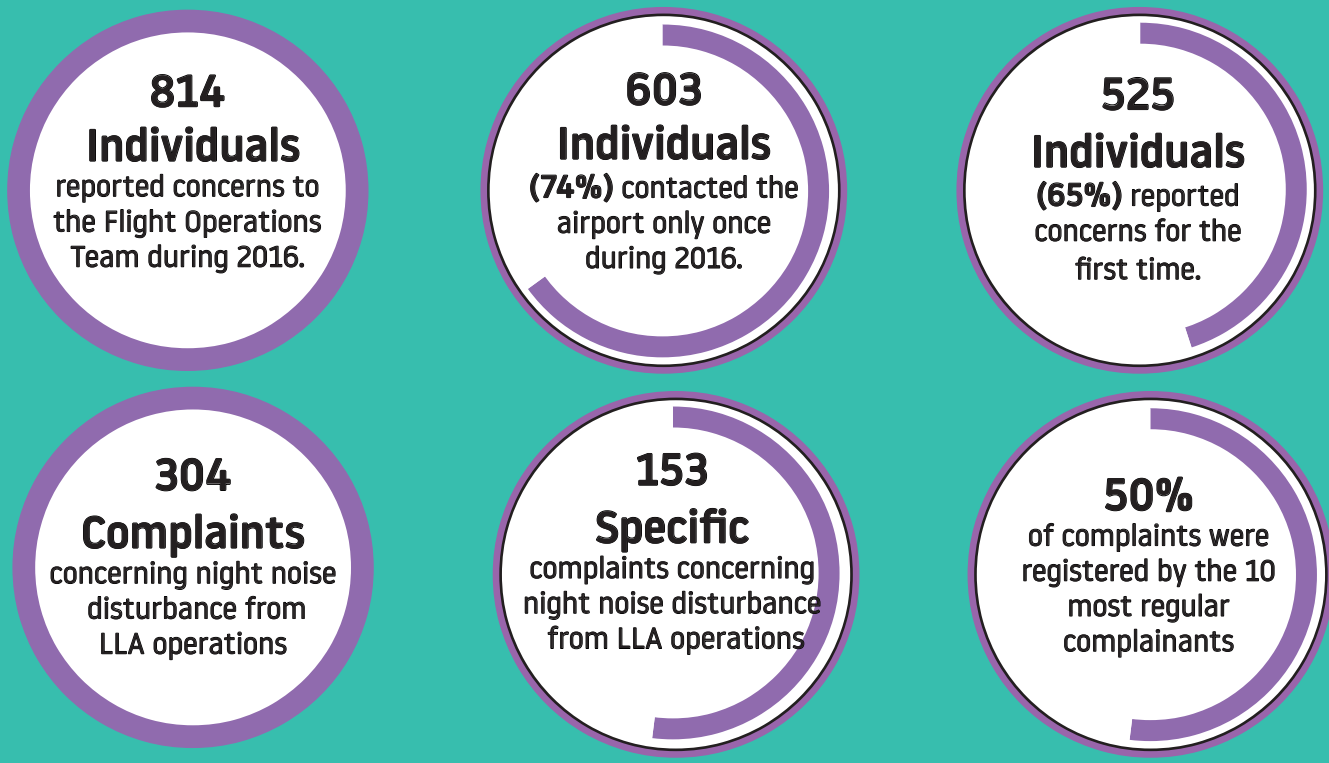
	2015*	2016**
Total No. of Complaints relating to LLA aircraft operations	-	3,612
No. of Complainants	355	814
No. of General Complaints	-	1,174
No. of Specific Complaints	-	2,438
No. of Events (eliciting a complaint)	1,098	-
Average No. of Complaints per Complainant	2.7	4.4
No. of Aircraft Movements per Complaint	121	

During 2016 a total of 3,612 complaints (on average 10 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 1,098 events in 2015. Out of the total complaints 50% were registered by the 10 most regular complainants. A further 87 complaints received were not attributable to LLA traffic.

The figure below shows the complaints statistics throughout 2016. More complaints were received in the summer months, correlating with an increase in aircraft activity.



*- Figures excluding 1,454 events reported by two individuals, one resident in Kensworth and one resident in St Albans
** Figures excluding 619 complaints received from one resident in St Albans.

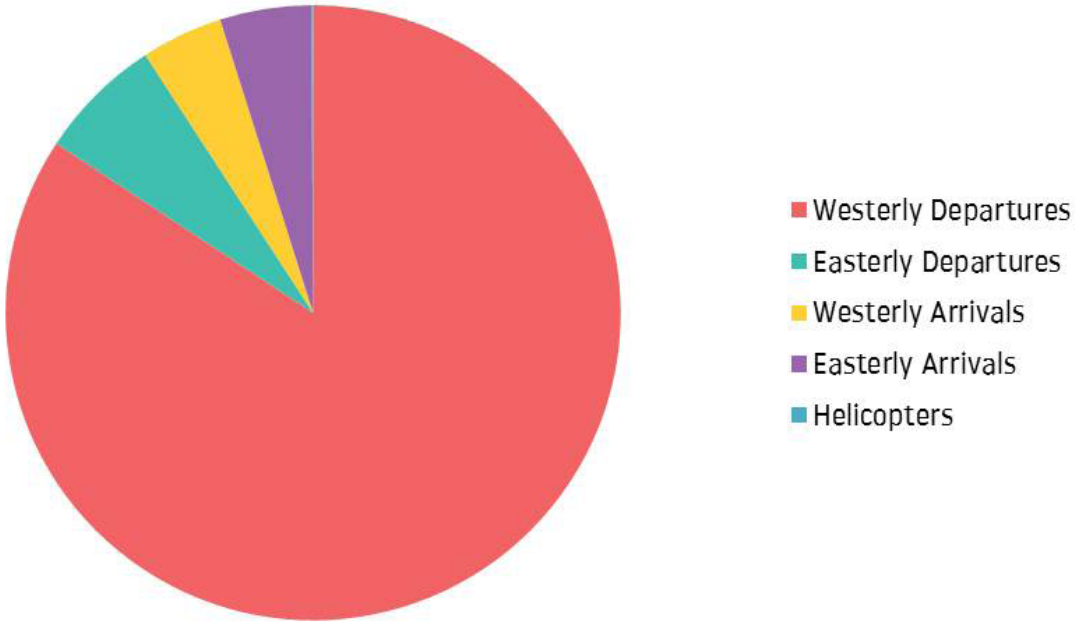


Complaints by aircraft type

Of the 3,612 complaints relating to LLA aircraft operations registered during the year 2,309 complaints (64%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The table below shows aircraft types generating complaints.

Aircraft Type	No. of Correlated Complaints	% of Correlated Complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per Correlated Complaint
A319	276	11.95%	28,131	102
A320	1058	45.82%	45,281	43
A321	212	9.18%	6,673	31
B737-800	284	12.30%	15,471	54
A306 (Cargo)	69	2.99%	1,134	16
B737-400	85	3.68%	1,446	17
GLF4/GLF5/GLF6	20	0.87%	5,053	253
ATP	11	0.48%	476	43
B757 & B767	70	3.03%	1,671	24
B737-300	20	0.87%	394	20
B737-200	5	0.22%	52	10
Helicopter	2	0.09%	573	287
CL30/CL60	24	1.04%	2,480	103
GLEX/GL5T	29	1.26%	476	43
Other Private Aircraft	81	3.51%	17,927	221
Other Cargo Aircraft	5	0.22%	28	6
Other Passenger Aircraft	58	2.51%	839	14

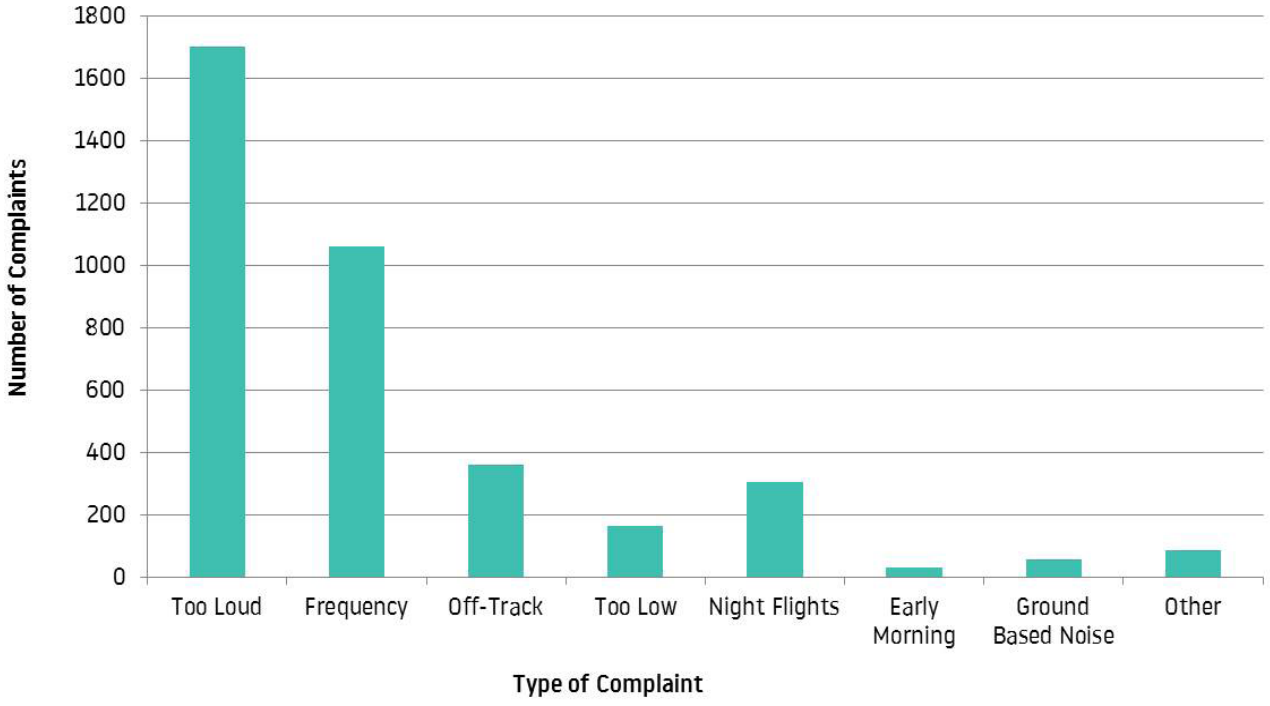
Nature of Disturbance



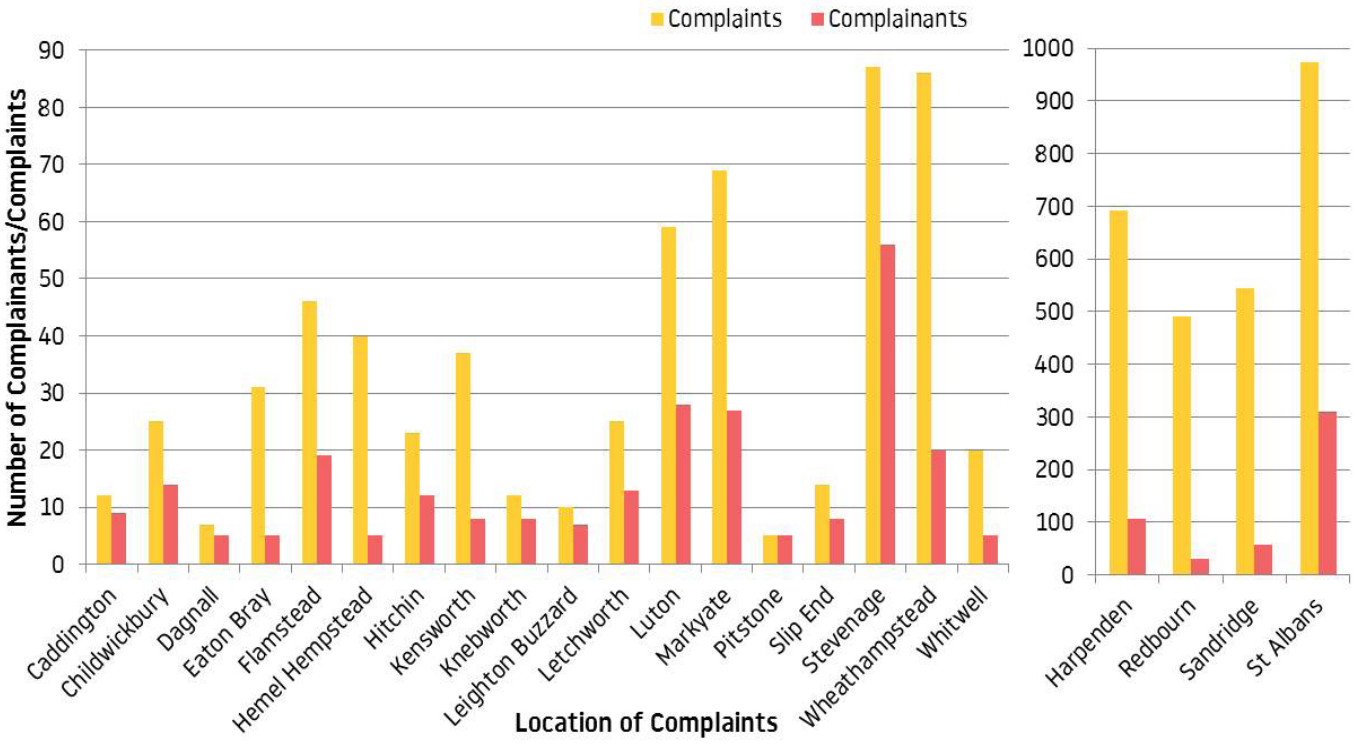
Within the 1,946 specific complaints correlated to aircraft movements concerning westerly departures, 1,898 reported specific aircraft following the Match/ Detling route, 33 related to aircraft on the Compton route and 8 related to aircraft following the Olney heading.

Seven other complaints involved positioning flights following off-airways flight routes. Of the 151 complaints specifically attributed to easterly departures 112 related to aircraft following the Compton heading, 14 related to aircraft on Olney flight route and 18 to aircraft on the Match/Detling heading.

A further 7 complaints involved positioning flights following off-airways flight routes. Out of the total 2,309 complaints correlated to specific aircraft, 99 related aircraft arriving at the airport during westerly operaitons and and 111 complaints related to easterly arrivals.



Location of Complainants (5+)



The map on the following page shows the location of complaints compared to distance from airport.

Location of Complaints 2016

Communication method

The following table shows the method of communication used to contact London Luton Airport regarding noise.

Communication Method	% of Total Complaints
TraVis	59%
Email	30%
Telephone	10%
Letter	1%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Flight Operations Team by the following means:

Postal Address **Flight Operations**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY
Direct Telephone **(01582) 395382 (24 hours)**
Direct email **noise@ltn.aero**
TraVis **www.travisltn.topsonic.aero**

Complaints analysis

During 2016 there was an increase in complaints compared to 2015; this is thought to be due to a number of reasons:

• The airport has grown considerably during 2016, in line with the redevelopment plans. This will have caused an increase in the number of movements on all routes.
• A large number of complaints were generated by a small number of people. The 10 most regular complainants in 2016 created 50% of total complaints.
• High numbers of complaints were recorded from specific locations, for example Harpenden, Redbourn, Sandridge and St Albans. Complaints from these areas accounted for 78% of total complaints. In these areas there is a heightened awareness of aircraft, particularly in relation to the recent growth and RNAV implementation in 2015.
• Upgrades to TraVis at the start of 2016 means it is now easier for residents to complain about more than one aircraft. This is less time consuming than the previous process.
• As winds dictated westerly operations for 70% of the time, the largest percentage of complaints related to aircraft operations during westerlies.

Noise Action Plan

The table below provides an update on the actions in the Noise Action Plan.

	Action	Timescale
1	Operate and maintain a noise and track-keeping system to monitor aircraft operations, reporting statistics quarterly to the LLACC (via NTSC)	Ongoing
2	Produce Lden noise contours annually, based on an annual average 24 hour period and present to LLACC (via NTSC).	Ongoing
3	Undertake regular analysis of aircraft activity and noise to identify where a review of procedures may help minimise disturbance	Ongoing
4	Monitor % compliance of Continuous Descent Approaches (CDA) both day and night, reporting quarterly to the LLACC (via NTSC)	Ongoing
5	Undertake community visits with a portable handheld noise monitoring device, on request.	Ongoing
6	Present quarterly night contours to the LLACC (via NTSC)	Ongoing
7	Investigate, log and respond to all complaints relating to London Luton Airport aircraft activity, reporting in-depth statistics quarterly to the LLACC (via NTSC)	Ongoing
8	Quarterly Monitoring Reports to be available to view on the London Luton Airport website as well as the LLACC website	Ongoing
9	Monitor helicopter operations to/from London Luton Airport to ensure they avoid, where possible, the most densely populated areas	Ongoing
10	Calibrate noise and track-keeping system and INM noise contour model on an annual basis	Ongoing
11	Monitor the track-keeping compliance and follow up with operators, as necessary	Ongoing
12	Monitor the number of marginally compliant Chapter 3 aircraft	Ongoing
13	Monitor and report progress against Noise Action Plan actions to LLACC (via NTSC), providing statistics annually in the Annual Monitoring Report	Ongoing
14	Review the voluntary Night Noise Policy in consultation with the LLACC (via NTSC)	2015
15	Encourage daytime operations through higher landing fees at night	Ongoing
16	Fine any departing aircraft exceeding noise limits, to encourage airlines to operate the quietest aircraft types	Ongoing
17	Discourage residential development close to the airport boundary or areas affected by aircraft noise, in liaison with Local Authorities	Ongoing
18	Divert all noise violation limit penalties from airport operations to support the noise management programme and Community Trust Fund. Penalties will be reported to LLACC via NTSC on a quarterly basis.	Ongoing
19	Liaise regularly with airline operators via a 'Flight Ops' Committee to ensure adherence to existing standard procedures and encourage innovation	Ongoing
20	Review operational procedures in relation to noise with support of the 'Flight Ops' committee and NTSC	Ongoing
21	Work with operators to encourage the voluntary phase out of noisiest aircraft	Ongoing
22	Continue to review procedures for helicopter operations with the support of air traffic control	Ongoing
23	Work with operators on the voluntary phase out of marginally compliant Chapter 3 high aircraft i.e. hushkitted aircraft	2014
24	Explore with the 'Flight Ops' Committee/NTSC penalties for fl ying off track after the introduction of RNAV-1 departure routes	2015
25	Work with airlines, air traffic control, NATS and other stakeholders to introduce new technologies and environmental improvements	Ongoing

	Action	Timescale
26	Review the Engine Ground Running policy to minimise disturbance during the night and late in the evening	Ongoing
27	Operate within planning limits	Ongoing
28	Actively participate and support the work of the industry and Airport Operators Association with respect to its 'Sustainable Aviation' programme	Ongoing
29	Liaise with London Heathrow and other airports with respect to non-London Luton overflying traffic, where necessary	Ongoing
30	Work with the LLACC (via NTSC), the 'Flight Ops' committee and NATS to identify airspace improvements which will improve the noise environment	Ongoing
31	Agree key performance indicators and targets for noise 'actions', where appropriate, with the LLACC (via NTSC)	Ongoing
32	Assess the impact of London Luton Airport traffic on the Chilterns AONB and explore potential for operational improvements	Ongoing
33	Attend public meetings on request, where appropriate, to discuss the airport's operations	Ongoing
34	Provide an information pack to first time complainants and those wishing to relocate into the area	Ongoing
35	Formally engage with air traffic control and airline/other operators to help improve noise management/track keeping	Ongoing
36	Host visits from local residents and MPs to discuss community concerns and to demonstrate the Noise and Track-Keeping system	Ongoing
37	Prepare an Annual Monitoring Report, in conjunction with Luton Borough Council, incorporating detailed statistics on all aspects of the airport's operations including passenger throughput.	Ongoing
38	Provide information in the Annual Monitoring Report on progress made on actions set out in the Noise Action Plan	Ongoing
39	Establish a committee with Environmental Health Officers of Local Authorities (Herts, Beds and Bucks) to discuss the impact of the airport's operations and the Noise Action Plan	Ongoing
40	Continue to offer email, telephone and website as options for complaints and enquiries	Ongoing
41	Invite members of the public to visit LLA to review noise and track information	Ongoing
42	Engage effectively and proactively with the LLACC and NTSC	Ongoing
43	Engage with local planning authorities to ensure they are informed about noise matters	Ongoing
44	Review communication material, the noise information pack and the London Luton Airport website with respect to noise/noise management	2015/2016
45	Hold community surgeries to give local people an opportunity to discuss issues in person with representatives from the Community Relations and Flight Operations Department	Ongoing
46	Improve communication with transient and non-based operators/users to ensure environmental and operational procedures are understood and adhered to	Ongoing
47	Develop and implement a Noise Control Scheme to control the noise of aircraft both during the day (0700 – 2300) and night periods (2300-0700), including a Noise Quota System for the night period (2330 -0600) to include: • Sanctions in relation to operators of aircraft which land or take off in breach of the QC System • Exclusion of aircraft movements with a QC value in excess of QC2 during the night time (2300-0700) • Details of the procedures to be adopted and measures with the purpose of phasing out night time (2300 to 0700) operations by aircraft with a QC value greater than 1 on either departure or arrival.	Ongoing

	Action	Timescale
47	(continued) For the Night Quota Period (2330 – 0600) this shall have the following limits incorporated into the scheme: • Total annual movements by aircraft (per 12 month period) shall be limited to 9,650; • The total annual noise quota in any 12 month period shall be limited to 3,500 which, using all reasonable endeavours, shall be reduced at each review until it reaches a point where it does not exceed 2,800 by 2028. For the Early Morning Shoulder Period (06.00 – 07.00) this shall have the following limit incorporated into the schemes: • Total annual movements by aircraft in any 12 month period shall be limited to 7000. Review the Noise Control Scheme no later than the first and fourth year after introduction, and every subsequent five years.	Ongoing
48	Report actual and forecasted aircraft movements for the preceding and next twelve months every three months to Luton Borough Council.	Ongoing
49	Implement a progressive reduction in the daytime maximum noise violation limit (NVL) in line with the requirements of the planning conditions	2015
50	Develop a strategy to be submitted to Luton Borough Council for their approval which defines the methods to be used by London Luton Airport Operations Ltd (LLAOL) or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.2km2 for the area exposed to >57dB Leq16hr (0700-2300) and above and for night time noise to 31.6 km2 for the area exposed to >48dB Leq8hr (2300-0700) and above.	Ongoing
51	Report forecasted aircraft movements and consequential noise contours (Day, Night and Quota Period) for the forthcoming calendar year annually, which shall utilise the standard 92 day summer contour. Where the area enclosed by the 57-72dB(A) Leq16hr (0700-2300) contour could exceed 19.4 sq km for daytime noise, or the area enclosed by the 48-72dB(A) Leq8hr (2300-0700) contours could exceed 37.2 sq km for night-time noise, an action plan will be put in place to ensure this level isn't breached.	Ongoing
52	Develop a Noise Control Monitoring Scheme and submit to Luton Borough Council for approval, to include: • Details of the fixed noise monitoring terminals and track keeping system (vertical and horizontal) • Details of the complaints handling system • Sanctions to be imposed on infringements by aircraft in respect of noise limits and track keeping • Arrangements for the verification of the submitted information Review the Noise Control Monitoring Scheme no later than the first and forth year after introduction, and every subsequent five years.	Ongoing
53	Develop a Ground Noise Scheme and submit to Luton Borough Council for approval, to include: • Measures to limit the ground running of aircraft propulsion engines between 2300-0700 • Preferential use of stands and taxiways between 2300-0700 • Steps to limit the use of auxiliary power units (including the provision of fixed electrical ground power to stands and or suitably quietened ground power units) • No ground running of aeroplane engines for testing or maintenance purposes between 2300-0700, and designated areas for such testing between 0700-2300. Review the Ground Noise Scheme no later than the first and forth year after introduction, and every subsequent five years.	**Ongoing**
54	Develop a Noise Insulation Scheme for residential as well as non-residential buildings.	2016
55	Reduce the night time noise violation limit to 80 dB(A) by April 2015	2015

Community Relations

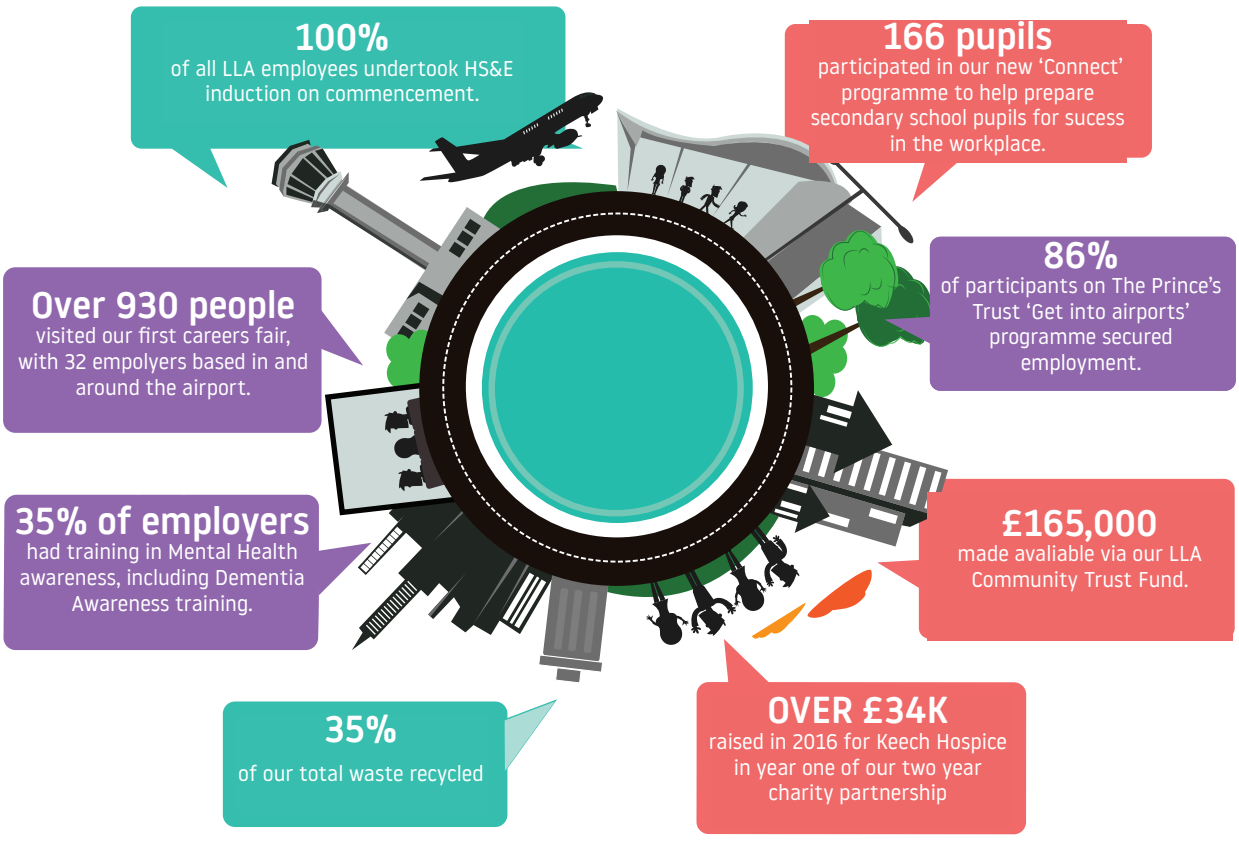
Through the London Luton Airport Consultative Committee (LLACC), which meets every quarter, London Luton Airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the Consultative Committee including meeting minutes and its representatives can be found at the following link: **http://www.llacc.com/**

In 2016, the Flight Operations Team continued the Public Surgery programme. These drop-in events allow local residents to talk to the team face to face to discuss any concerns regarding the impact of LLA's operations. Public Surgeries were held in Flamstead, Breachwood Green, Sandridge, Knebworth, Harpenden and Stevenage, along with an engagement day intended for those communities along the new RNAV Match/Detling route on the 6th October 2016. These will continue to be scheduled in 2017.

The Flight Operations team, also held regular meetings with Ann Main MP, Andrew Selous MP and Stephen McPartland MP. The team also welcomed in local councils from both St Albans and Caddington to disucss the airports noise and track monitoring system and airport tours. Furthermore, the team regularlay conducted hand held monitoring in the community.

Community engagement strategy achievements

Our five year Community Relations Strategy forms part of LLA's corporate social responsibility programme and sets out how we will facilitate community development and meet the needs of key stakeholders. Initiatives are delivered by the airport in collaboration with key community partners. In 2016 we made ten commitments to ensure that we continued to play a positive role in our local community. We achieved 6 of these commitments, another 3 commitments are a work in progress and we did not meet one of the commitments, we continue to strive towards this. The graphic below summarises the progress made towards these commitments during the year or more details can be found in the Community Engagement Annual Report found on our website here.



Employment

Employment at and surrounding London Luton airport contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the airport. Thus, any analysis of the airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the airport boundary has been conducted, the results of which are summarised below.

The methodology used for this year's survey was the same as for the 2015 survey. The Inter Departmental Business Register (IDBR) was used as the main administrative data source - this Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted. (Source: ONS website www.statistics.gov.uk).

An initial list was received from London Luton airport of companies within its boundary. The listing was matched against the IDBR. Companies outside the airport boundary were identified by the street names/areas as follows:

- Spittlesea Road
- Part of Frank Lester Way
- President Way
- Wigmore House
- Part of airport Way
- Barratt Industrial Park
- airport Executive Park

A handful of Companies who appeared on the list but not the IDBR had imputed estimates from analysis of the size of the enterprise and information from the airport.

Total employment in and around the airport

Employment was measured using main section headings from the Standard Industrial Classification 2007 (SIC 2007). Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	500
Administrative and Support Service Activities	1,300
Financial and Insurance Activities	<100*
Manufacturing	1,100
Professional, Scientific and Technical Activities	<100*
Public Administration & Defence; Compulsory Social Security	<100*
Real Estate Activities	<100*
Transportation and Storage	5,700
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	400
Grand Total	**9,300**

** - Figures have been suppressed where there are less than three companies in a given Section and/ or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data.*

Due to confidentiality issues Luton Borough Council is bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

The table illustrates that there are an estimated 9,300 employees in and around the airport. This has decreased by 200 on the previous year, a fall of 2%.

Employment by working pattern

The IDBR provides employment figures by full and part time working pattern. The total full time figures (where a breakdown by full/part time was provided) was 7,900 employees. This was a decrease of 300 on the previous year's figures. The figure for part time employees was 1,400 which was an increase of 100 from last year's figures.

The percentage split of full/part time employees found at the airport compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of LLA	85%	15%
Luton UA	70%	30%

Source for Luton UA Figures: Business Register & Employment Survey 2015, latest data. Figures are percentages of those in employment.

Full and part time working patterns in the vicinity of the airport differs from that found within Luton as a whole, with the airport having a higher proportion of full time workers.

Time series

The following figures from 2011 to 2016 show the estimated employment levels in the vicinity of the airport.

Source: AMR Employment Surveys 2011- 2016

There has been small drop in employment between 2015 and 2016 around Luton Airport. There are approximately 9,300 employees working in the vicinity of the Airport which is a 2% decrease on the 2015 estimate.

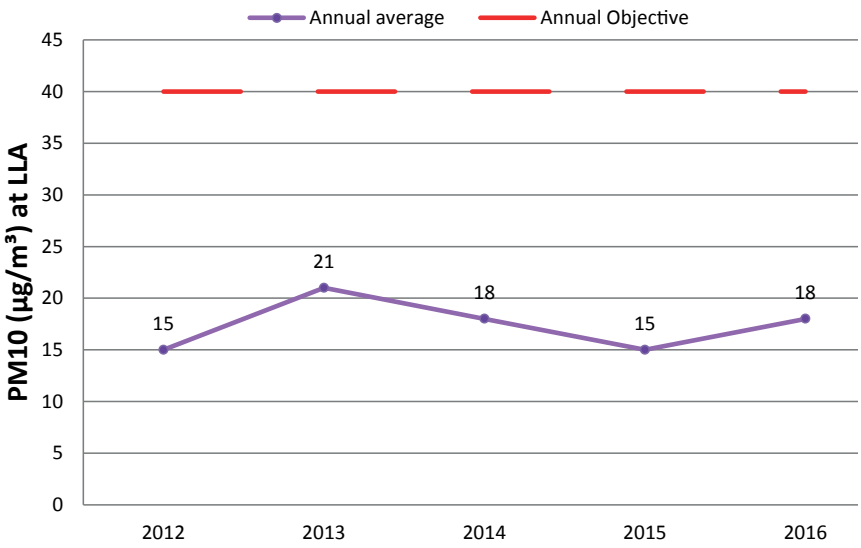
Air Quality

London Luton Airport has been monitoring air quality in and around the airport environment since 2003. Air quality data collected at LLA is integrated into a monitoring programme incorporating data collected by the surrounding Local Authorities, with a monthly report available to view online at http://www.airqualityengland.co.uk The parameters we measure are PM_{10} and NO_2.

PM_{10} (Particulates measuring 10µm or less)

PM_{10} is one of the main contributors to reduced ambient air quality. Particulate matter is made up of fine particles including dust and soot which are suspended in the air. When you breathe in these particles they can stick to the surface of your lungs, and in areas of high pollution can cause respiratory health problems. Local sources include emissions from vehicles and aircraft engines, wear of brakes, tyres, and construction debris.

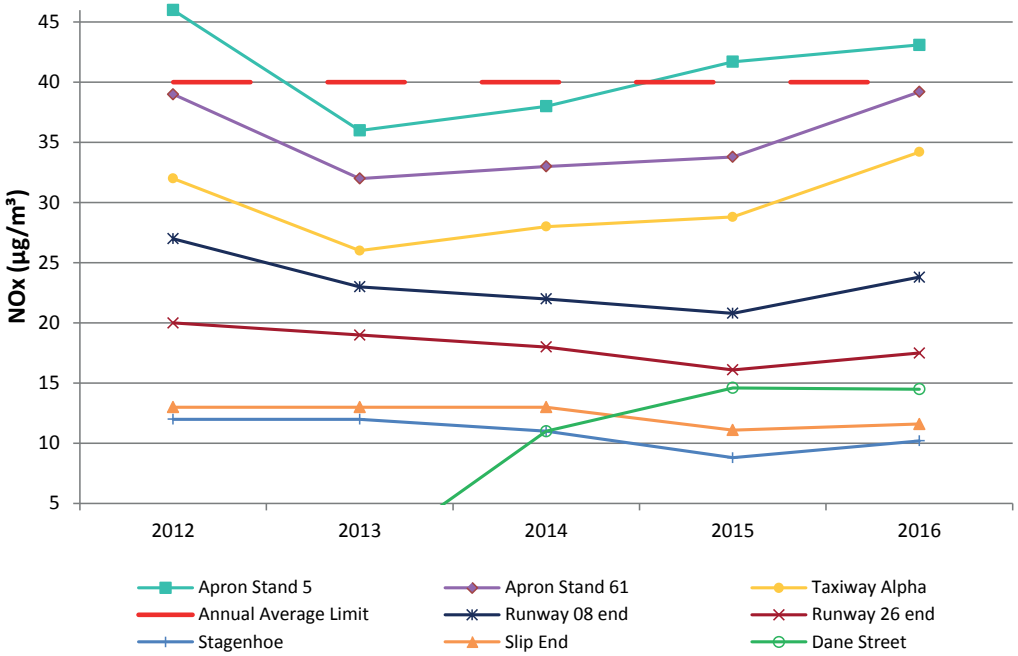
PM_{10} is monitored from one location in the middle of the airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg/m³.



Nitrogen Dioxide (NO_2)

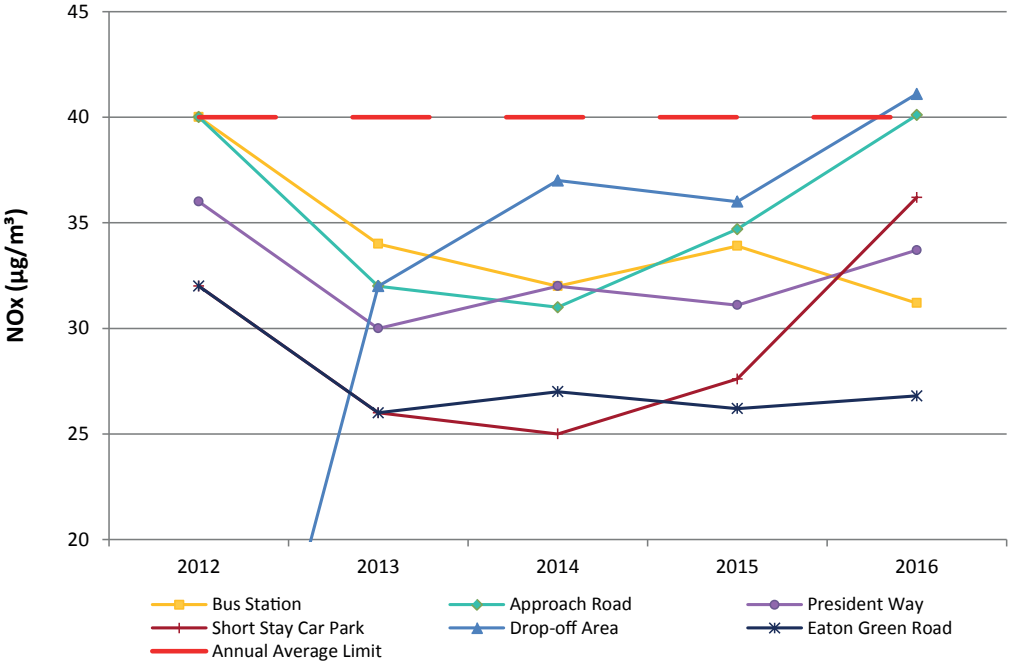
NO_2 in high concentrations can cause a wide variety of health and environmental impacts. The gas is produced from the combustion of fuels such as diesel and aviation fuel. NO_2 is currently measured from 14 locations around LLA, and the results have a bias-adjustment factor applied using national database factors. The annual mean local air quality objective of 40µg/m³ also applies to NO_2.

Airport apron, runway and under the flight paths



NO_2 levels at the closest residential receptors to the airport, and also along the aircraft flight paths are significantly below the the objective level laid out in the Air Quality (England) Regulations 2000 (as amended). Levels monitored by the roads around the airport, in the car parks and on the apron are a little higher, with a location on the main apron and the drop off zone slightly exceeding 40 µg/m³. A significant redesign of the roads and car parks on the approach to the terminal has reduced traffic congestion throughout 2016 and this work is ongoing. A project is also underway to standardise equipment on the apron which will help reduce pollution levels.

Roads, car parks and bus station



Surface Access

LLA aims to improve access to the terminal, particularly by public transport in order to reduce the contribution that journeys make to total airport-related CO2 emissions and also to air pollution. LLA's current airport Surface Access Strategy runs from 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework.

Modes of Transport

Passengers transport mode share (CAA Data)

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLA uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table shows the weighted CAA data for 2011-2015. The CAA statistics suggest that 31% of airport passengers chose to use public transport in 2015. LLA aims to achieve 40% by 2017. Improving the bus station, and lobbying the rail operators to improve services to Luton Airport Parkway have been the main mechanisms through which LLA hope to achieve this.

%	2011	2012	2013	2014	2015
Drop Off	27	27	28	25	27
Car Park	23	23	23	28	27
Rail	15	17	16	14	16
Bus/Coach	16	16	16	15	15
Taxi	18	17	17	17	16

Staff transport mode share

LLA aims to reduce the proportion of staff travelling alone by car to and from London Luton Airport to 60% or lower by 2017. Whilst employee travel does not generate as many trips as passengers, it is an important consideration as employees making a more sustainable travel choice will give daily results due to the frequency of their need to commute to work. Staff travel surveys are undertaken once every 2 years, and the results since 2010 are presented in the

%	2010	2012	2014	2016
Drive alone	66	66	62	68
Car share	12	8	11	7
Taxi	1	1	0	1
Motorcycle	1	1	1	1
Rail	5	5	10	7
Bus/Coach	7	9	8	9
Cycle	2	2	2	2
Walk	5	6	7	5

Road Traffic and Car Parks

The information contained in this section is based on traffic counts conducted at 8 sites during the period 29th September to 5th October 2016. This period is comparable with previous summer traffic counts and avoids any periods when significant changes in traffic characteristics can occur.

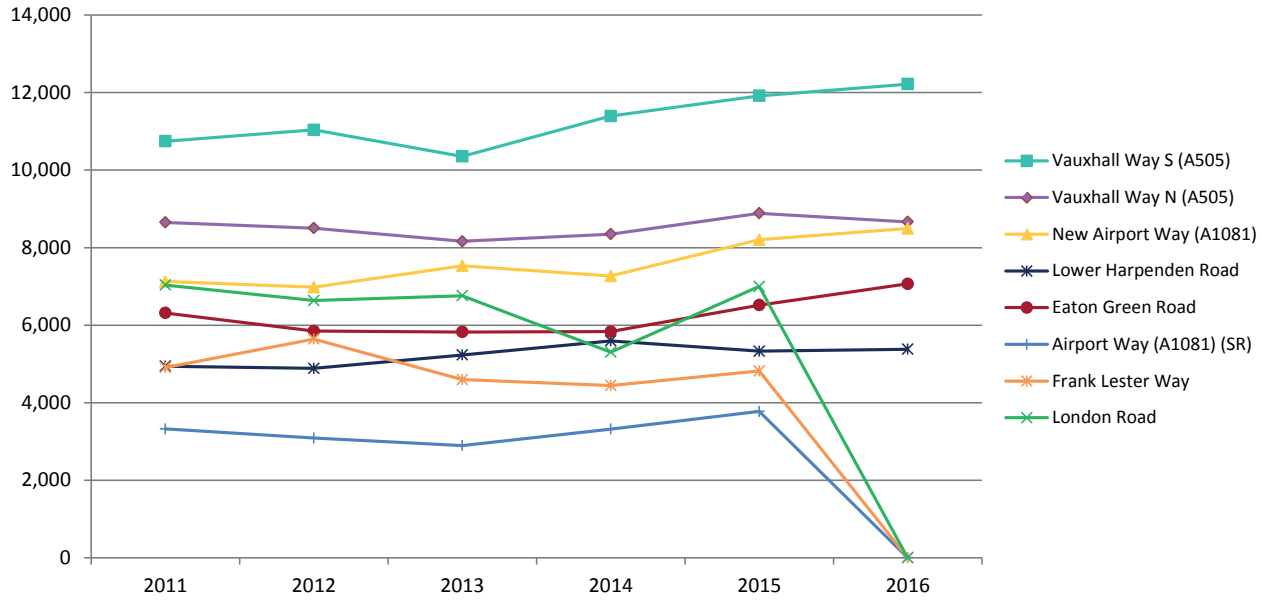
The table and graph below show an increase in 12hr/5day traffic flows between 2015 and 2016 on 4 of the 8 monitored roads, but Vauxhall Way North declined marginally and there is no data for the other three roads in 2016. Looking at trend it is likely that those three roads nevertheless all sustained increases to 2016. From the available data the highest increase on the 4 roads being +551 (+8.5%) on Eaton Green Road. The decrease in traffic was -223 (-2.5%) on Vauxhall Way North Road. It should be noted that the J10a improvement completed and opened in 2016, and so trends previous to its construction, may resume.

Summer 2011 - 2016 Traffic Counts (Average 12 hrs/5 day)

	Map ref	2011	2012	2013	2014	2015	2016
Airport Way (A1081) (SR)	599	3,323	3,088	2,897	3,319	3,775	no data
New Airport Way (A1081)	925	7,127	6,979	7,532	7,268	8,204	8,495
Frank Lester Way	445	4,908	5,642	4,597	4,445	4,818	no data
Sub-total		**15,358**	**15,709**	**15,026**	**15,032**	**16,797**	

	Map ref	2011	2012	2013	2014	2015	2016
Vauxhall Way South (A505)	520	10,746	11,039	10,355	11,395	11,917	12,219
Vauxhall Way North (A505)	603	8,652	8,505	8,164	8,348	8,889	8,666
Eaton Green Road	677	6,317	5,849	5,826	5,835	6,517	7,068
Lower Harpenden Road	106	4,942	4,885	5,232	5,594	5,331	5,379
London Road	393	7,037	6,634	6,759	*5,307	7,000	no data
Sub-total		**37,694**	**36,912**	**36,336**	**36,479**	**39,654**	
Total		**53,052**	**52,621**	**51,362**	**51,511**	**56,451**	

Summer 2011 - 2016 Traffic Counts - average 12 hrs/5 day



* - Site impacted by J10a works

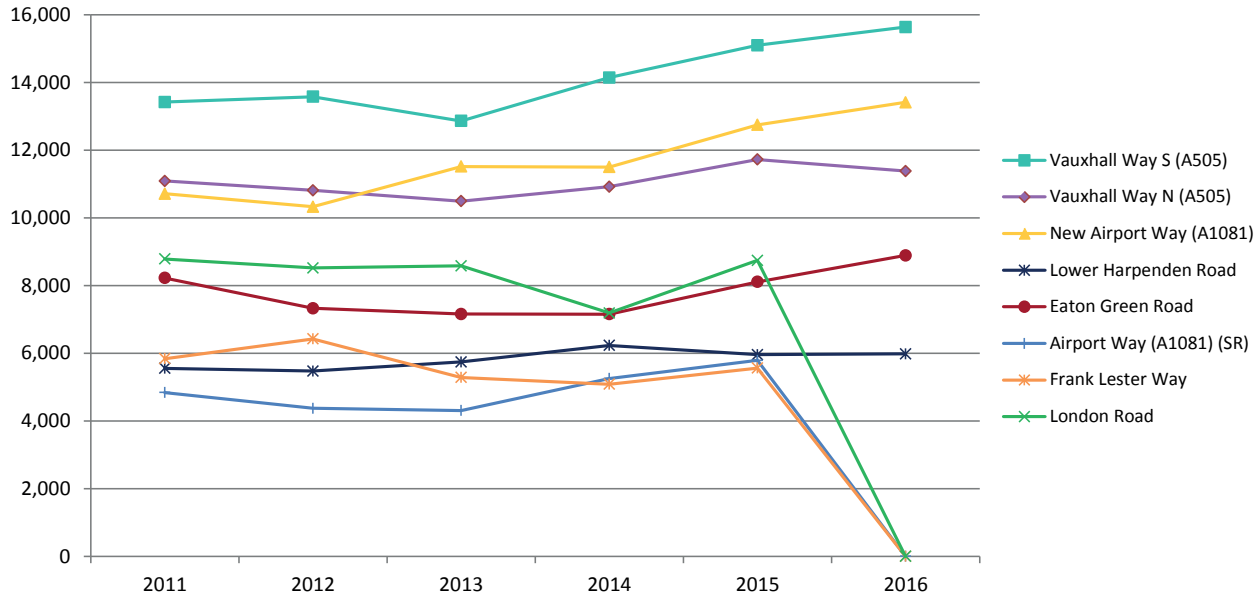
For the 24-hour week (24/7), the table and graph below reveal similar patterns to the 12hr/5day traffic counts where data is available. The highest increase in traffic is +781 (9.6%) on Eaton Green Road, while a decrease in traffic is -340 (-2.9%) on Vauxhall Way North.

Summer 2011 - 2016 Traffic Counts (Average 24 hrs/7 day)

	Map ref	2011	2012	2013	2014	2015	2016
Airport Way (A1081) (SR)	599	4,840	4,374	4,309	5,256	5,791	no data
New Airport Way (A1081))	925	10,714	10,330	11,518	11,503	12,751	13,416
Frank Lester Way	445	5,842	6,426	5,289	5,086	5,564	no data
Sub-total		**21,396**	**21,130**	**21,116**	**21,845**	**24,106**	

	Map ref	2011	2012	2013	2014	2015	2016
Vauxhall Way South (A505)	520	13,421	13,582	12,865	14,146	15,101	15,637
Vauxhall Way North (A505)	603	11,093	10,813	10,496	10,924	11,726	11,386
Eaton Green Road	677	8,226	7,330	7,161	7,155	8,109	8,890
Lower Harpenden Road	106	5,555	5,475	5,746	6,232	5,959	5,984
London Road	393	8,788	8,523	8,582	*7,190	8,747	no data
Sub-total		**47,083**	**45,723**	**44,850**	**45,647**	**49,642**	
Total		**68,479**	**66,853**	**65,966**	**67,492**	**73,748**	

Summer 2011 - 2016 Traffic Counts - average 24 hrs/7 day



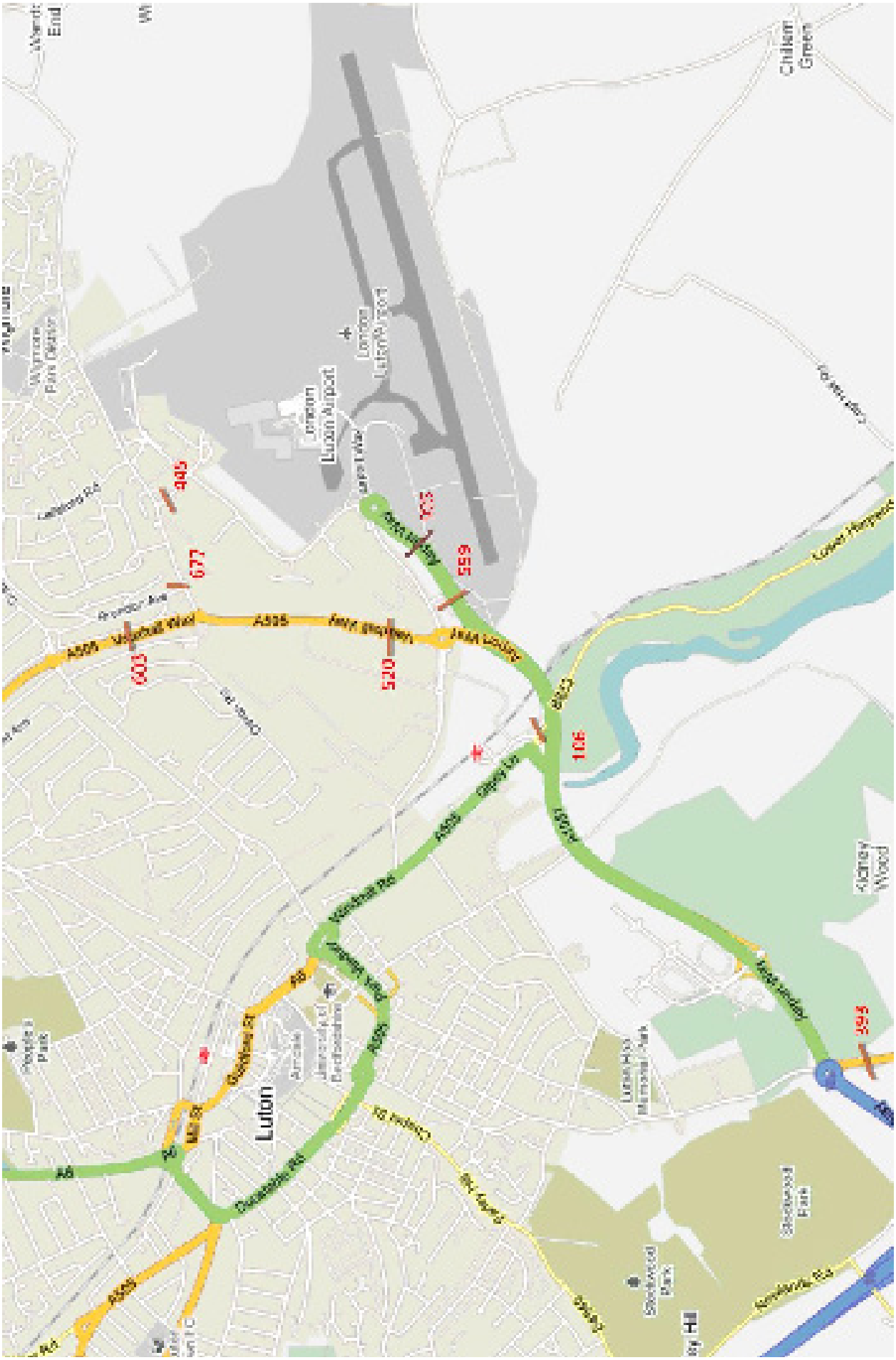
Traffic flow along Airport Way (SR) decreased over the five years to 2013 but increased in 2015 and is likely to again in 2016, as it is now part of the Luton Dunstable Busway route to the terminal and as the M1 J10a improvement works have completed in 2016.

The available data and likely trend indicates that Vauxhall Way axis continues to accommodate the highest traffic volumes in this vicinity. This is due to its strategic location and connectivity to other district and arterial roads into and out of Luton. It is likely that the completion of East Luton Corridor engineering operations and increased activities in and around London Luton Airport have resulted in significant redistribution of traffic flow in the area.

The map overleaf indicaticates location of these observation points.

* - Site impacted by J10a works

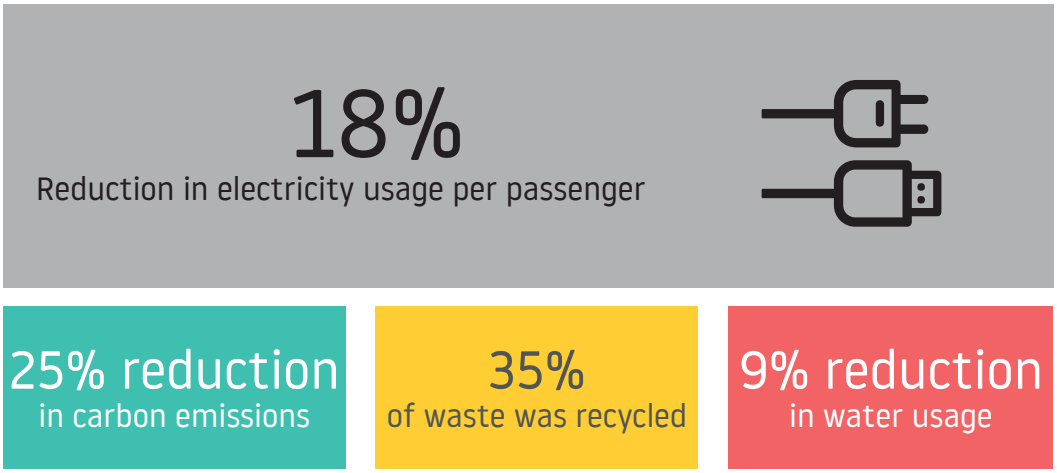
Local Highway Network



Sustainability

London Luton Airport is committed to operating in a way that maximises the socio-economic benefits for the local and regional area whilst minimising the environmental impacts. To ensure this vision is shared and supported, we work closely with airlines, stakeholders and business partners to promote this approach across the airport, ensuring that the full benefits that London Luton Airport can bring to the region are realised.

LLAOL aims to continuously improve on environmental performance in many different areas across the Airport. In 2016 the following was achieved:



The airport maintened the ISO14001 international accreditation for Environmental Management System and the ISO50001 international accreditation for Energy Management.

Sustainable Travel Improvements during 2016

During 2016 a new bus interchange was opened at LLA, providing 7 additional stands and improving safety and access for passengers. Construction works were also undertaken to redevelop the road network, taxi and drop-off facilities at the terminal entrance, and a new multi-storey car park opened providing additional parking near the terminal. Further information on these upgrades can be found under 'Planning and Development'.

Plans for a mass passenger transit system operating between Luton Airport Parkway station and the airport terminal were unveiled during 2016. The MPT system will be a fully-automated, two-way, 24-hour, guided light rail people mover covering a distance of 2.2km. Once complete, the rail link will provide a direct journey between London St Pancras and the airport within 30 minutes. Not only will this encourage passengers to travel by train rather than car, but it will also remove the need for the buses that currently transport passengers between the station and the terminal every 10 minutes. The scheme, being run by London Luton Airport Ltd, is anticipated to be operational by 2021.

Overnight rail services from Luton Airport Parkway began at the end of 2015, making rail a viable transport option for 2-3 million more airport passengers per year, and an uplift in passengers using the trains has been seen during 2016 as a result. LLA have also been lobbying to ensure 4 stops per hour are scheduled at Luton Airport Parkway as part of the refranchising of the East Midlands line due in 2018, providing additional fast services into London.

A staff travel survey was undertaken, along with a report looking into the feasibility of improving coach services to the airport from Northampton. Both reports have been shared with transport operators in order to facilitate transport planning.

Planning and Development

Through its local transport plan, Luton Borough Council (LBC) sets out the policies, strategies and schemes for Luton, Dunstable and the Houghton Regis area. The current Local Transport Plan (LTP3) for Luton covers the period 2011-2026 and can be accessed through LBC's website.

Planning Applications

On 3rd December 2012, LLA submitted a planning application to LBC for:

"Full planning application for dualling of Airport Way/Airport Approach Road and associated junction improvements, extensions and alterations to the terminal buildings, erection of new departures / arrivals pier and walkway, erection of a pedestrian link building from the short-stay car park to the terminal, extensions and alterations to the mid-term and long-term car parks, construction of a new parallel taxiway, extensions to the existing taxiway parallel to the runway, extensions to existing aircraft parking aprons, improvements to ancillary infrastructure including access and drainage, and demolition of existing structures and enabling works. Outline planning application for the construction of a multi-storey car park and pedestrian link building (all matters reserved)"

The application is a hybrid application, with full details submitted for all of the development except in relation to the multi-storey car park and pedestrian link building, where all matters are reserved for subsequent determination. The application was accompanied by an Environmental Statement (ES), with a scoping request having been made in August 2012 and Luton Borough Council (LBC) having provided its scoping opinion in November 2012 (ref 12/01400/FUL).

The scheme involves the following works within the existing Airport boundary:

- Dualling of the road from the Holiday Inn Roundabout to the Central Terminal Area;
- Safeguarding an extension to Airport Way so as to provide an access route to facilitate the development of Century Park;
- Improvements of the public transport hub adjacent to the terminal;
- Construction of a multi-storey car park and pedestrian link to the western side of the existing short-term car park;
- Extension to the mid-term car park and long-term car park;
- Improvements to the terminal building involving internal reorganisation and minor extensions and building works;
- Construction of a new pier (Pier B);
- Construction of a new taxiway parallel to Taxiway Delta; and
- Taxiway extensions and rationalisation of aircraft parking area with new stands replacing and improving existing stands.

This application seeks to increase the capacity of London Luton Airport to 18mppa from a current capacity of approximately 12mppa.

Airport planning and development

Following on from London Luton Airport's planning consent for a £110m development that was granted by Luton Borough Council in 2014, a number of key milestones have been reached in 2016.

New Temporary Entrance
In April 2016 a temporary entrance was installed to make way for the terminal extension which has made a good progress during the year.

Multi-Storey Car Park
In December the new 700 space multi-storey car park was opened, along with a covered pedestrian walkway.

Aelia Duty Free
The new duty free store opened for business in April. The 1,700sqm flagship walkthrough store has proved very popular with passengers.

In addition to these changes the airport introduced free wi-fi, Auto Bag Drop terminals, additional e-Passport gates and removed the charge for plastic bags in security.

During 2017 the terminal extension is expected to be completed along with a new aircraft pier, dual carriageway access road and the first of two new taxiway extensions.

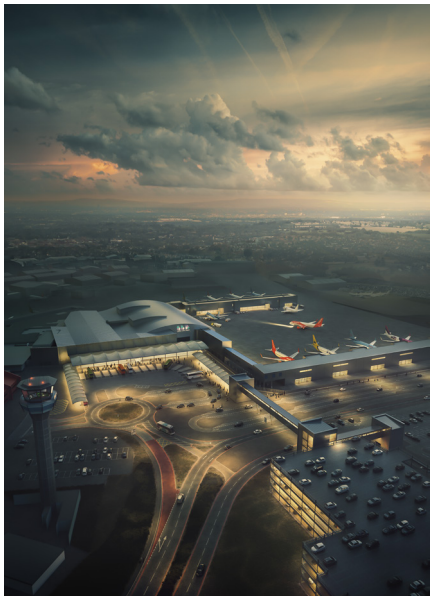
Below are two images showing an artist's impression of the airport after redevelopment.

Hotel developments

The area around the airport proves to be attractive to hotel developers and operators. The following sites have valid planning permissions for such development –

Site address	Current status of application	Number of bedrooms
Express by Holiday Inn	Implemented	147
Hotel Ibis	Implemented	162
Premier Inn (The Brache)	Implemented	131
Napier Park/Stirling Place	A revised scheme was approved subject to the completion of a S106 legal agreement	200
Hampton by Hilton, 42-50 Kimpton Road	Opened January 2013	188
Ramada Encore, Airport Way	Opened July 2012	124
Airport Way/ELC	Approved February 2011, not yet commenced.	171
Former Mondi Packaging site, Airport Way	Approved April 2013, not yet commenced	156
Former Mondi Packaging car park site, Airport Way	Approved subject to the completion of a S106 legal agreement	120
	Total rooms	**1,399**

It is envisaged that the demand for hotel accommodation in Luton will grow as the number of passengers travelling through the airport increases.



National Aviation Policy

The Government's White Paper "The Future of Air Transport" which was published in December 2003 was replaced by the Aviation Policy Framework (APF) in March 2013. The APF sets out the Government's objectives and principles to guide plans and decisions at the local and regional level.

In the short term, to around 2020, the APF proposes a strategy based on a suite of measures, namely:

- "making best use of existing capacity to improve performance, resilience and the passenger experience;
- encouraging new routes and services;
- supporting airports outside the South East to grow and develop new routes; and
- better integrating airports into the wider transport network."

The APF makes a number of references to the role that LLA plays in the UK. In paragraph 1.41 it states:

"The demand for aviation in the UK is concentrated in the South East, a densely populated region whose economy comprises multiple high-value sectors including finance, professional services, technology, media and fashion. This drives consistently high demand for aviation in the region, so that the five main South Eastern airports (Heathrow, Gatwick, Stansted, Luton and London City) account for nearly two-thirds of passengers at UK airports and nearly half of all air transport movements."

In terms of the role that LLA could play in global connectivity paragraph 1.79 states: "To improve connectivity at an international level and to help make better use of existing infrastructure at London's congested airports, we announced in 2011 that we would consult on extending the UK's existing regional fifth freedoms policy to Gatwick, Stansted and Luton. The granting of fifth freedoms would allow a foreign airline to carry passengers between these three London airports and another country as part of a service that begins or ends in the airline's home country. For example, a Singaporean airline would be able to operate a service from Changi Airport in Singapore to Gatwick Airport and then on to JFK Airport in the US, picking up passengers at Gatwick Airport and carrying them to New York."

The Government's overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise. This is consistent with the Government's Noise Policy for England, which aims to avoid significant adverse impacts on health and quality of life. To this end the Government recognises the International Civil Aviation Organisation's (ICAO) 'balanced approach' which seeks to identify the noise problem at an airport and then assess the cost-effectiveness of various measures to reduce noise. The four main elements are: reduction at source (quieter aircraft); land-use planning and management (including use of conditions and legal agreements to mitigate and reduce to a minimum adverse impacts); operational procedures (how aircraft are flown and their routes to limit noise impacts); and operating restrictions (preventing noisier aircraft from flying to airports).

Local Planning Policy

Luton is preparing its Local Plan 2011 to 2031 and in the summer 2014 consulted on a draft Local Plan (Regulation 18 of of the Town and Country Planning (Local Planning) Regulations 2012). In the summer of 2015 the Plan was published for Pre-submission consultation (Regulation 19) and then in the spring 2016 the Borough Council submitted to the Secretary of State for examination with hearings scheduled over 3 separate stages examining the 'Duty to Cooperate' (July 2016), Development Strategy (September 2016) and Development Management Policies (December 2016 and January 2017). The Inspector has been invited to make modifications to the plan to remedy any soundness issues and a Main Modifications consultation is anticipated in March/April 2017. The Submitted Local Plan includes polices to regulate London Luton Airport's growth and environmental performance and to facilitate economic generation and infrastructure delivery via the combined Strategic Allocation comprising Century Park, Wigmore Valley Park and London Luton Airport.

Local Transport Plan for Luton 2011-2026 (LTP3)

The Council was required to submit the third Local Transport Plan (LTP3) to the Government by the end of March 2011 setting out how it would deal with transport matters in and around the town. Whereas the first and second LTPs covered Luton, Dunstable and Houghton Regis, the third plan only covers Luton. The LTP3 comprises two main parts.

The first sets out the long-term Transport Strategy covering the period up to 2026; consistent with the then joint Core Strategy and the Sustainable Communities Strategy. The Council consulted a wide range of partners and stakeholders, including London Luton Airport Operations Limited (LLAOL), in developing this part of the Plan.

Based on recent trends in both passenger throughput and airport employees at Luton, and taking account of recent changes in government policy relating to other London airports, the LTP3 strategy sets out anticipated passenger numbers of between 15.5mppa and 18 mppa by 2026, together with an additional 3000 employees over the same period.

The second part of the LTP3 is the Implementation Plan that sets out local transport schemes and initiatives the Council propose to introduce over the period up to 2014/15. Key elements of the Implementation Plan of relevance to the airport include:

- a focus on smarter choices and travel by more sustainable modes (walking, cycling , public transport supported by employee travel plan initiatives (e.g. car share database)
- implementation of a new northern entrance to Luton Airport Parkway Station
- improvement of M1 Junction 10a, and
- extension of Airport Way to serve planned employment sites east of the airport

ANNEX H - AIRPORT ANNUAL MONITORING REPORT 2017

Annual Monitoring Report
2017

London
Luton
Airport

Contents

Foreword

Demand for air travel across the UK is at an all-time high. Almost 16 million passengers chose to travel through London Luton Airport (LLA) in 2017. More local residents took advantage of the international airport on their doorstep - people from three Counties are by far our largest user.

To meet this soaring demand, we are investing £160 million to transform the airport and increase our annual capacity to 18 million. The revamped terminal and increased route network will create a better experience for our passengers. We also want to make sure that our local community feels the benefits of being home to a bigger and better LLA.

The redevelopment is forecast to bring a significant economical boost to the local area and the UK. We will contribute £1.4 billion a year to the local economy and £2.3 billion nationally, supporting over 37,700 jobs by 2031.

But as the airport grows, we know that some local residents may have concerns about noise levels.

Noise is an unavoidable part of running an airport but it's important to us to balance the benefits of a successful airport with our operational activity.

We already operate under the most stringent noise restrictions of any major UK airport, but we want to do more.

That's why we are working with representatives from local authorities and community groups to make improvements to existing flightpaths, and with airlines to introduce newer, quieter aircraft to LLA as quickly as possible. In 2017, LLA initiated a successful trial with more than three quarters of aircraft delaying their landing gear deployment, which cuts down drag and reduces noise, having worked with Stevenage MP Stephen McPartland and local communities.

The work which our noise team carries out is driven by the following commitments:

1. Inviting and listening to feedback
We hold regular noise surgeries and are available to listen to your concerns 365 days per year.

2. Acting on the feedback we receive
Whether it's introducing new mitigation initiatives, improving our monitoring capabilities or simplifying our complaints system. If it matters to you, it matters to us.

3. Communicate transparently
We update our community with quarterly monitoring reports, through our consultative committee and "Inform", our bi-monthly email newsletter.

4. Input into national policy-making
Airspace changes depend on national policies. LLA will make sure your views are heard in national consultations.

This Annual Noise Monitoring Report is one example of how we act on these commitments. We hope it answers some of the questions you may have about the impact of the airport's transformation.

If you have any other further queries please don't hesitate to contact the team by calling 01582 395382 or emailing noise@ltn.aero.

Neil Thompson
Operations Director
London Luton airport

Key Monitoring Indicators

Parameter		2017	2016
Total Aircraft Movements	↑	135,518	131,435
Day Movements (07:00 - 23:00)	↑	119,462	116,686
Night Movements (23.00 – 07.00)	↑	16,056	14,749
Early Morning Movements (06.00 – 07.00)	↑	5,962	5,161
Total Scheduled Passengers	↑	15,369,715	14,092,180
Total Charter Passengers	↓	429,504	459,657
Total Passengers	↑	15,799,219	14,551,837
Number of Destinations	↑	140	135
Number of New Airlines	↓	0	4
Number of New Routes	↓	19	23
Westerly/Easterly Runway Split (%)	-	79/21	70/30
Night Quota Used (3,500 Limit)	↑	3,078	2,663.75
Average Ratio of Aircraft movements % (day/night)	-	89/11	89/11
Track Violations	↓	63	91
Departure Noise Infringements (Day)	↓	7	21
Departure Noise Infringements (Night)	↑	4	3
Fines transferred into Community Trust Fund	↓	**£50,250**	£75,700
24hr Continuous Decent Approach (% achievement)	↑	93%	90%
No. Departures Recorded at ≥ 85 dB(A) during Day (Night)	↓	1 (0)	8 (1)
No. Departures Recorded at ≥ 76 dB(A) during Day (Night)	↑	7,785 (1,283)	6,379 (943)
No. Departures Recorded at ≥ 70 dB(A) during Day (Night)	↑	46,405 (5,339)	42,667 (4,511)
Night Noise Contour Area (48 dB $L_{Aeq, 8h}$)	↑	38.7km^2	36.5km^2
Population within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	17,800	16,105
Dwellings within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	7,500	6,767
Noise Complaints	↑	15,384	4,231
Complainants	↑	1,121	815
Number of New Complainants	↑	814	525
Largest Source of Complaints	-	Deps. West	Deps. West
Number of PM_{10} exceedances	-	0	0

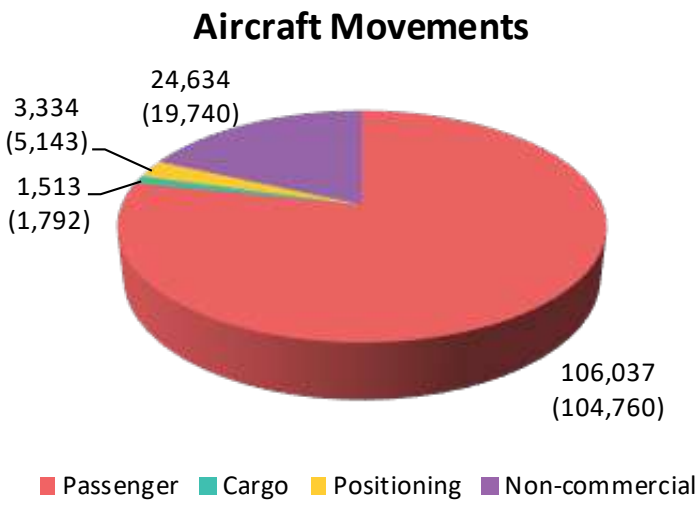
Air Traffic Data

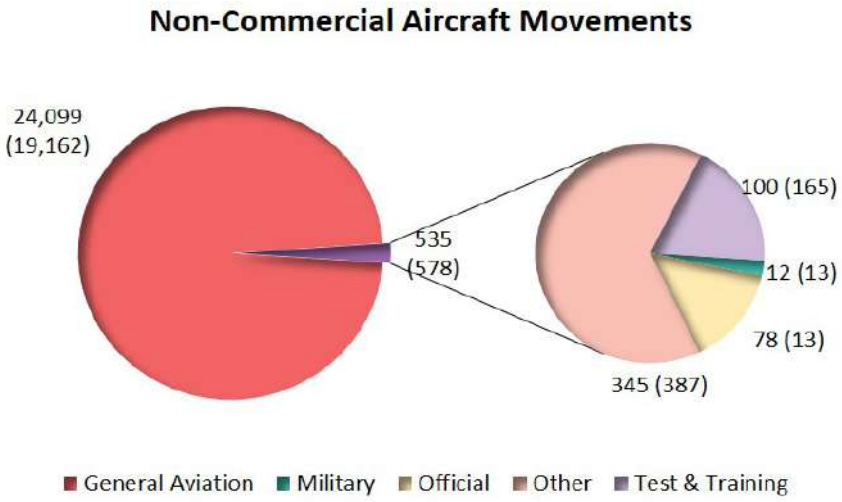
Aircraft movements

LLA handled a total of 135,518 aircraft movements during 2017, an increase of 3.1% compared to 2016. An aircraft movement is the take-off or landing of any aircraft from the airport.

The majority of aircraft movements were passenger flights at 106,037 movements. This includes commercial flights by executive aircraft (compared with 104,760 in 2016). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2016 data is shown in brackets.

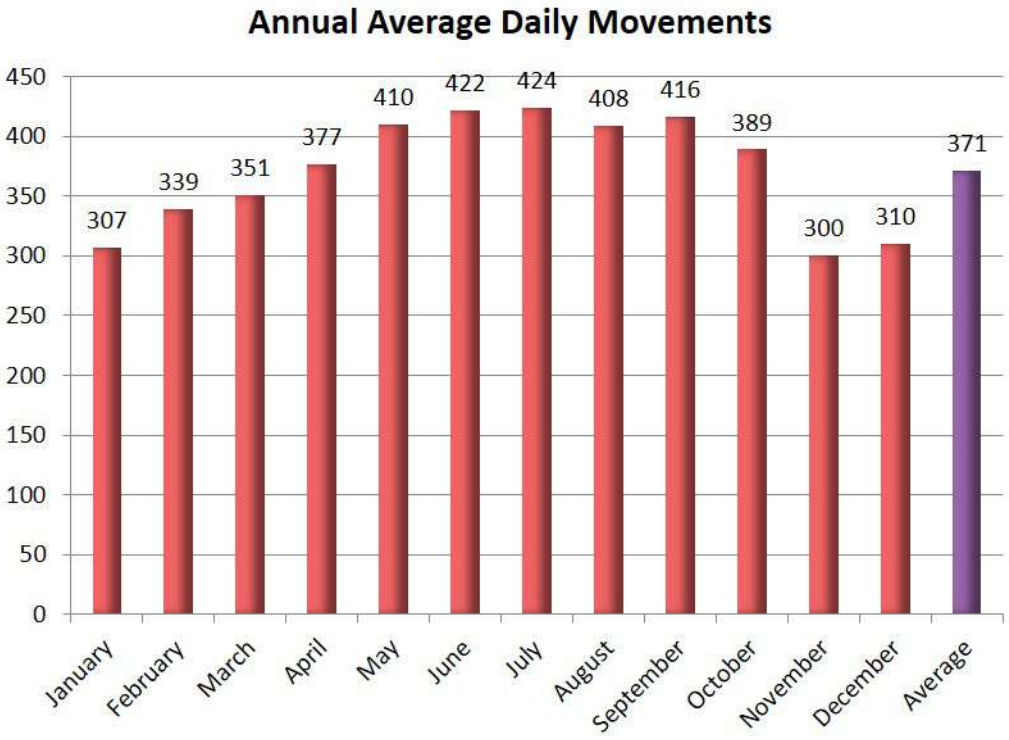




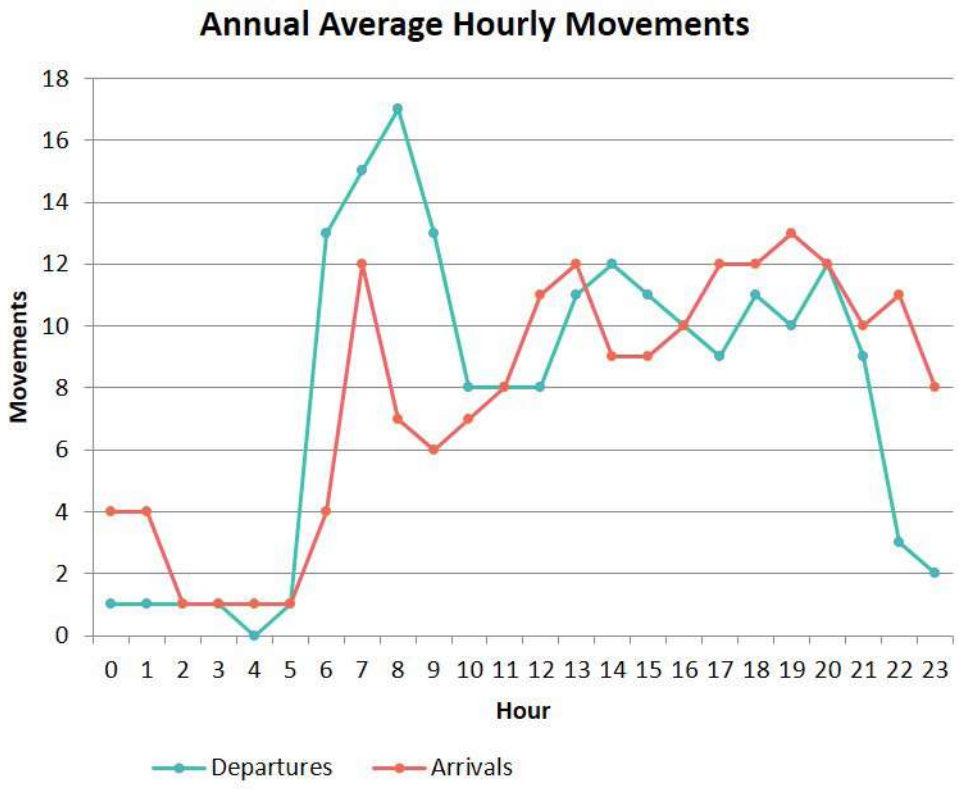
Movement Classification

Commercial – operating for hire or reward and includes cargo, passenger and positioning flights
Non-Commercial – not operating for hire and reward
Cargo – aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories
General Aviation – private aircraft, helicopters and business jets not operating for hire or reward
Passenger – commercial passenger flights, including executive aircraft
Positioning – typically empty flights to/from other airports
Military – flights on military business
Official – flights solely for official purposes by British or foreign civil government departments
Other – flights coming for maintenance and or departing aircraft that have made an unscheduled return to base
Test & Training – training flights involving aircraft and also flights following or during aircraft maintenance

The graph below illustrates that the busiest time of year is May - October, with over 411 flights per day. **Our busiest day of the year was June 4th with 475 aircraft movements.** In comparison, winter months are the quietest, with just over 305 flights per day. On average there were 371 movements per 24 hours (compared to 359 in 2016).



The busiest time on average during 2017 for departing aircraft was 06:00-09:00 hrs, with another peak between 12:00-16:00. The average busiest time for arrivals was 17:00-19:00 hrs.The graph also highlights a low level of average movements during the hours of 00:00-05:00 hrs.



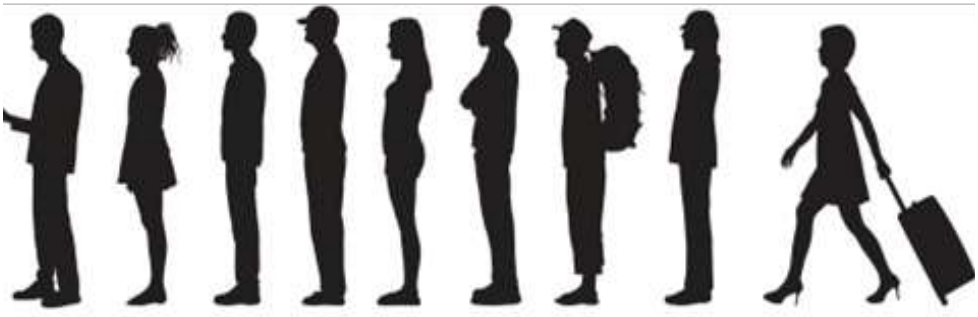
Passenger data

Scheduled	Charter	Totals
•**15,369,715** passengers •just over 9% increase compared with 2016 •**154** average passengers per flight	•**429,504** passengers •just over a 6% decrease compared with 2016 •**180** average passengers per flight	•**15,799,219** passengers •8.5% increase compared with 2016 •Total **154** average passengers per flights

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 15,799,219 passengers used LLA during 2017; 15,369,715 on scheduled flights (97%) and 429,504 on charter flights (3%). This represents an increase in passengers of 8.5% compared with 2016.

Domestic	EU	Non-EU	Totals
• **1,155,521** •just under 11% increase compared with 2016	• **10,411,283** •just over 6.5% increase compared with 2016	• **4,232,415** •just over 13% increase compared with 2016	• **15,799,219** •8.5% increase compared with 2016



Cargo

Cargo operations represent just over 1% of all air transport movements at London Luton Airport. Night movements accounted for 76% of total cargo movements. These were primarily postal flights or intra-European express delivery services moving time sensitive and perishable freight such as fresh food, medication and urgently needed technical equipment vital to supporting and sustaining economic growth. The flights carrying more general, less time-sensitive cargo already operate outside of the night-time period. This would include Formula 1 cars, live animals, clothing, machine parts and more.

Operator	Movements			Tonnes
	Day Movements	Night Movements	Total	Total
2017	455	1,442	1,897	22,061
2016	**648**	**1,515**	**2,163**	**25,788**
2017/2016 comparison	-29.8%	-4.8%	-12.3%	-14.4%

N.B. The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because just under 1% of total cargo tonnage was carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in the Aircraft Movements piechart which shows dedicated cargo movements.

Airlines

London Luton Airport works very closely with its airline partners. The table below provides the movement statistics by the 10 largest operators.

Operator	Movements
easyJet	47,260
Wizz	31,094
Ryanair	9,974
Monarch	3,697
Blue Air	3,175
Thomson Airways	2,133
Vueling	3,046
DHL	1,136
El Al	833
VistaJet	758
Others	2,512
TOTAL	**105,618**

N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.

Movements by aircraft type

Aircraft Type	Movements	% of Total movements
Airbus A319	27,828	20.5%
Airbus A320	48,261	35.6%
Airbus A320 NEO	975	0.7%
Airbus A321	9,869	7.3%
Airbus A306	896	0.7%
Airbus A330	110	0.1%
Boeing B737-300	396	0.3%
Boeing B737-400	1,202	0.9%
Boeing B737-500	159	0.1%
Boeing B737-700	114	0.1%
Boeing B737-800	14,218	10.5%
Boeing B737-900	434	0.3%
Boeing B757	1,247	0.9%
Beoing B767	130	0.1%
Boeing B777	18	0.01%
Boeing B787	42	0.03%
BAe ATP	295	0.2%
Canadair Global Express GLEX	219	0.2%
Cessna Citation Excel C56X	2,721	2.0%
Canadair Challenger CL60	1,278	0.9%
Canadair Challenger CL30	1,550	1.1%
Gulfstream 3,4 & 400 series	1,714	1.3%
Gulfstream 5 & 500 series	2,057	1.5%
Gulfstream 650	1,163	0.9%
Embraery Legacy 600	1,702	1.3%
Cessna Citation Jet C525	1,317	1.0%
Dassault Falcon FA7X	1,081	0.8%
Helicopter	531	0.4%
Other aircraft	13,991	10.3%
TOTAL	**135,518**	100%

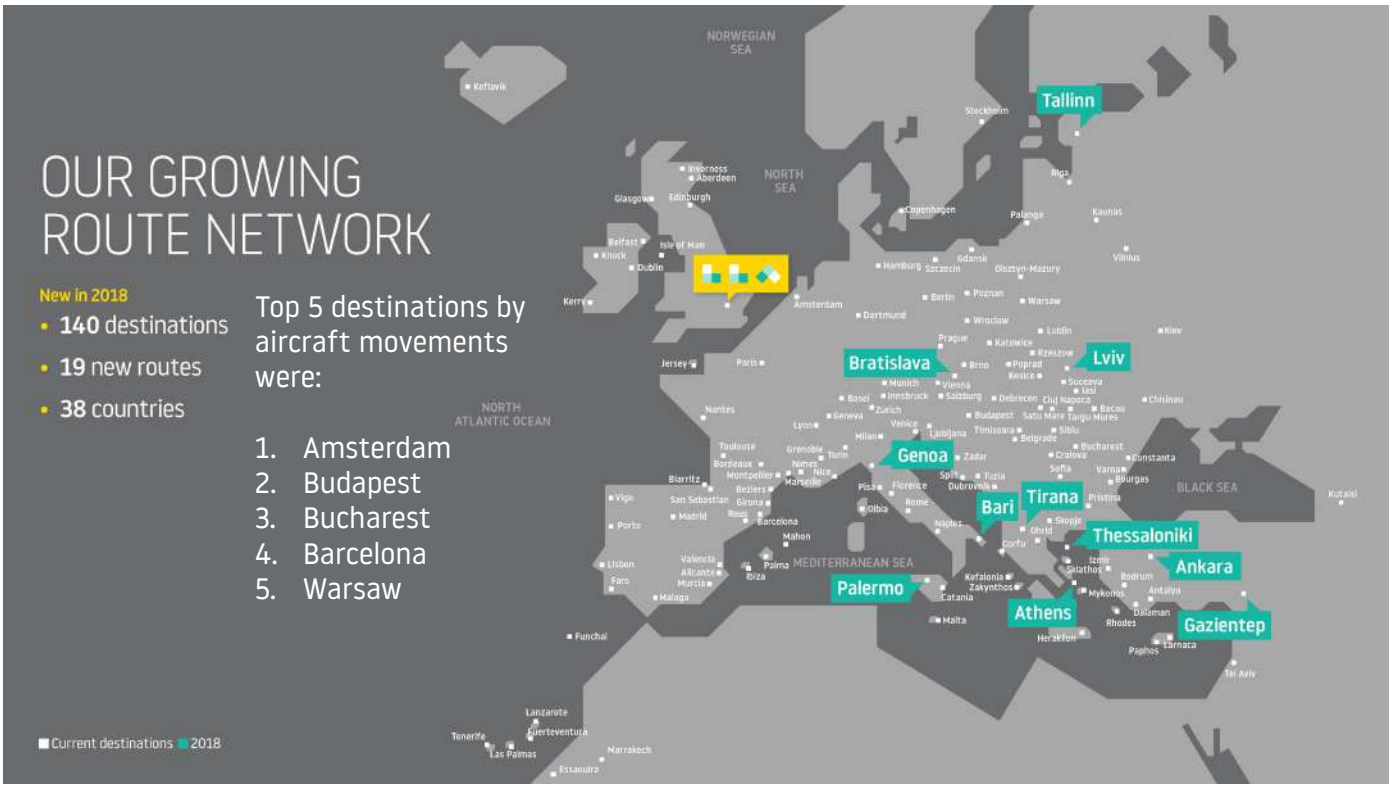
The aim of this section is to provide the number of movements for a specific aircraft type. The groups are conditional, assuming that these are the typical aircraft types used for passengers, cargo and general aviation movements. As a result the number quoted here within this section will differ from those within the Aircraft Movements Section.

[1] - Winglets and sharklets are small aerodynamic surfaces mounted almost vertically at the wingtips. There is no difference between winglets and sharklets; the term sharklet is just the name used by Airbus for the winglets fitted to their aircraft.

Destinations

London Luton Airport has seen forty four months of consecutive passenger growth (correct as of January 2017) making 2017 the busiest year ever in the airport's history.

The map below shows the destinations flown/on sale to and from London Luton in 2017. Our airlines fly to 140 destinations across 38 different countries.



New Routes 2017

Destination	Launch	Airline
Chambery, France	16-Dec-17	TUI
Alghero, Italy	28-Nov-17	easyJet
Seville, Spain	29-Oct-17	easyJet
Bydgoszcz, Poland	29-Oct-17	Ryanair
Biarritz, France	27-Jun-17	easyJet
Kutaisi, Georgia	24-Jun-17	Wizz Air
Tel Aviv, Israel	24-Jun-17	Wizz Air
Prishtina, Kosovo	18-Jun-17	Wizz Air
Rhodes, Greece	27-May-17	easyJet
Zadar, Croatia	27-May-17	easyJet
Florence, Italy	01-May-17	Vueling

Destination	Launch	Airline
Faro, Portugal	01-May-17	Ryanair
Isle of Man, UK	27-Mar-17	easyJet
Cluj-Napoca, Romania	26-Mar-17	Blue Air
Dusseldorf Weeze, Germany	26-Mar-17	Ryanair
Stockholm, Sweden	26-Mar-17	easyJet
Nantes, France	15-Feb-17	easyJet
Marseille, France	13-Feb-17	easyJet
Valencia, Spain	11-Feb-17	easyJet

Routes Ending 2017

Whilst there were 19 new routes launched from LLA in 2017, 16 ended with the collapse of Monarch.

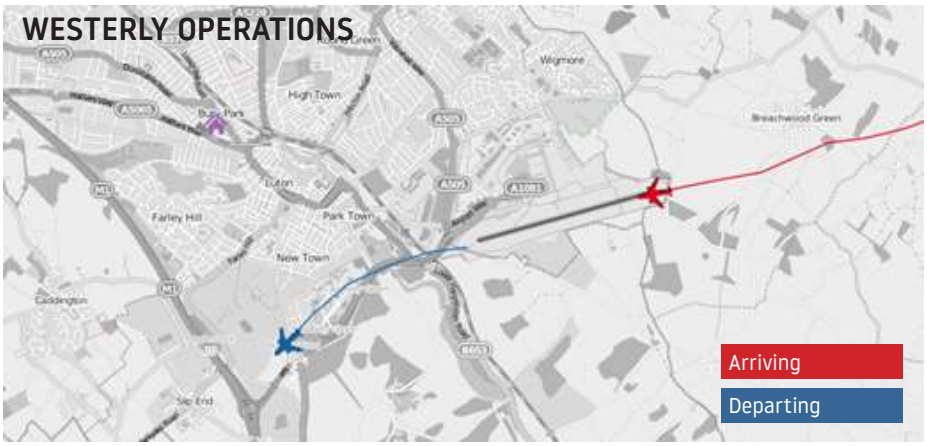
More information about our destinations can be found on the airport's website:
http://www.london-luton.co.uk/inside-lla/destination-map

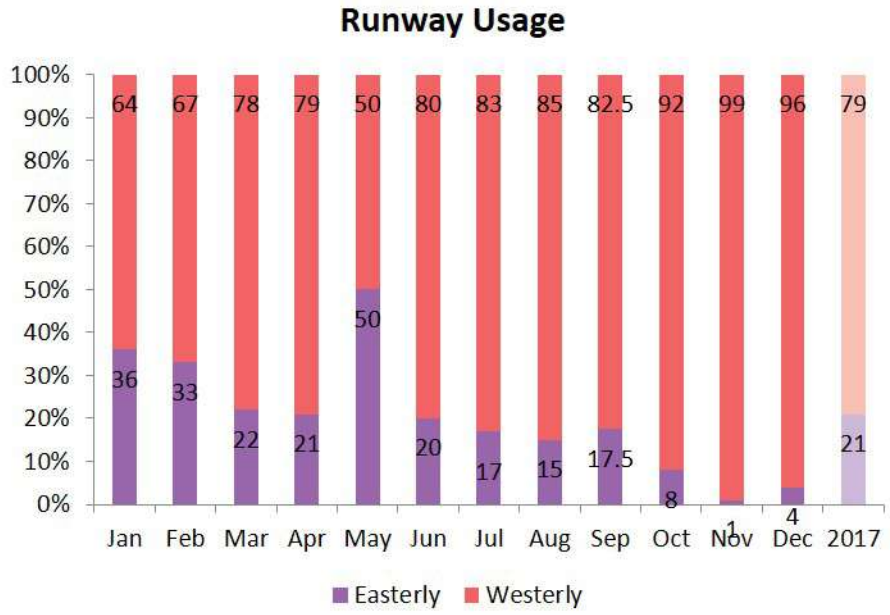
Runway usage

Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. South westerly and westerly winds prevail for much of the year, typically around 70 per cent of the time.

Wind speeds and directions recorded at higher altitudes can vary considerably from those recorded at ground level. The position of the wind is under constant review by NATS which is why the operation can change direction more than once in a day. However it is also not unusual for the runway to operate in the same direction for several weeks.

A monthly breakdown is shown, highlighting unusually prolonged spells of westerly operations over the summer and increased levels of easterly operations over the winter and spring months of 2017.





Year	Easterly	Westerly
2017	**21%**	**79%**
2016	30%	70%
2015	28%	72%
2014	32%	68%
2013	36%	64%
Average	**29%**	**71%**

The runway split during 2017 was 21% easterly and 79% westerly (compared to 30% / 70% in 2016). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 29% easterly and 71% westerly.

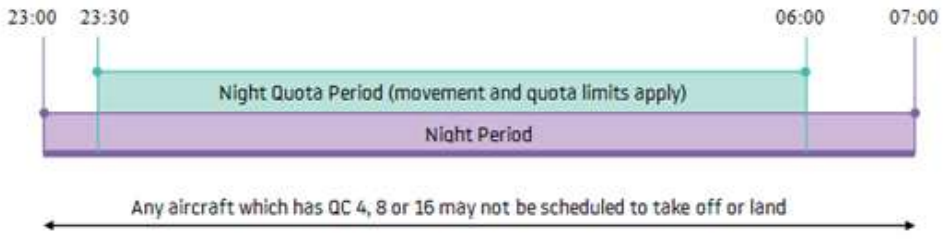
Night Flights

Night Flying Restrictions

As from 1st April 2015 London Luton Airport introduced new night restrictions as part of the planning conditions imposed by Luton Borough Council.

These restrictions have been put in place to limit and mitigate noise disturbance from aircraft operating at night, to prohibit aircraft of certain types from operating, as well as limiting the number of occasions on which aircraft may take off or land.

The night flying restrictions contain a 12 month period aircraft movement limit and a 12 month period quota count limit. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft



The table overleaf records the QC bands identified by the certified noise levels, and gives some typical example aircraft, some of which operate from LLA.

The 'Night Quota Period'
The 'Night Quota Period' is from 23:30 to 06:00 hours local, during which period aircraft movements (take-off or landing) are restricted by a limit on the number of movements with noise quotas as an additional measure.

Aircraft are certificated by the International Civil Aviation Organisation (ICAO) according to the noise they produce during specific certification tests conducted by the manufacturer. They are classified separately for both take off and landing. The points are then allocated to different aircraft types according to how noisy they are.

The 'Early Morning Shoulder Period'
The 'Early Morning Shoulder Period' is 06:00 to 07:00 hours local. During this period aircraft movements (take-off or landing) are restricted by a limit on the number of movements (the same as the Night Quota Period).

Aircraft movement and quota count limits (per 12 month period)

Condition 9(iii) requires that for the Night Quota Period (2330 - 0600) the following limits shall not be exceeded:

- Total annual movements by aircraft per 12 month period shall be limited to 9,650;
- The total annual noise quota in any 12 month period shall be limited to 3,500.

Certificated noise level (EPNdB)	Typical aircraft	Quota Count
Greater than 101.9	Some B741/B742, AN124/AN225	QC 16
99 to 101.9	Some B744, MD8	QC 08
96 to 98.9	B732, MD10	QC 04
93 to 95.9	B772, A306, A332	QC 02
90 to 92.9	A320/A321, some B738, B752, B788	QC 01
87 to 89.9	A319/A320, some B734, B738, B788	QC 0.5
84 to 86.9	A319/A320, GLEX, FA7X/F900/F2TH	QC 0.25
Less than 84	Challenger series (eg CL60), ATP, C525/C550 & A320 NEO	QC 0

Condition 9(iv) requires that for the Early Morning Shoulder Period (0600 - 0700) the total annual movements by aircraft in any 12 month period shall be limited to 7,000.

The table below provides total aircraft annual movements and noise quota per 12 month period and compares those against the limits set by planning conditions.

	Night Quota Period (2330 - 0600)		Early Morning Shoulder (0600 - 0700)
	Movements Limited to 9,650	Quota Count Limited to 3,500	Movements Limited to 7,000
Jan 2017	318	146	331
Feb 2017	363	161	301
Mar 2017	388	172	393
Apr 2017	638	243	563
May 2017	850	304	636
Jun 2017	958	349	610
Jul 2017	1,063	375	622
Aug 2017	989	376	637
Sep 2017	898	328	637
Oct 2017	832	311	593
Nov 2017	204	70	336
Dec 2017	481	242	303
Total for preceding 12 months	**7,982**	**3,078**	**5,962**

There were 156 night time aircraft movements with a QC value of greater than 2 in 2017. Of the 156 QC 2 aircraft movements in 2017, 111 were departures by Airbus A300-600 aircraft.

There was one night time aircraft movement with a QC value of greater than 2 in 2017. This was an arrival by a Sikorsky S-92 helicopter. While this type is certificated differently to fixed wing aircraft, it can be assigned a QC value using a revised procedure.

Marginally Compliant Chapter 3 aircraft

Taking the year as a whole, of the 134,032 movements where Chapter 3 categorisation is applicable, only 66 are known to be marginally compliant. These movements were by three aircraft; a Boeing 737-200, a Gulfstream III and a Tupolev 204, with 55 of the 58 movements being the Boeing 737-200. A further 14 aircraft movements were by aircraft unkown classification. These comprised 4 different aircraft; an Antonov 12, a Boeing 767-200 and two Boeing 767-300s. It should be noted that the B737-200 no longer operates from Luton.

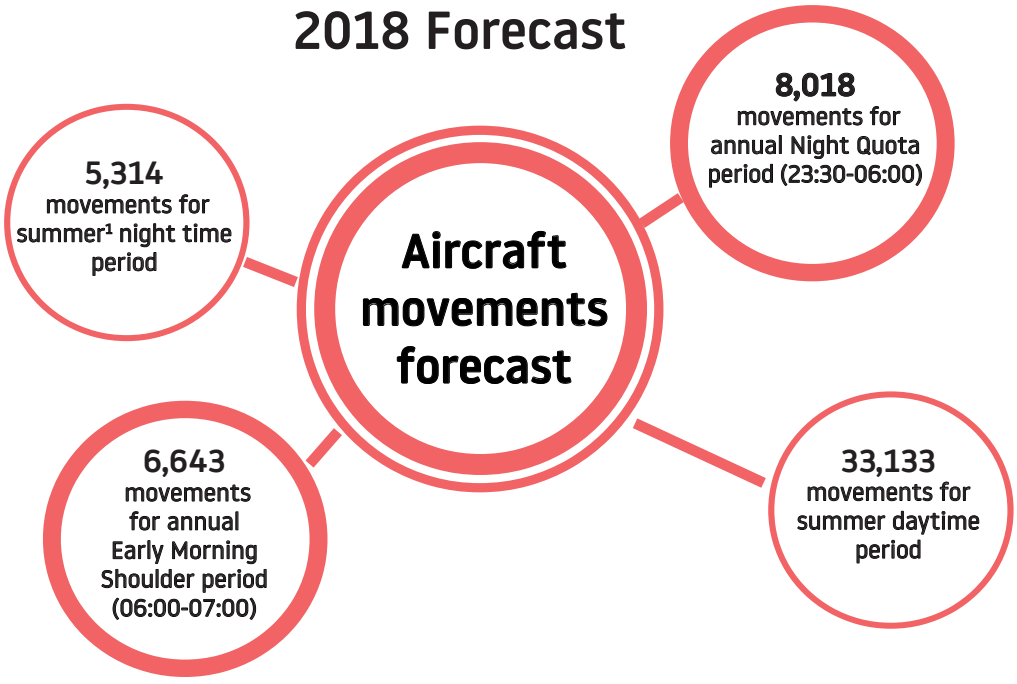
Day/Night ratio of movements

There were 16,056 night movements during 2017 (compared to 14,749 in 2016, a increase of 9%), an average of 44 movements per night (compared to 40 last year). Arriving aircraft accounted for 56% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the airport at night, between 23:00 hrs and midnight. 64% of total night departures took off between 0600 - 0700 in the morning.

The average ratio of total aircraft movements during 2017 was 89% day / 11% night (in line with 89% day / 11% night in 2016).

2017	Day Movements (0700 - 2300)	Night Movements (2300 - 0700)		
	Day Movements	Night Quota Period (2330 - 0600)	Early Morning Shoulder (0600 - 0700)	Total Night Movements (2300 - 0700)
Departures	60,688	2,113	4,571	7,072
Arrivals	58,774	5,869	1,391	8,984
TOTAL	**119,462**	**7,982**	**5,962**	**16,056**

The figure below shows forecast aircraft movements for 2018, separated into daytime and night time periods.



[1] - Summer time covers period from 16th June until 15th September

Departing Aircraft

All propeller-driven aircraft with Maximum Take Off Mass (MTOM) over 5,700kg and all jet aircraft leaving London Luton Airport are required to follow specific departure routes known as Noise Preferential Routes (NPRs). These are established by consultation with the Safety and Airspace Regulatory Group (SARG) at the CAA and the London Luton Airport Consultative Committee, and they are designed to avoid flying over built-up areas wherever possible.

There are four Standard Instrument Departure (SID) routes for each runway – OLNEY, COMPTON, MATCH and DETLING.

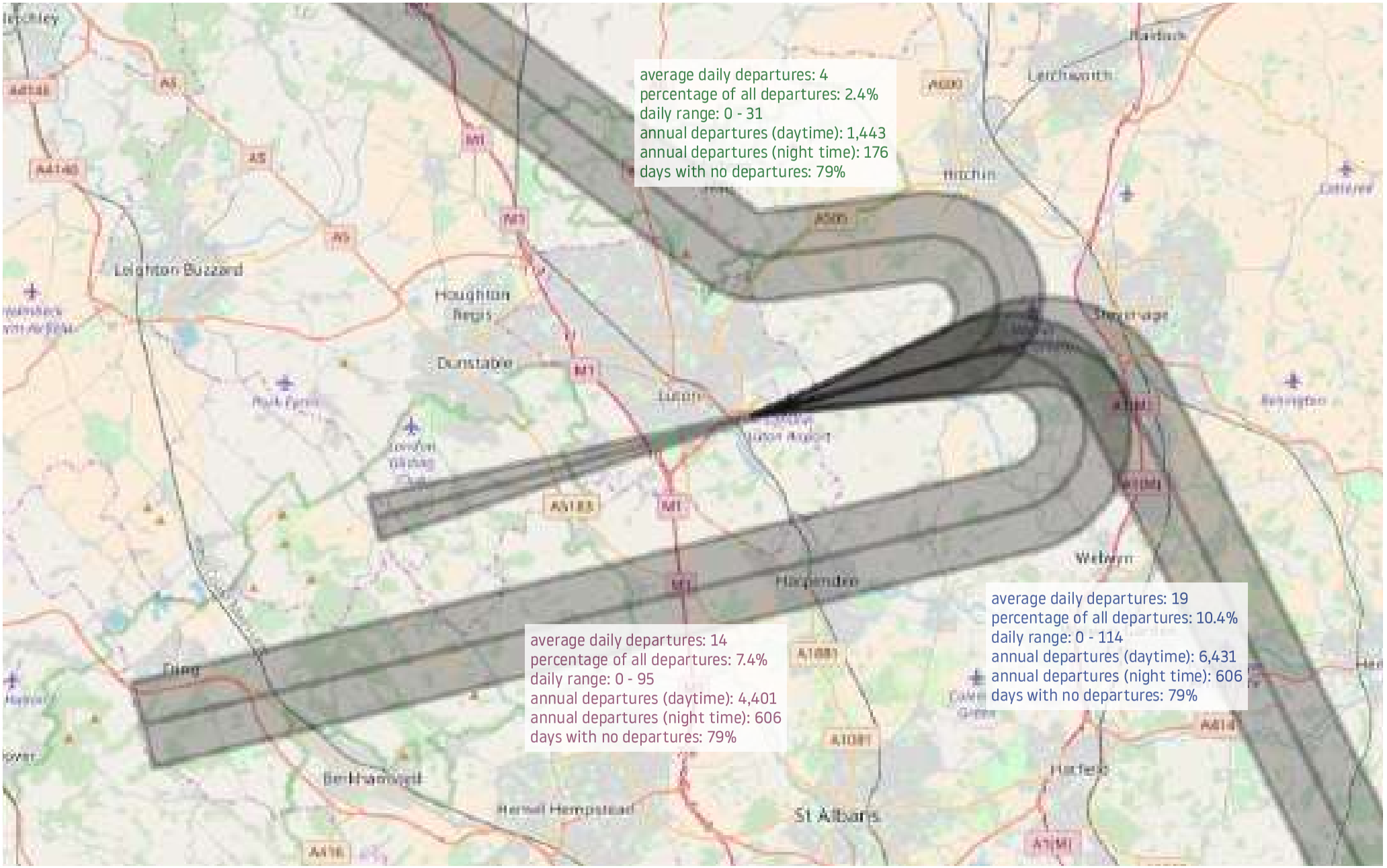
Associated with each NPR is a swathe of airspace extending 1.5km (1km for RNAV) each side of the NPR centre line, within which aircraft concentrate and are considered to be flying on track. Aircraft must follow the NPR controls applicable to the runway in use at that time.

In the UK, the obligations of Noise Preferential Routings for aircraft following conventional SIDs cease when a height of 3,000ft (between 07:00hrs to 23:00hrs local time) and 4,000ft (during night time, 23:00hrs to 07:00hrs local time) has been reached. The obligations of the RNAV NPR ceases when a height of 4,000ft has been reached at all times.

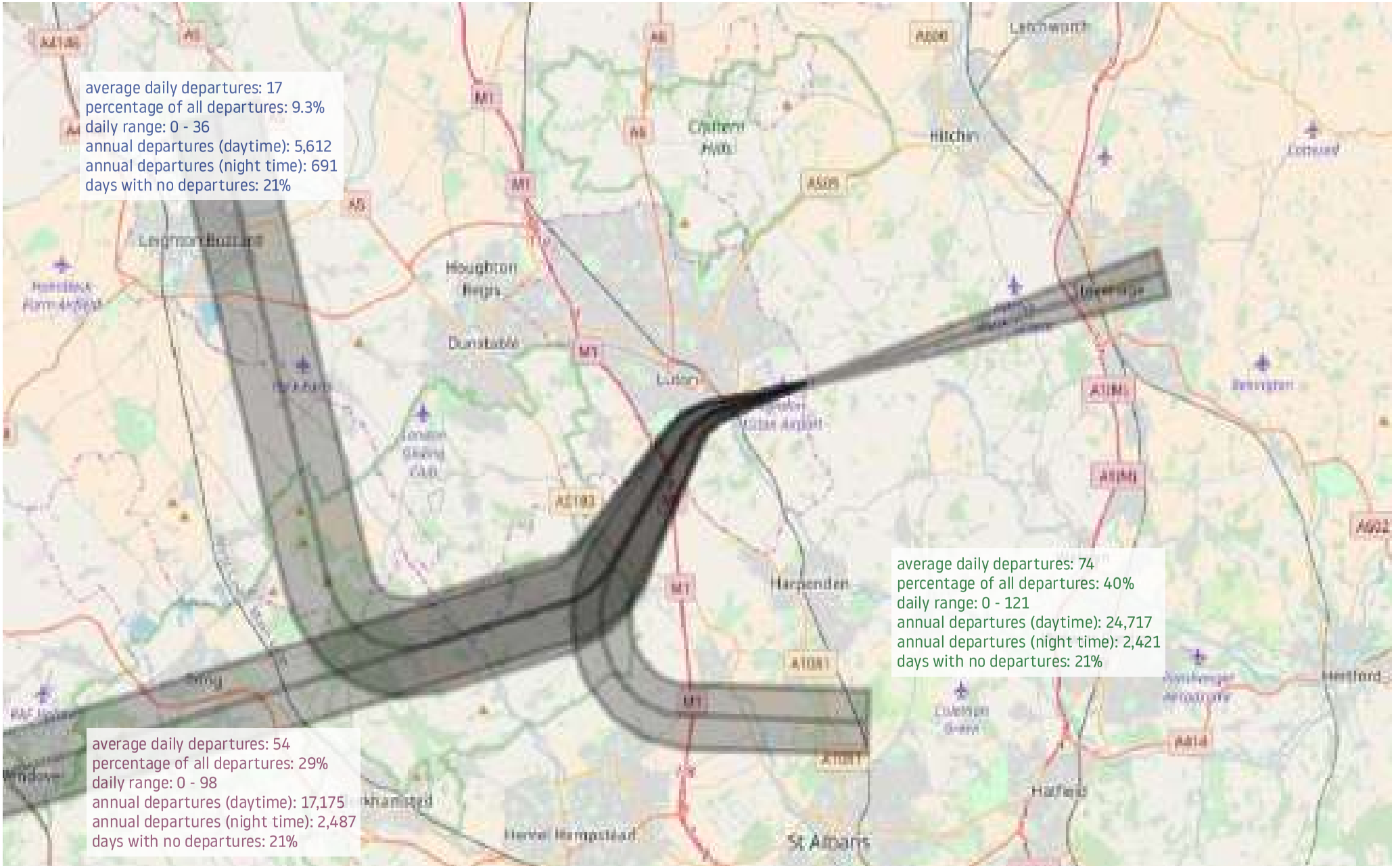
Once aircraft have reached the NPR restricted altitude they will be considered no longer on the Noise Preferential Route. At that stage the aircraft may be directed by Air Traffic Controllers onto a different heading in order to integrate with the overall flow of traffic, this is known as vectoring. However on RNAV Match/Detling SID aircraft should not be vectored before the railway line between St Albans and Harpenden, unless this is required for safe separation from other aircraft or for other safety issues such as avoiding adverse weather.

Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton Airport with detailed information about each departure route.

Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



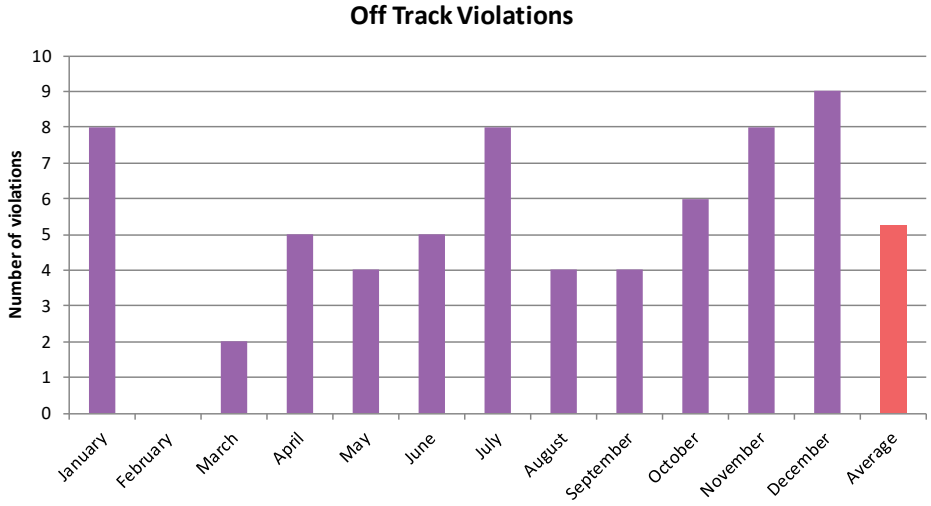
On Track performance

On the 1st April 2015 London Luton Airport implemented a Track Violation Penalty System as part of the noise related planning conditions. Using the airport's Aircraft Noise and Track Monitoring System, the Flight Operations Team evaluates the radar tracks and investigates them with required input from Air Traffic Control (ATC) and airlines. A departure is deemed to have complied with the Noise Preferential Routing if the portion of flight below the appropriate vectoring altitude is flown wholly within the Lateral Swathe (LS). Where the aircraft is clearly flying outside the LS, the aircraft is identified as causing a "possible" track violation and is subject to a nominal fine. This money is transferred to our Community Trust Fund which awards grants to community projects.

As always, safety is paramount and there may be cases which involve vectoring an aircraft sooner than at the NPR height restriction. If ATC identifies any valid justification that could explain the deviation from the track, then the operator causing it will be exempt from the fine. Valid justifications include:

- Safety or operational reasons, i.e ATC vectoring
- Weather avoidance due to thunderstorm activity (as instructed by ATC)
- Emergencies

The diagram below shows off-track violations by month in 2017. The track keeping performance was 99.6%. This calculation includes deviations for weather, traffic avoidance and those identified as violations.



£50,250 the total of all collected fines transferred to Community Trust Fund

The breakdown of the violations by aircraft type is shown in the tables below.

A/C Type	Total № Violations
GLF6	9
GL5T	8
A320, CL60	8
B738, C25A, GLF4, H25B	12
B734, C525, C650, F900, GALX	10
AT72, ATP, B462, B733, B788, C680, CL30, E145, E35L, F2TH, GLF5, H25C, LJ35, LJ60, RJ85, SW4	16
TOTAL	**63**

Area Navigation (RNAV) procedures

In the 2016, AMR we reported that a small number of operators were experiencing technical issues with the RNAV procedure and that we had identified a solution that was due to be implemented in February 2017.

We can confirm that this solution was implemented as planned and the technical issues that some operators were experiencing have now been resolved, resulting in 100% of operators using the RNAV procedure.

As part of the CAA's Post Implementation Review we submitted all of the requested data in October 2017 to the regulator for assessment of the airspace change, this includes flight track and complaint data. The details of the outcome of this will be published on the CAA's website in due course.

Next Steps in Airspace Change

In 2017, the CAA published new regulatory guidance that the aviation industry has to follow with regard to changing airspace arrangements (CAP 1616 - Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements).

In August 2017, LLA attended a meeting with the CAA to discuss the new process and how this would apply to the work that has already been completed to date relating to the 26 Match RNP airspace change. Following this meeting a decision was made to commence the ACP works from the beginning in order to fully comply with the new guidance.

LLA invited members of the airport consultative committee to form a small focus group with the objective of providing LLA with stakeholder views and potentially highlight previously overlooked consequences of a particular design option prior to formal consultation.

The Sky's the Limit

The London airspace is a particularly busy area and requires modernisation. The current airspace has not changed in the last 50 years despite the increase in movements from all airports. It is critical that the industry and Government now work together to deliver modernisation. In 2016, an industry campaign 'The Sky's the Limit' was set up to call on the Government to prioritise its work on airspace, noise and support industry efforts to do so. London Luton Airport strongly supports this campaign.

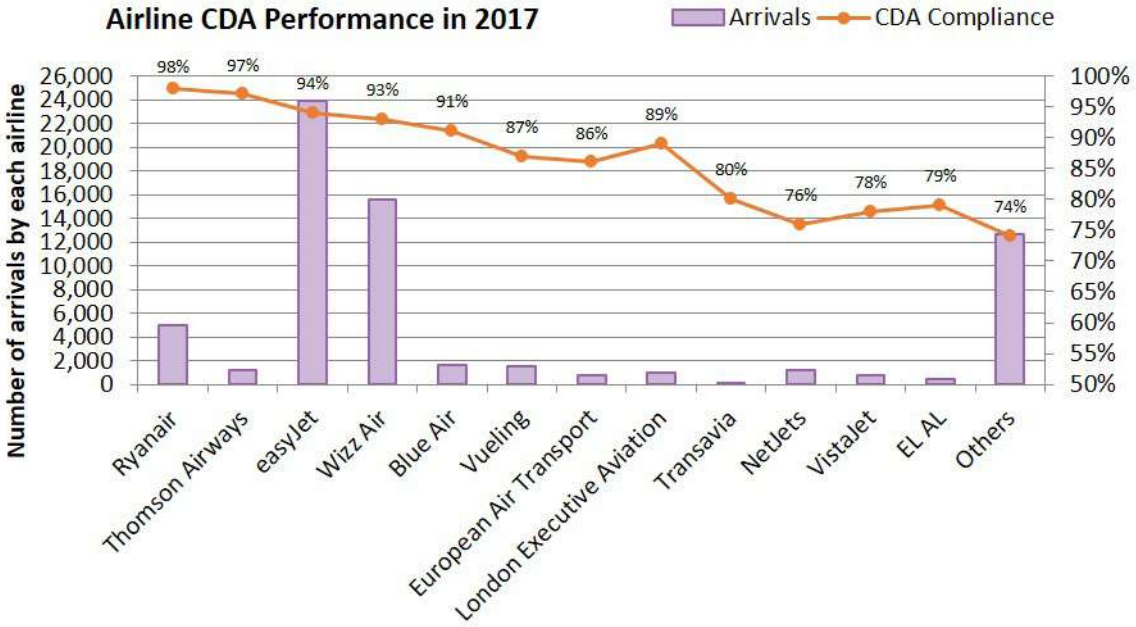
More information and videos regarding The Sky's the Limit campaign are available on their website which can be accessed http://theskysthelimit.aero/

Arriving Aircraft

Although there are no set routes for arriving aircraft there are long established procedures to mitigate the disturbance that can be caused on approach to the airfield. One of the most successful measures is a noise mitigation procedure called Continuous Descent Approach (CDA).

The conventional approach involves descending in steps using engine thrust to level off. In a Continuous Descent Approach, or CDA, an aircraft stays higher for longer and descends at a continuous rate to the runway threshold therefore reducing periods of prolonged level flight at lower altitudes. With CDA less fuel is burnt, less emissions are produced but most importantly it reduces the noise by avoiding the use of engine thrust required for level flight.

The overall CDA achievement was 93% with several major LLA operators achieving higher performance; easyJet, Ryanair and Thomson Airways. The chart compares the level of CDA performance by our main airline operators.



[1] - An Instrument Landing System (ILS) is a ground-based instrument approach aid based on two radio beams which together provide lateral and vertical guidance to an aircraft approaching and landing on a runway.

Delayed Landing Gear Deployment Trial

At LLA we always aim to work constructively with our local community inorder to reduce the impacts of noise. In 2017 LLA conducted an aviation leading trial to reduce noise by from arriving aircraft. The trial, conducted during the summer, consisted of aircraft delaying the deployment of landing gear.

As an aircraft makes its final approach most noise is caused by the flow of air over the fuselage as drag is created to slow the aircraft down. Noise was measured along the arrivals flightpath to understand what, if any, reduction which could be achieved. Stevenage, Dagnall and Whipsnade were among those communities who saw the greatest benefit of between 2.7db and 3.4db

Following the successful trial, some operators have already changed their operating procedures to make this standard practice. LLA is now working with all operators to encourage them to follow suit.

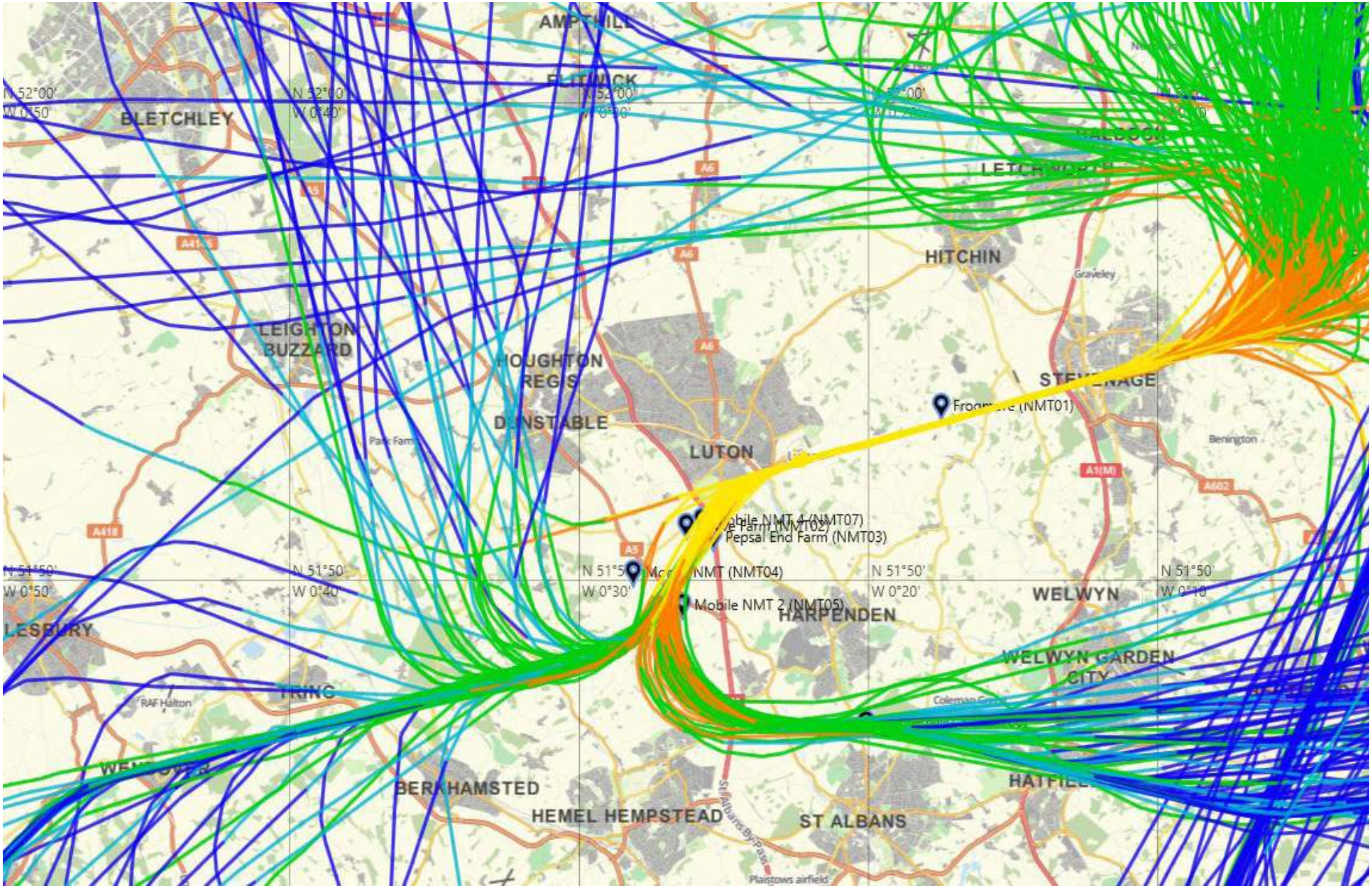
Departure and arrival flight tracks

Maps overleaf display typical 24 hour periods of both westerly and easterly operations. The colour coding from yellow to blue represents different altitude bands up to 10,000ft above mean sea level.

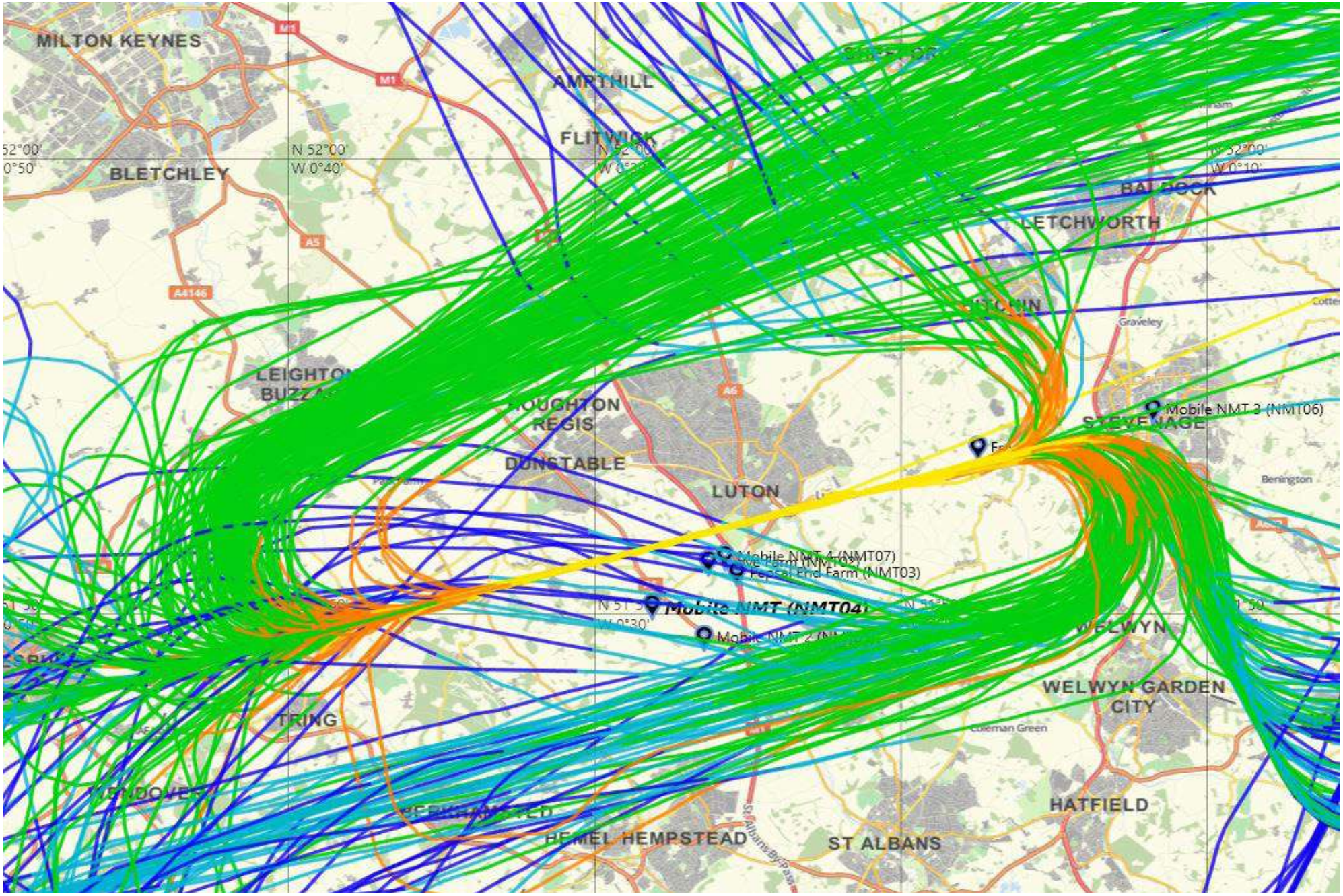
The last two maps display aircraft track density plots for the summer period 16th June - 15th September 2017. A track density plot is a map which displays the pattern of aircraft flight track passing over the region around the airport during a specific period. The system analyses the number of flights passing over each grid element of an array. The colour coding from purple to red represents the range 1 to over 147 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element was less than 1 flight. The red areas represent locations where operations are more densely concentrated.

It should be noted that London Luton Airport's aircraft movements integrate with a traffic network travelling to and from other airports in the region, and the South East is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton Airport and overflights from other airports have been omitted for clarity.

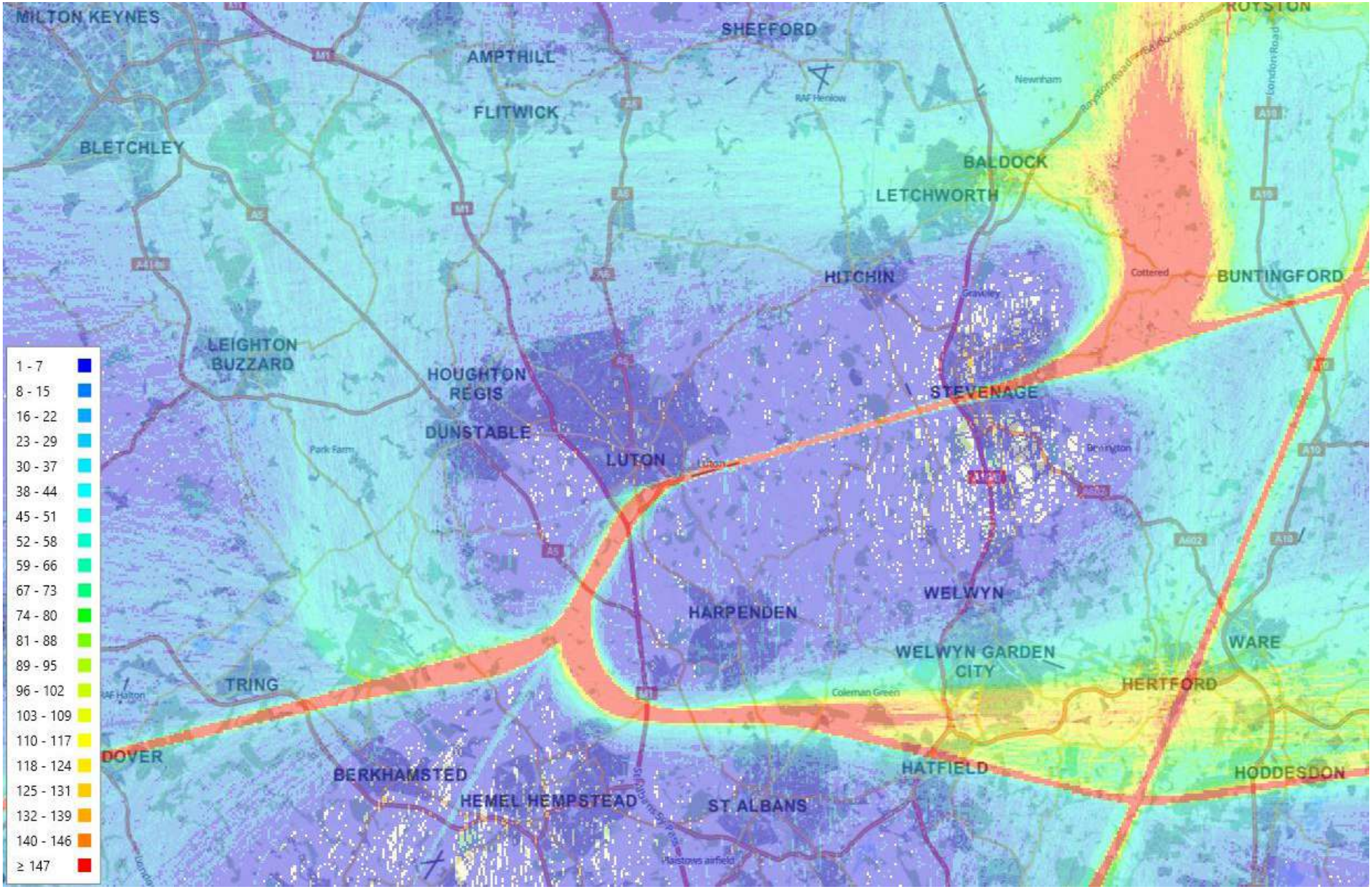
Westerly (26) Flight Routes (24 hour period)



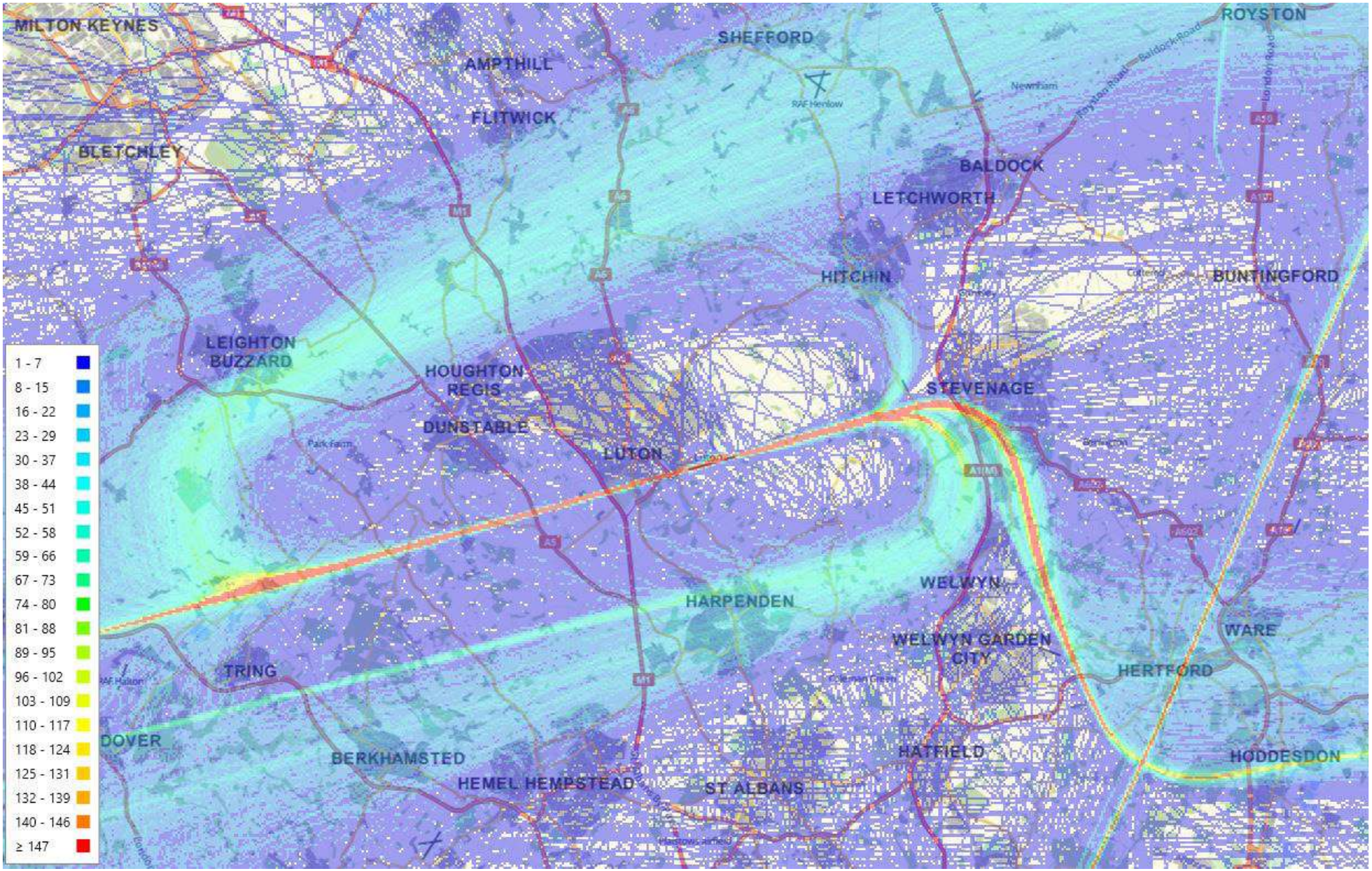
Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2017 - Westerly (26)



Plot Density - 16th June - 15th September 2017 - Easterly (08)



Aircraft Noise

Noise is generally defined as unwanted sound. Although it is recognised that noise perception is very subjective, there are a number of internationally recognised terms to describe and measure aircraft noise. Most airport related noise is created by aircraft approaching, taking-off and taxiing to and from the runway. The management and control of noise continues to be a major element of the airport's policy to constantly seek to minimise and mitigate our environmental impact.

How is noise monitored?

People who live close to airports or under flight paths can often feel strongly about the disturbance to their lives from noise. Effects of noise include general distraction, speech interference and sleep disturbance which can lead to annoyance and complaints.

At LLA we monitor noise and track keeping with a specialised system that is designed to monitor air traffic within a radius around the airport (set at around 25 miles), and generally up to an altitude of 12,000ft. It downloads noise data from three fixed noise monitors located 6.5km from the aircraft start of roll, at either end of the runway within the neighbouring communities. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area. New features and system enhancements continue to improve the functionality and capabilities available to the Flight Operations Department.

In 2017, the Flight Operations team purchased three new mobile noise monitors which has allowed the team to expand the noise monitoring programme. During 2017, noise was monitored in Flamstead, Harpenden, Hemel Hempstead, Markyate, Redbourn, Sandridge, Slip End, South Luton, St Albans and Wheathampstead. Details of the latest Community Noise Reports can be found here.

Noise violation levels

The following table identifies daytime and night-time noise levels correlated to departing aircraft at the fixed noise monitoring terminals.

In order for a noise event to be correlated to an aircraft it should reach a detection threshold. The noise monitoring terminals are set at the lowest level to record the maximum number of aircraft noise events. However, a number of smaller aircraft types, such as business jets and propeller aircraft, get very close to but do not reach the detection threshold. Ambient background noise is also an important factor as specific incidents such as loud road traffic, emergency vehicle sirens, lawn mowers, drills etc. can register noise levels louder than an aircraft overhead, which results in not all aircraft movements being correlated to noise events. Generally, the louder noise events have more certainty of being correlated with aircraft movements.

Weather conditions can also effect the number of noise monitoring events recorded in the table; for example, if winds are greater than 10m/s and temperature is either higher than 25°C or below -10°C, results from noise monitors will be invalid and therefore will not be correlated.

	dB (A)	Daytime	NightTime	Total
Number of Correlated Events	<70	5,130	698	5,832
	70	1,324	163	1,489
	71	2,513	311	2,825
	72	5,510	626	6,140
	73	10,268	1,077	11,357
	74	11,504	1,121	12,640
	75	7,501	758	8,268
	76	3,584	475	4,069
	77	2,050	363	2,418
	78	1,224	273	1,504
	79	599	122	724
	80	226	46	274
	81	70	3	73
	82	25	1	26
	83	2	0	2
	84	4	0	4
	85	1	0	1
	86	0	0	0
	87	0	0	0
	88	0	0	0
	89	0	0	0
	90	0	0	0

During the daytime 98% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 85% registering below 76dB(A). Throughout the year 927 correlated daytime departures (2%) registered maximum noise levels at 79dB(A) or above.

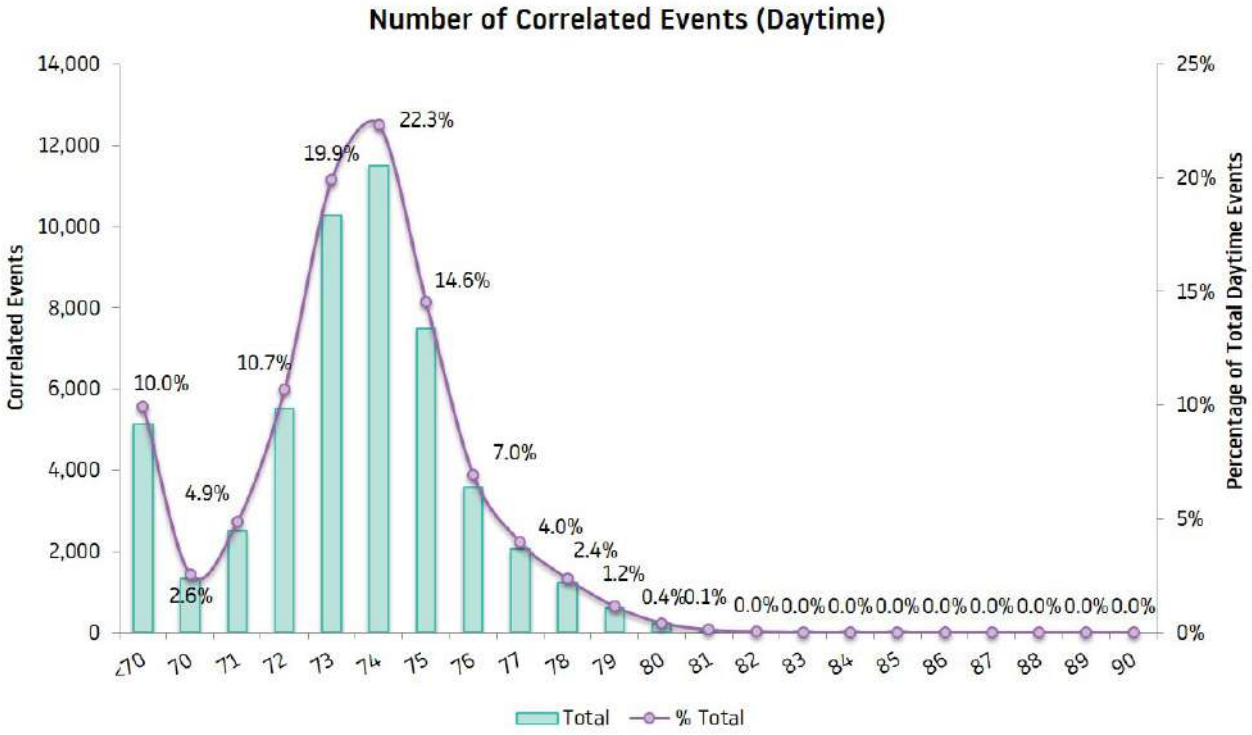
There were 7 correlated departing aircraft in the daytime which recorded a maximum noise level greater than 82dB, all of these departures were fined as part of the Noise Violation Scheme, these fines were added to the Community Trust Fund.

During the night 97% of correlated departures recorded maximum noise levels below 79dB(A), with 79% below 76dB(A). During the year 50 correlated night departures (3%) registered maximum noise levels at or above 79dB(A).

There were 4 correlated departing aircraft in the night time which recorded a maximum noise level greater than 80dB, all of these departures were fined as part of the Noise Violation Scheme, these fines are put into the Community Trust Fund.

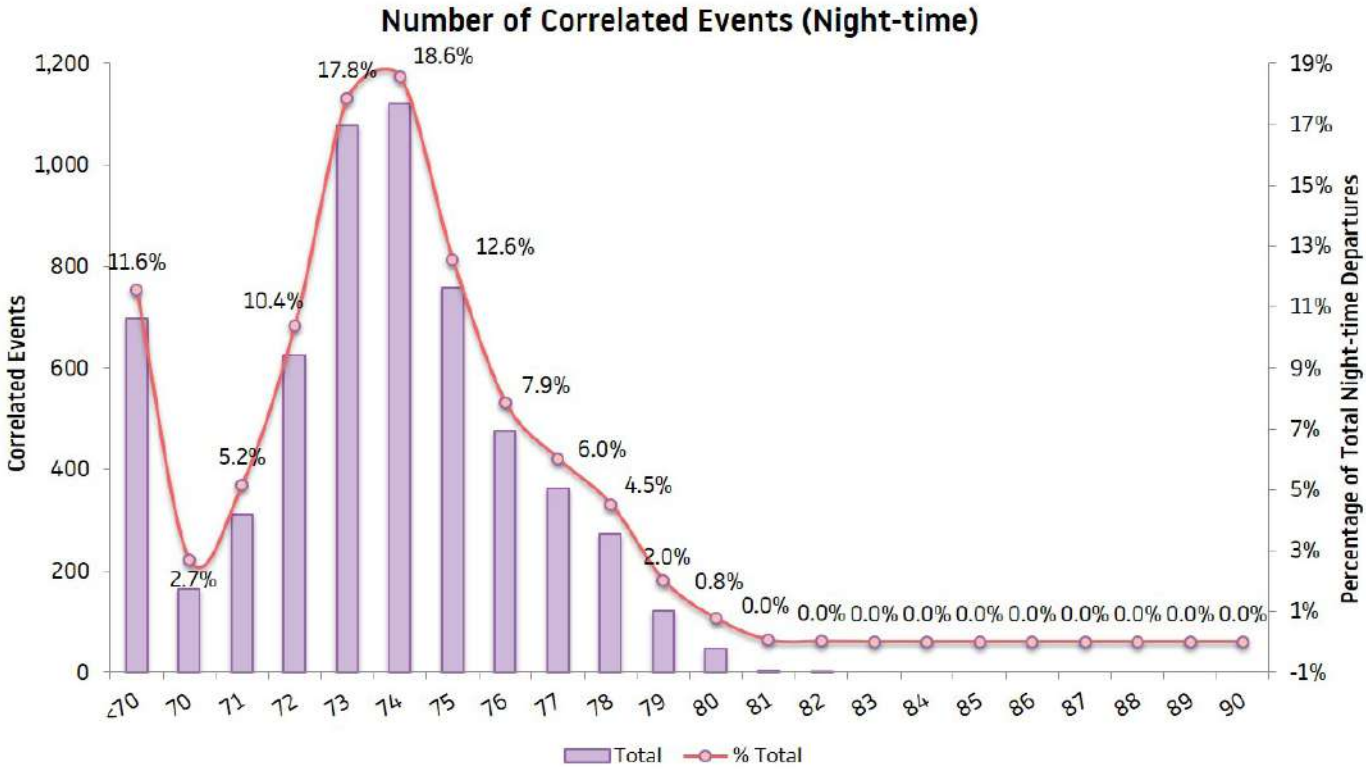
Daytime Noise

The following graph shows the number of correlated events during the daytime period (07:00hrs - 23:00hrs) compared to the total percentage of correlated events during the daytime.



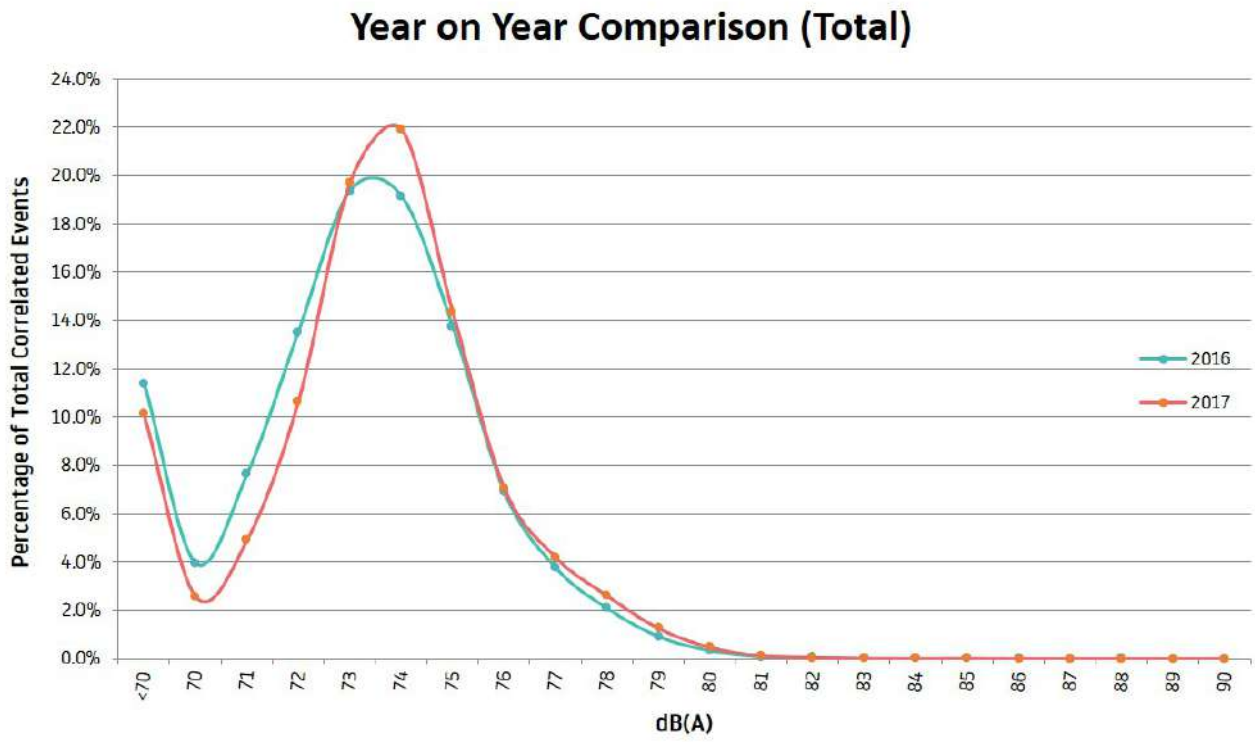
Night-time Noise

The following graph shows the number of correlated events during the night-time period (23:00hrs - 07:00hrs) compared to the total percentage of correlated events during the night-time.



Annual Comparison

The graph below shows the year on year comparison of the correlated departure noise events.



Please note, for a short period during Q3 2016, one noise monitor was out of service due to calibration and this may have an effect on the overall noise recordings for the year.

Noise violations during 2017

There were 7 violations of the daytime noise level in 2017, and a total of 4 violations of the 80dB(A) night noise violation level (details below), compared to 21 day-time noise violations and 3 night noise violations in 2016. Operators at London Luton Airport take these noise violation limits very seriously and in some cases these have led to changes in operating procedures in order to reduce the noise from their aircraft. As a result of the Boeing 732 noise violations during 2017, this aircraft no longer operates at Luton.

	Date / Time (Local)	Aircraft Type	Noise Level	Penalty
Daytime	26/01/2017 12:47:00	B732	84dB (A)	£100
	15/03/2017 07:07:00	B738	84dB (A)	£100
	31/03/2017 12:36:00	B732	84dB (A)	£100
	08/05/2017 13:14:00	B732	83dB (A)	£100
	02/07/2017 13:51:00	B732	83dB (A)	£100
	25/07/2017 14:33:00	B732	84dB (A)	£100
	05/08/2017 11:27:00	B732	85dB (A)	£100
Night-time	01/03/2017 03:13:00	A306	81dB (A)	£100
	31/03/2017 00:20:00	B739	81dB (A)	£100
	01/08/2017 00:48:00	AN12	82dB (A)	£100
	21/08/2017 06:06:00	A320	81dB (A)	£100

All fines are passed to the London Luton airport Community Trust Fund, further details of which can be found at: https://www.london-luton.co.uk/corporate/community/noise/

Noise Insulation Scheme

In 2016 we began our Noise Insulation Scheme, which is just one element of our noise management plan to reduce the impact of noise on those properties in Hertfordshire and Bedfordshire closest to the airport. Under the scheme we can install double glazing, secondary glazing and ventilation units to eligible rooms which include; living rooms, dining rooms, kitchen-diners and bedrooms.

During 2017, 78 properties were contacted and 38 properties accepted the insulation.

Noise Contours

Since 1989 the preferred measure of aircraft noise, recognised by UK Government, has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700-2300 for an average day between the 16th June and 15th September.

When planning permission was given in 2014 for development at London Luton Airport a number of conditions were imposed. Condition 12 requires that daytime and night-time contours are produced on an annual basis for the previous summer period based on actual aircraft movement data and for the following summer period based on predicted aircraft movement data. The areas of these contours are to be compared to the area limits contained in Condition 12. Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the airport and also the departure routes flown. Changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, determined by the prevailing wind direction.

Annual noise contours summer 2017

The table below shows the annual noise contours for summer 2017 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM software (the Integrated Noise Model) version 7.0d which is the method used by many other airports in the UK.

$L_{Aeq, 16\ hour}$ Daytime	Contour Area (km^2)					
	1984	1999	2016	2017	Difference 2016-2017	2018 (forecast)
>72	1.63	1.5	1.0	1.0	0.0	1.0
>69	2.80	2.5	1.7	1.7	0.0	1.7
>66	4.86	4.4	3.2	3.0	-0.2	3.1
>63	9.10	7.3	6.2	5.9	-0.3	6.0
>60	17.18	11.8	10.6	10.3	-0.3	10.5
>57	**31.52**	**19.6**	**19.2**	**19.0**	**-0.2**	**19.4**

Considering the 57 dB LAeq, 16h summer daytime 2017 noise contour there is a decrease in area of approximately 1% when comparing the 2017 contour with the 2016 contour. This is largely due to the updated validation for 2017, resulting in greater accuracy of the assessment from the additional noise monitoring carried out in the community.

A comparison of 2016, 2017 and 2018 forecast daytime contours is shown. This shows that the 2016, 2017 and 2018 forecast contours are all very similar, with the slight differences in shape being primarily due to differences in modal split.

$L_{Aeq, 8\ hour}$ Night-time	1984	1999	2016	2017	Difference 2016-2017	2018 (forecast)
>72	0.79	1.1	0.4	0.4	0.0	0.4
>69	1.39	1.8	0.6	0.7	+0.1	0.7
>66	2.42	3.0	1.0	1.0	0.0	1.1
>63	4.01	5.2	1.7	1.8	+0.1	1.8
>60	7.06	8.3	3.3	3.4	+0.1	3.5
>57	13.05	13.2	6.3	6.3	0.0	6.4
>54	24.48	21.6	11.5	12.2	+0.7	12.4
>51	44.92	36.0	20.7	22.3	+1.5	22.7
>48	**85.04**	**60.6**	**36.5**	**38.7**	**+2.2**	**39.6**

Considering the 48 dB LAeq, 8h night time noise contour there is an increase in area of approximately 6% when comparing the 2017 contour with the 2016 contour. This is largely due to the 13% increase in movement numbers, although this is partically offset by the updated 2017 validation.

The 48 dB LAeq,8h 2018 contour is forecast to grow by 2% compared to the 2017 contour. This is largely due to the forecast 3% increase in commercial aircraft movements. A comparison of 2016, 2017 and 2018 forecast night time 48 dB LAeq,8h is show. This shows that the 2017 contour is larger than the 2016 contour, particulary at the western end near Caddington. The contour is also slightly larger at the south-western end south of Markyate. The 2017 contour is very similar to the 2016 contour at the eastern end despite the increase in night movements, this is due to the changes in operating direction and validations.

The 2018 forecast contour is slightly wider and shorter than the 2017 contour at the eastern end, larger at the western end and slightly shorter at the south-western end, these slight change in shape are due to the change in operating direction.

Contour population counts

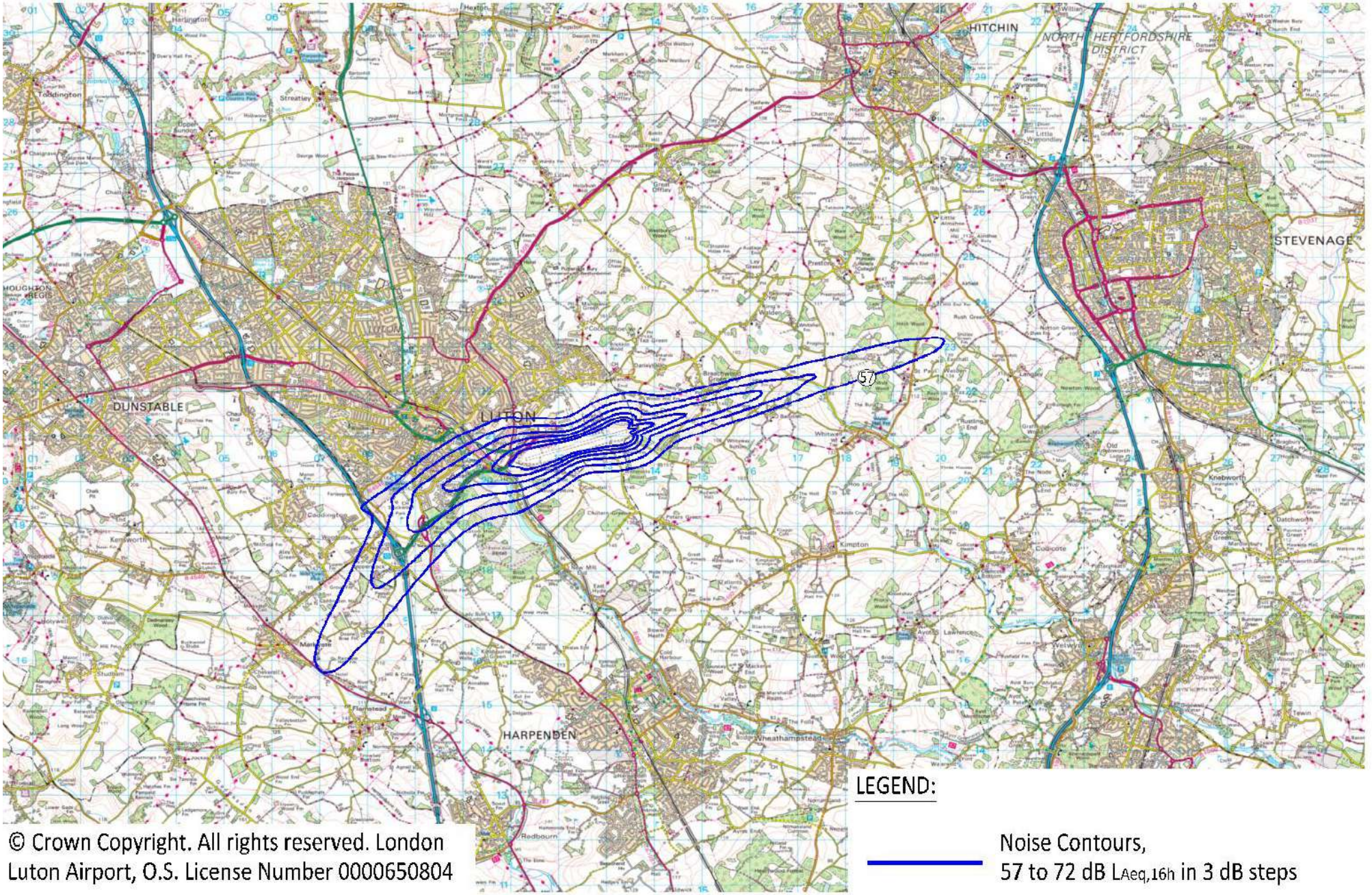
The population counts for this year were calculated using the CACI Ltd, 2015 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted. Please note, the population and dwellings data has been rounded to the nearest 50.

$L_{Aeq, 16\ hour}$ Daytime	2016		2017	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	10	24	0	0
>63	700	1,850	550	1,400
>60	1,700	4,450	1,650	4,200
>57	**3,600**	**8,850**	**3,400**	**8,400**

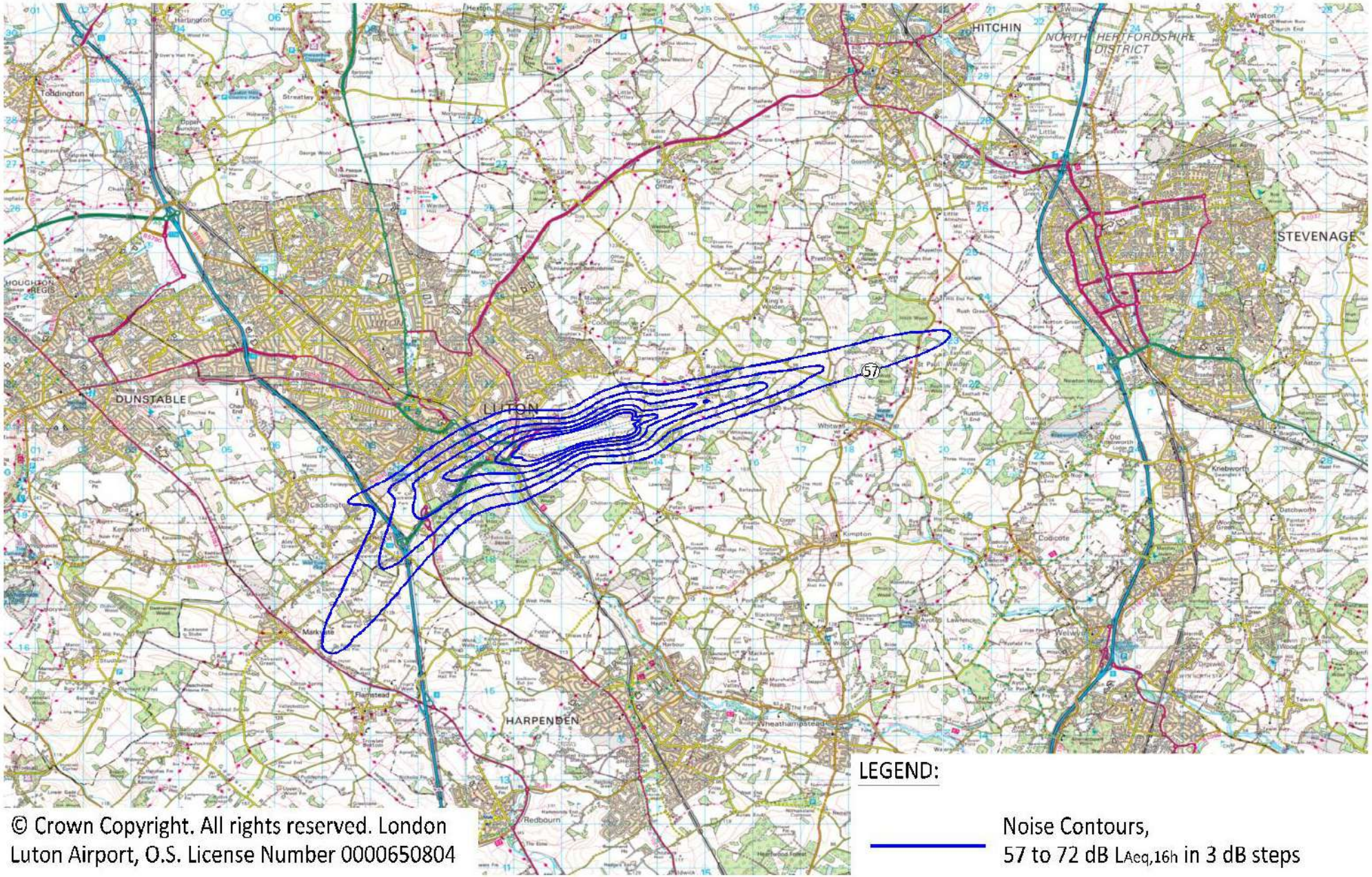
$L_{Aeq, 8\ hour}$ Night-time	2016		2017	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	14	34	0	0
>57	500	1,300	500	1,400
>54	1,550	4,150	1,600	4,200
>51	3,250	8,100	3,450	8,500
>48	**6,750**	**16,100**	**7,500**	**17,800**

The population and number of dwellings within the contours has increased, in lined with the contour area. It can be seen that the contour shape is similar, although there have been slight changes due to the change in modal split. This mean that despite an increase in total movements, there were fewer runway 08 operations in 2017 compared to 2016. This has the effect of shortening the contour to the west and narrowing it to the east, with the associated increase in runway 26 operations leading to an increase in length to the east and both length and width to the south-west.

Annual Day Noise Contours Summer 2017



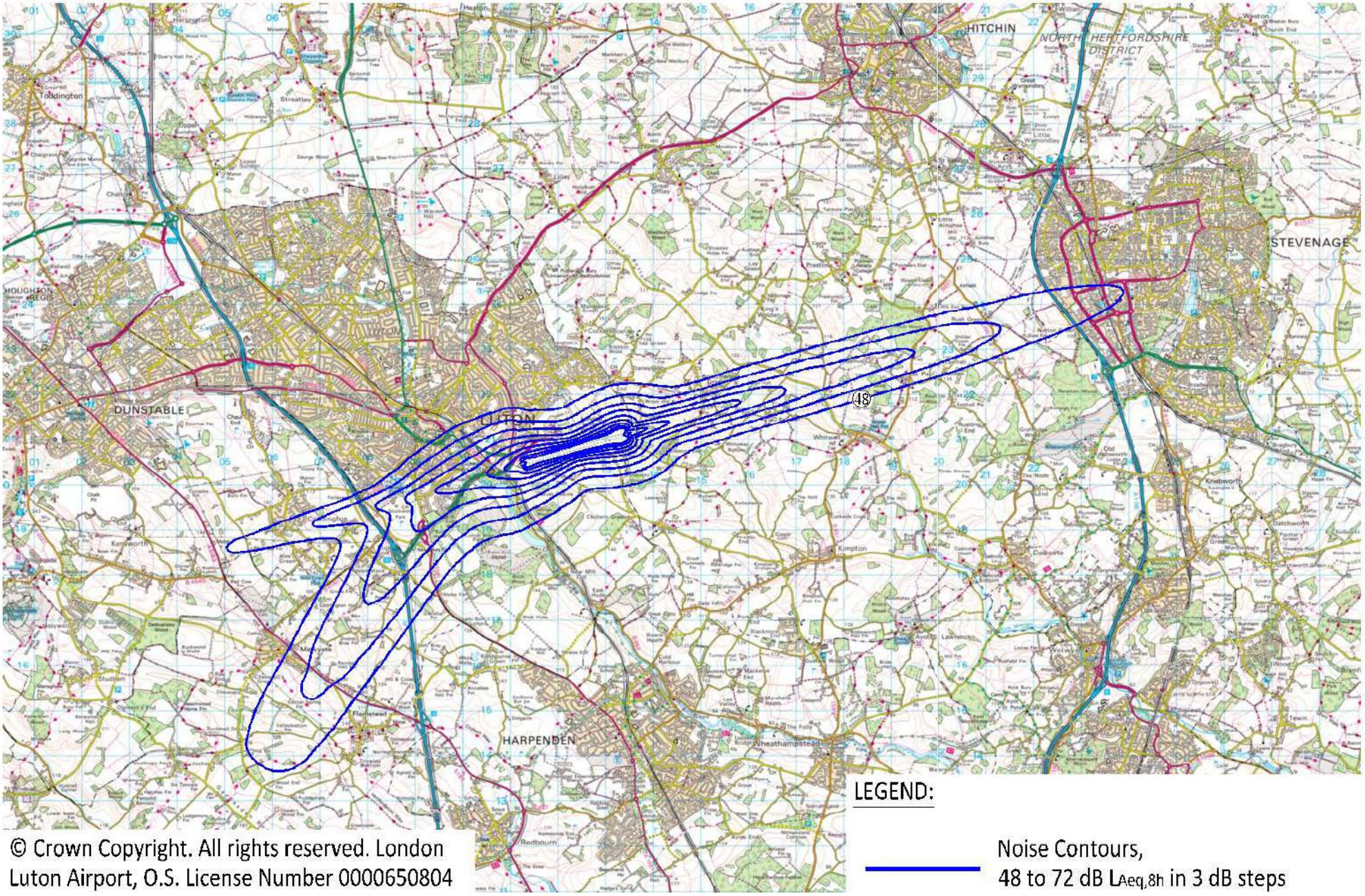
Annual Day Noise Contours Summer 2018



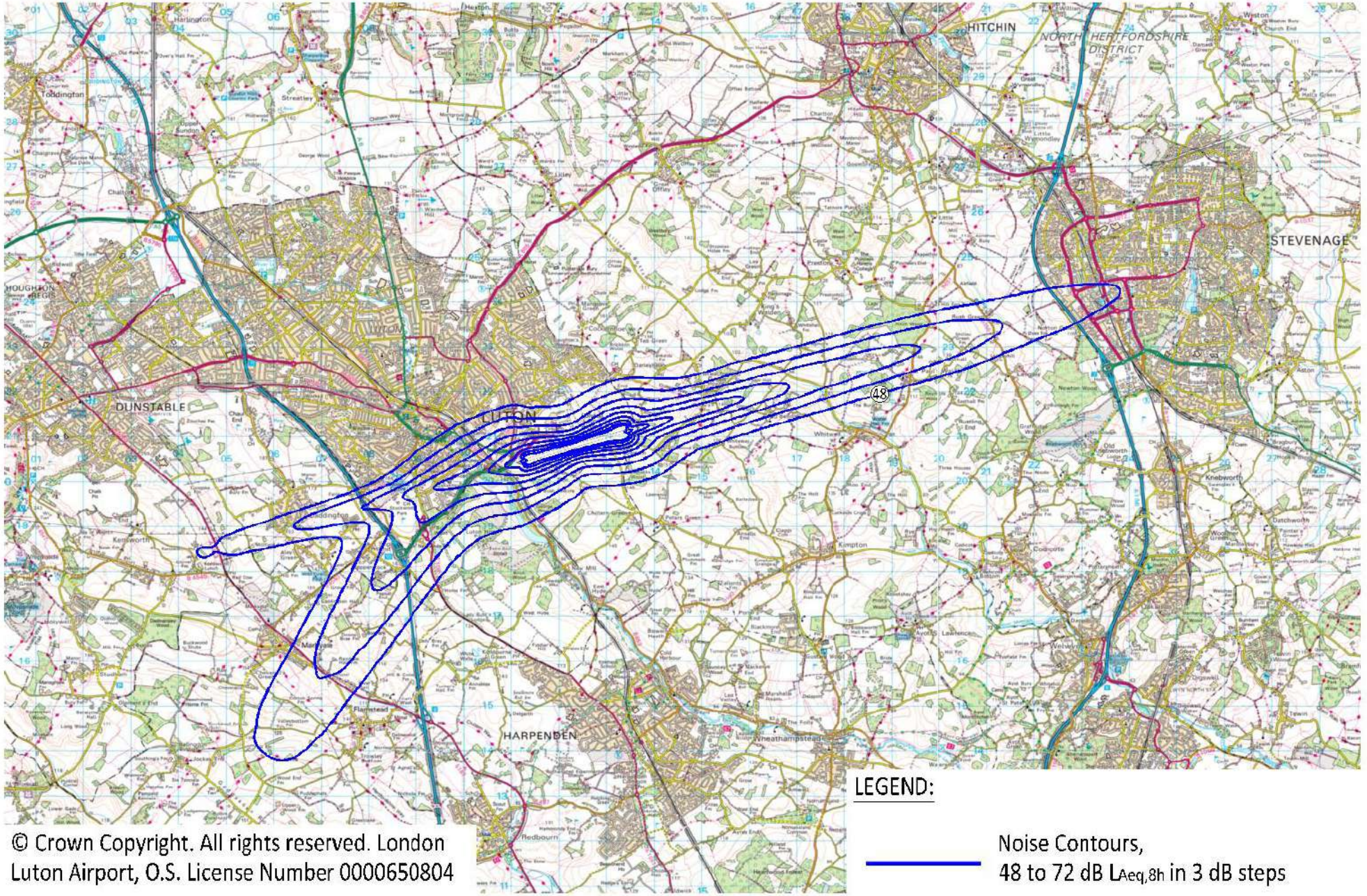
LEGEND:

Noise Contours,
57 to 72 dB $L_{Aeq,16h}$ in 3 dB steps

Annual Night Noise Contours Summer 2017



Annual Night Noise Contours Summer 2018



Annual Noise Contours 2017

The annual Lden noise contours for 2017 have been produced in accordance with London Luton Airport's Noise Action Plan. The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Compared to annual summer 2017 noise contours Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2017, with a 10dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2017.

Annual Lden Noise Contour Results

Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2016	2017	2016	2017	2016	2017
>75	0.8	0.9	0	0	0	0
>70	1.9	1.9	0	0	0	0
>65	5.5	5.8	1,100	1,200	450	450
>60	15.2	15.8	5,700	6,600	2,200	2,600
>55	**39.3**	**39.9**	**17,100**	**18,800**	**7,000**	**7,850**

Annual Lnight Noise Contour Results

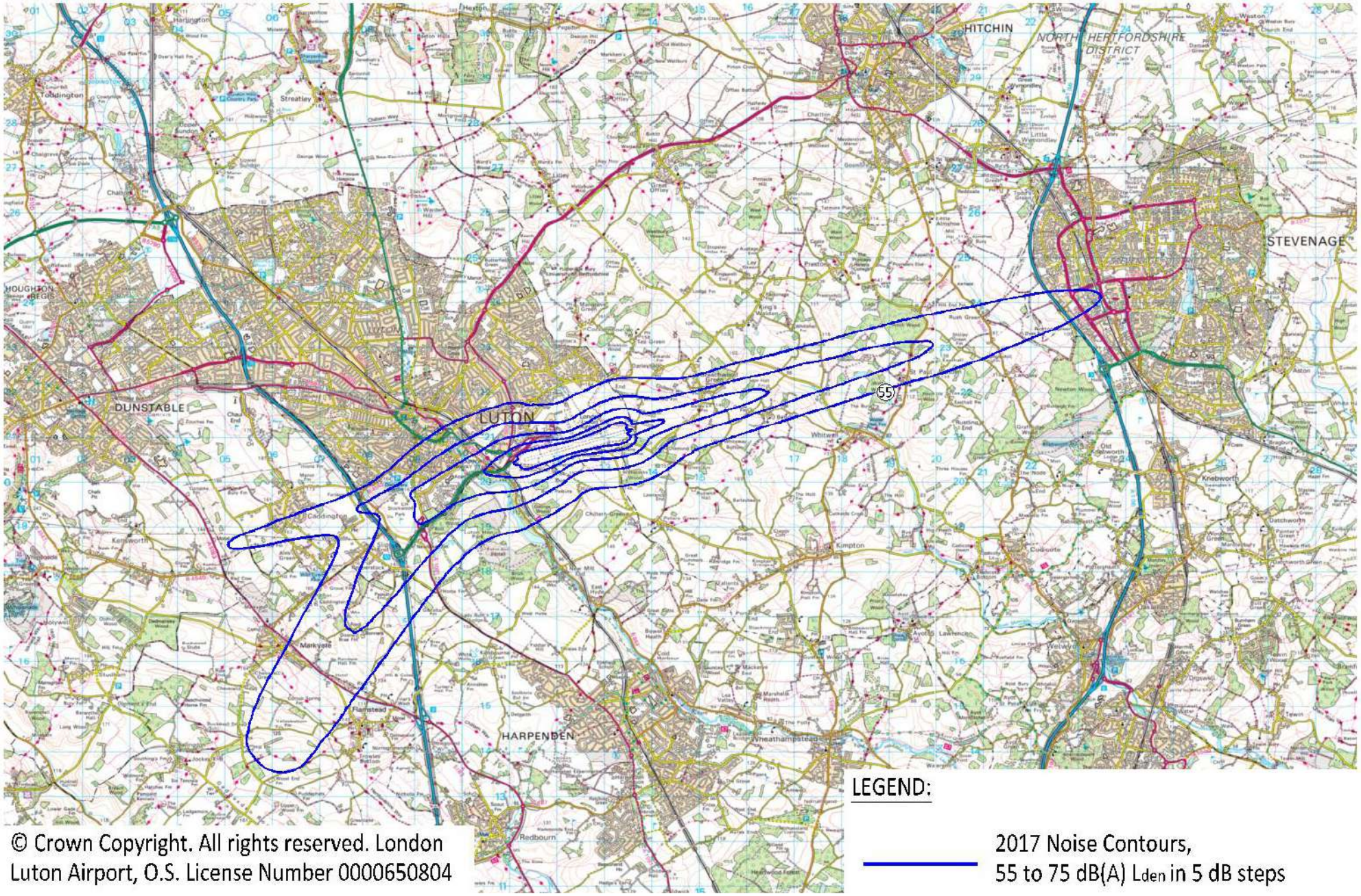
Contour Value (dB(A) L_{night})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2016	2017	2016	2017	2016	2017
>66	0.9	0.9	0	0	0	0
>63	1.4	1.5	0	0	0	0
>60	2.4	2.5	0	0	0	0
>57	4.7	4.9	500	800	200	300
>54	8.5	8.9	2,100	2,200	800	800
>51	16.3	17.1	6,000	6,800	2,300	2,700
>48	**29.3**	**30.5**	**11,600**	**12,900**	**4,800**	**5,350**

The areas of every Lden contour have increased except the area of the 70 dB Lden contour, which has remained the same. The increases are relatively consistent across contour bands, ranging from 2-7%, and are in line with what would be expected due to the increase in aircraft movements and the slight reduction in dpearture noise levels. Similarly it can be seen that the areas of all the Lnight contours have increased by around 4-7%.

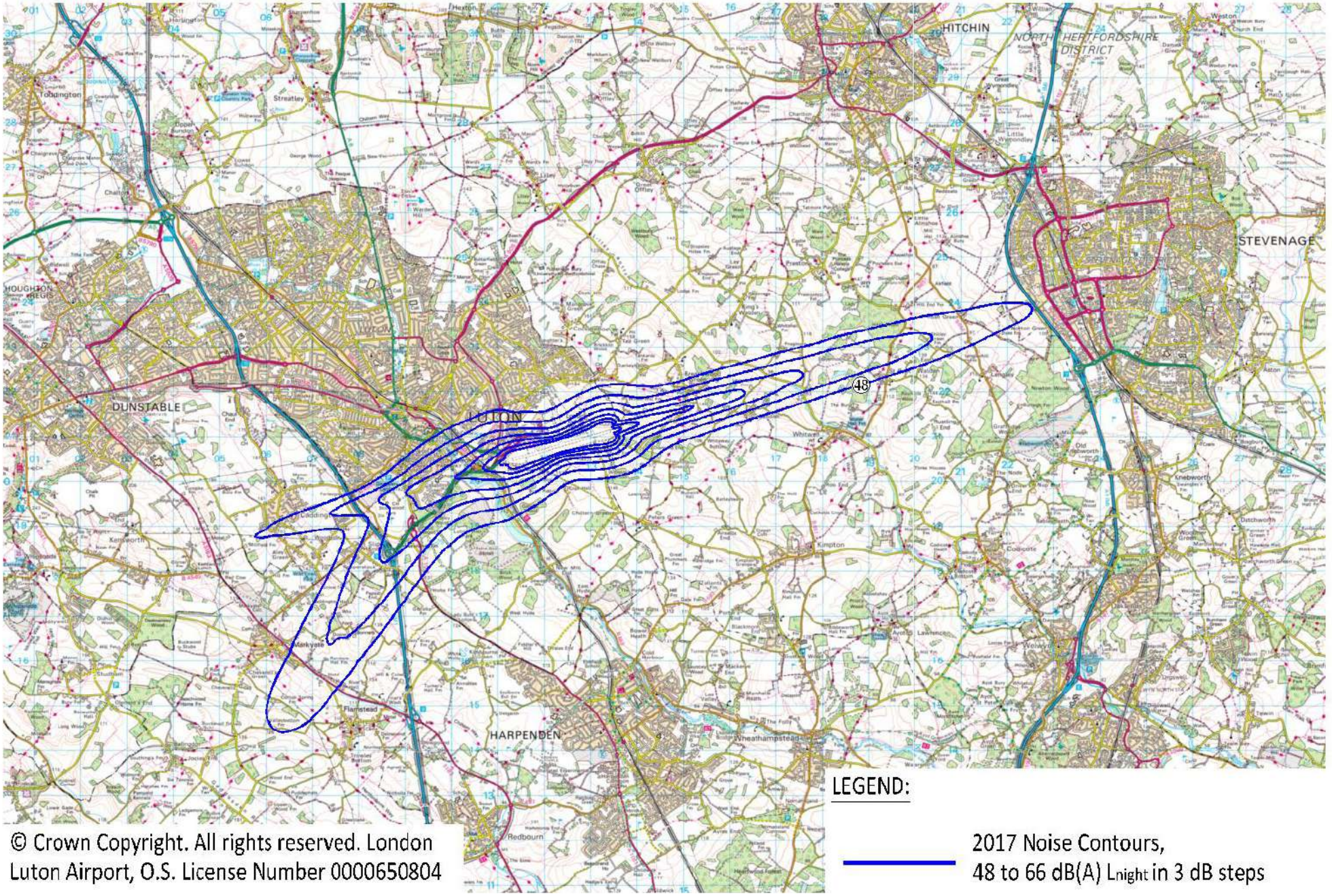
[1] - Population counts rounded to nearest 100

[2] - Dwelling counts rounded to nearest 50

Annual L_{den} Noise Contours 2017



Annual L_{night} Noise Contours 2017



LEGEND:

2017 Noise Contours, 48 to 66 dB(A) L_{night} in 3 dB steps

Correspondence and Complaints

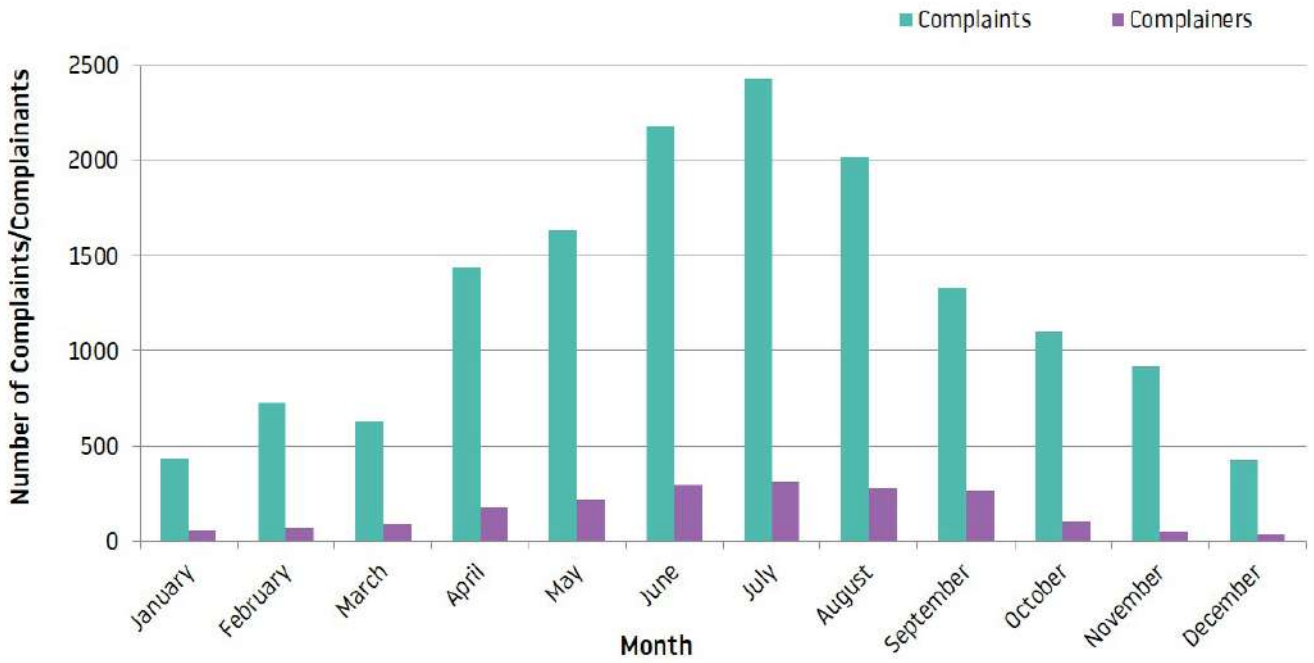
Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

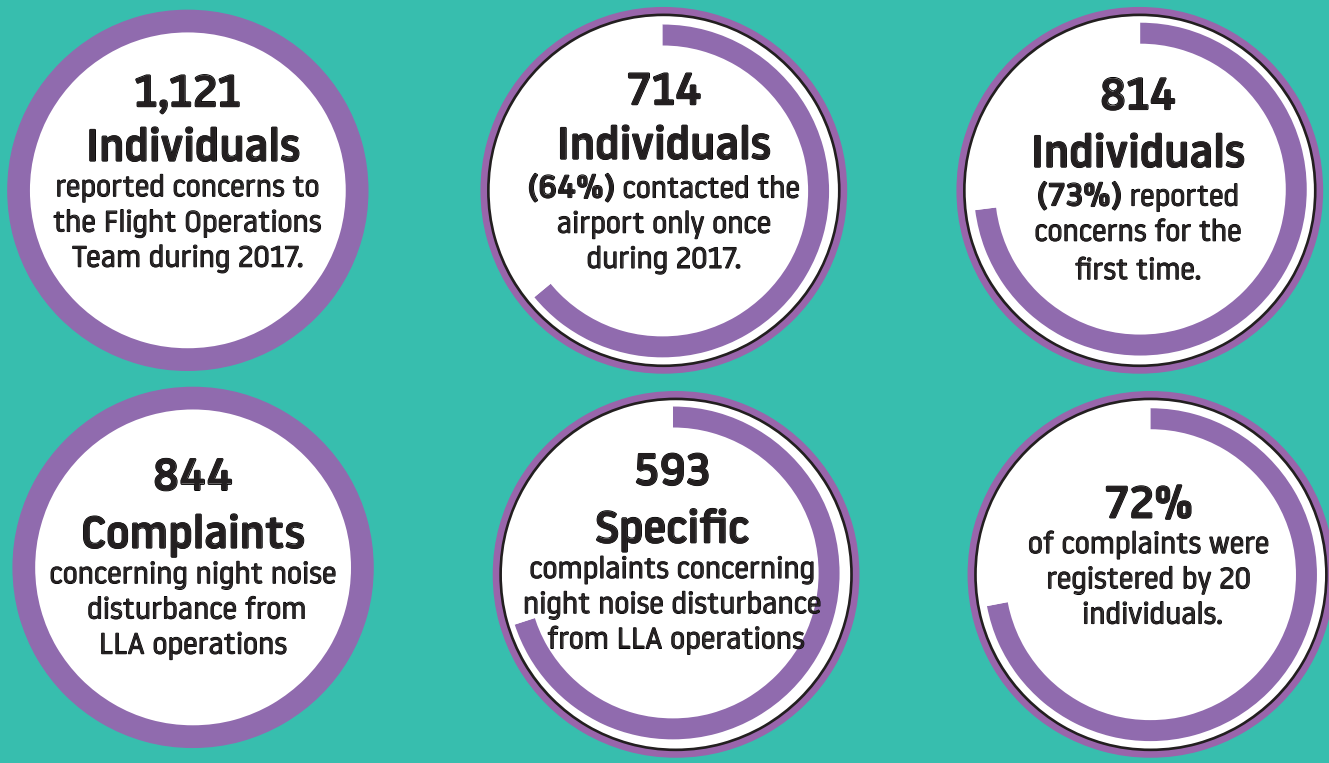
Complaints are reported in two forms – general disturbance and specific disturbance. A general disturbance relates to a complaint that does not specify a time period, examples of this type of complaint includes frequency, air quality and ground noise. A specific complaint relates to a complaint which specifies the time which can be correlated to an aircraft, example complaints of this type include too low, too loud, night flight and off-track. If a single piece of correspondence contains multiple specific disturbances, this will be logged as a general complaint regarding frequency.

Total complaints relating to LLA aircraft operations

	2016	2017
Total No. of Complaints relating to LLA aircraft operations	4,231	15,384
No. of Complainants	815	1,121
No. of General Complaints	1,174	3,333
No. of Specific Complaints	3,057	12,051
Average No. of Complaints per Complainant	5.2	13.7
No. of Aircraft Movements per Complaint	31.0	8.8

During 2017 a total of 15,384 complaints (on average 42 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 4,231 complaints in 2016. Out of the total complaints 72% were registered by the 20 most regular complainants and 45% from just five individuals. A further 614 complaints received were not attributable to LLA traffic. The figure below shows the complaints statistics throughout 2017. More complaints were received in the summer months, correlating with an increase in aircraft activity.



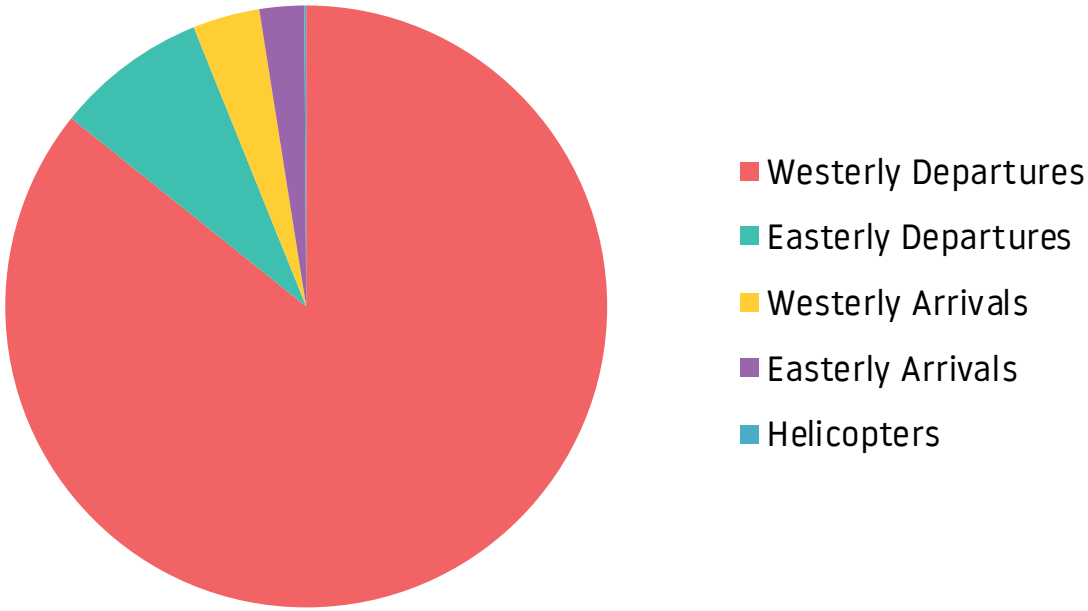


Complaints by aircraft type

Of the 15,384 complaints relating to LLA aircraft operations registered during the year, 11,726 complaints (76%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The table below shows aircraft types generating complaints.

Aircraft Type	No. of Correlated Complaints	% of Correlated Complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per Correlated Complaint
A319	1,274	10.86%	27,930	22
A320	6,147	52.42%	48,261	8
A321	1,645	14.03%	9,869	6
B737-800	975	8.31%	14,218	15
A306 (Cargo)	207	1.77%	896	4
B737-400	186	1.59%	1,202	6
GLF4/GLF5/GLF6	157	1.34%	4,930	31
ATP	15	0.13%	295	20
B757 & B767	120	1.02%	1,377	11
B737-300	74	0.63%	396	5
B737-200	13	0.11%	58	4
Helicopter	8	0.07%	531	66
CL30/CL60	145	1.24%	2,828	20
GLEX/GL5T	179	1.53%	4,095	23
Other Private Aircraft	409	3.49%	17,641	43
Other Cargo Aircraft	41	0.35%	110	3
Other Passenger Aircraft	132	1.13%	881	7

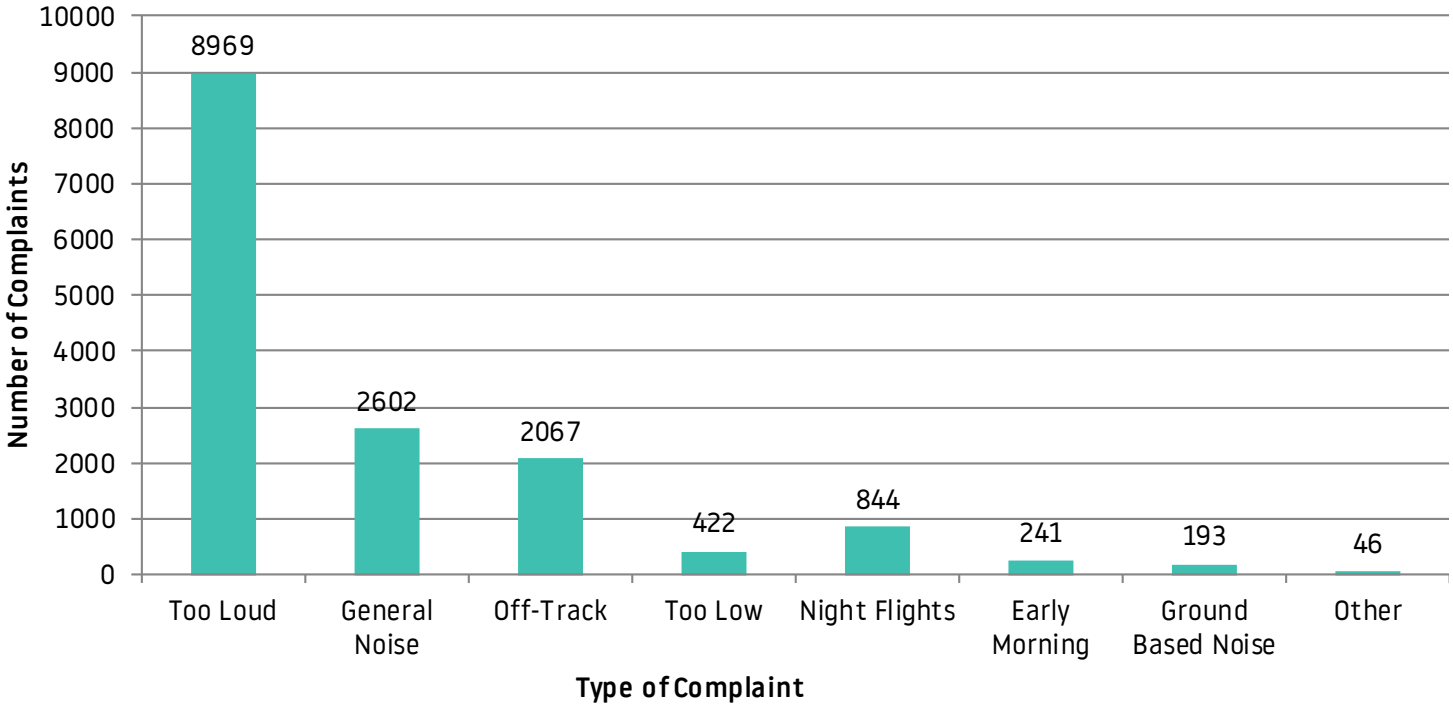
Nature of Disturbance



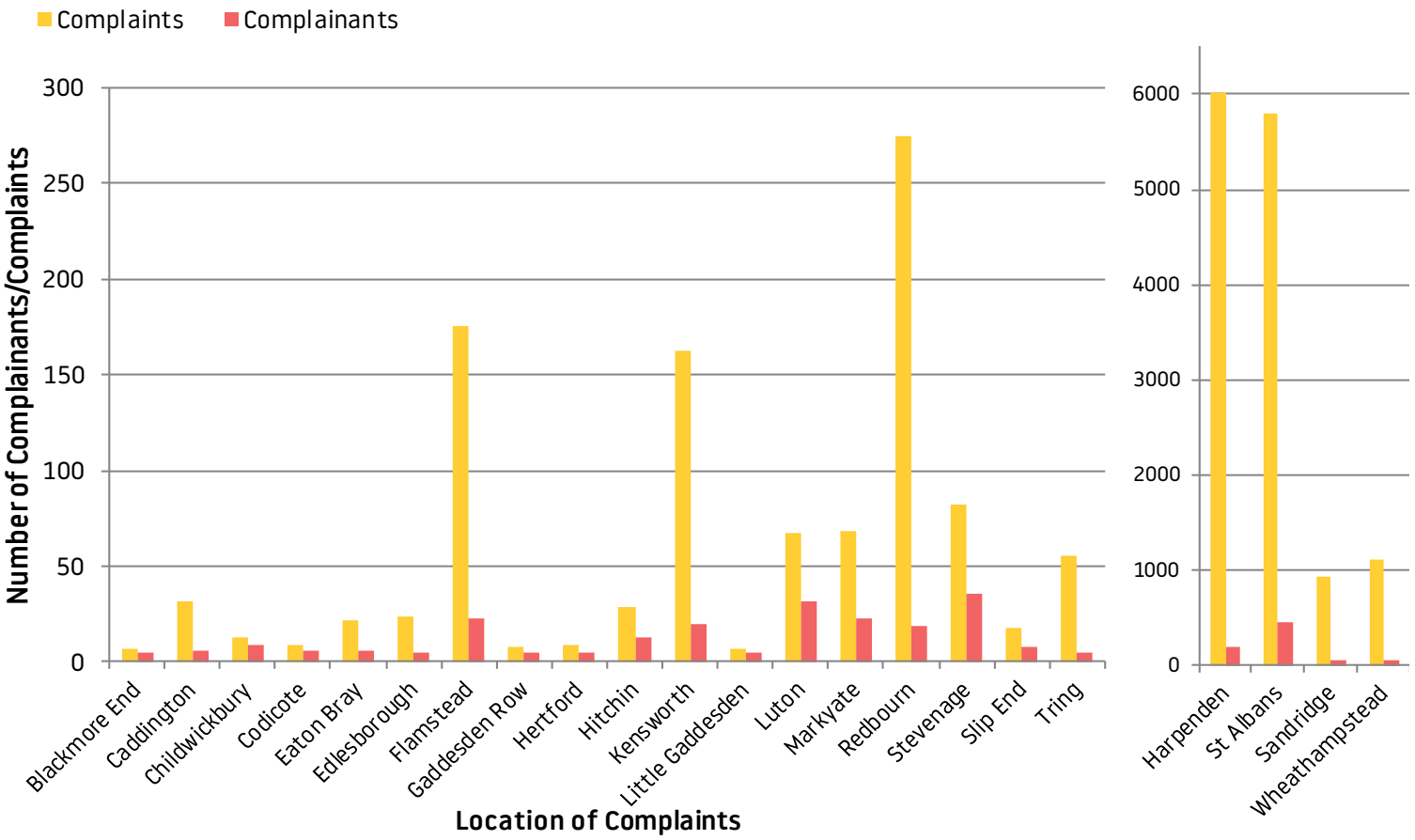
Within the 10,055 specific complaints correlated to aircraft movements concerning westerly departures, 9,924 reported specific aircraft following the Match/ Detling route, 68 related to aircraft on the Compton route and 25 related to aircraft following the Olney heading.

38 other complaints involved positioning flights following off-airways flight routes. Of the 956 complaints specifically attributed to easterly departures 887 related to aircraft following the Compton heading, 12 related to aircraft on Olney flight route and 34 to aircraft on the Match/Detling heading.

A further 23 complaints involved positioning flights following off-airways flight routes. Out of the total 703 complaints correlated to specific arriving aircraft, 422 related aircraft arriving at the airport during westerly operaitons and and 281 complaints related to easterly arrivals.

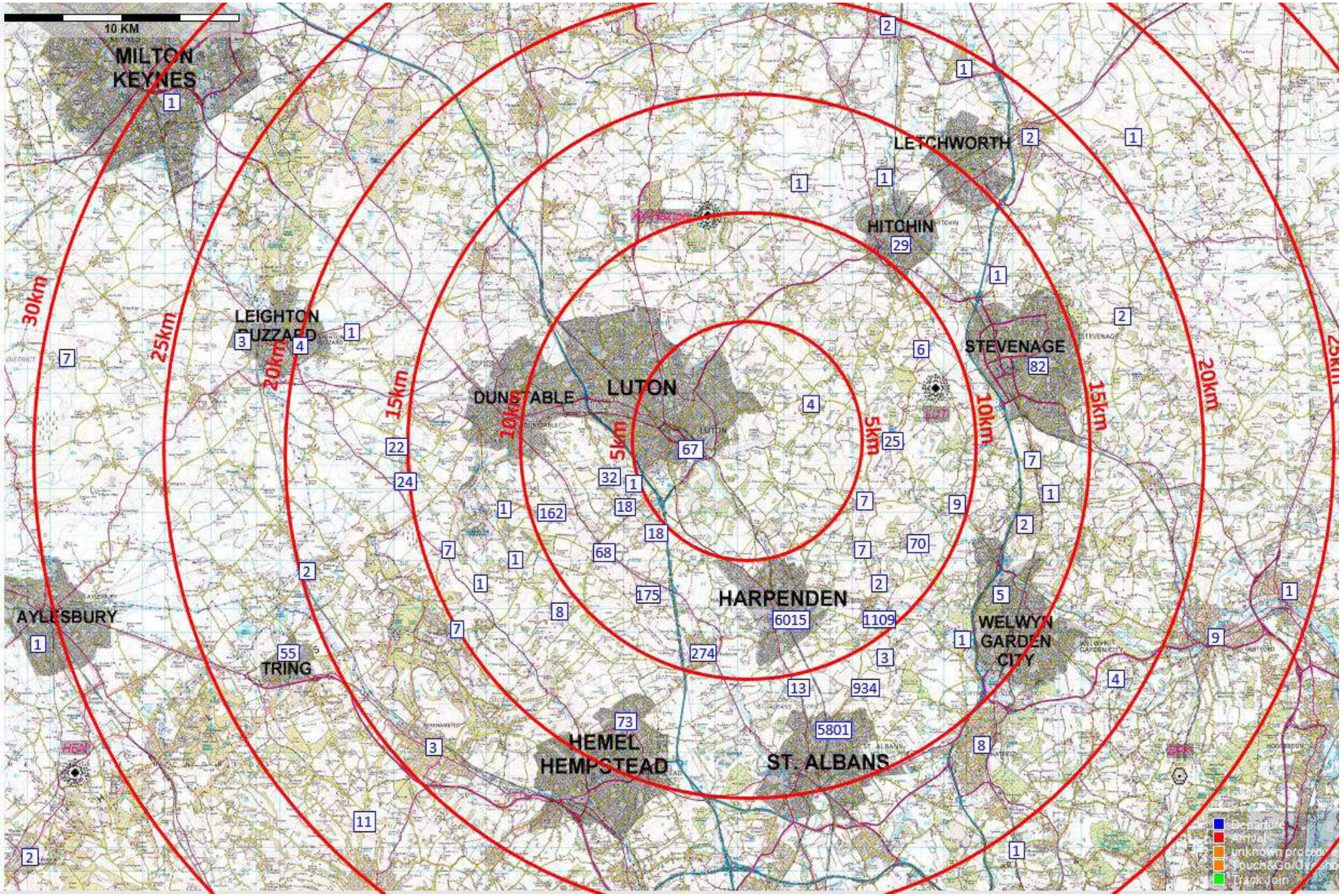


Location of Complainants (5+)



The map on the following page shows the location of complaints compared to distance from airport.

Location of Complaints 2017



Communication method

The following table shows the method of communication used to contact London Luton Airport regarding noise.

Communication Method	% of Total Complaints
TraVis	76%
Email	22%
Telephone	2%
Letter	0%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Flight Operations Team by the following means:

Postal Address **Flight Operations**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY
Direct Telephone **(01582) 395382 (24 hours)**
Direct email **noise@ltn.aero**
TraVis **www.travisltn.topsonic.aero**

Complaints analysis

During 2017 there was an increase in complaints compared to 2016; this is thought to be due to a number of reasons:

• The airport has grown considerably during 2017, in line with the redevelopment plans. This will have caused an increase in the number of movements on all routes.
• A large number of complaints were generated by a small number of people. The 20 most regular complainants in 2017 created 72% of total complaints and almost half of the total complaints came from 5 residents in Harpenden.
• High numbers of complaints were recorded from specific locations, for example Harpenden, Sandridge, St Albans and Wheathampstead. Complaints from these areas accounted for 90% of total complaints. In these areas there is a heightened awareness of aircraft, particularly in relation to the recent growth and RNAV implementation in 2015.
• Complaints recieved last year were submitted to the CAA as part of the Post Implementation Review, and during this time a number of leaflet campaigns were organised encouraging people to complain.
• As winds dictated westerly operations for 79% of the time, the largest percentage of complaints related to aircraft operations during westerlies.

Noise Action Plan

The table below provides an update on the actions in the Noise Action Plan.

	Action	Timescale
1	Operate and maintain a noise and track-keeping system to monitor aircraft operations, reporting statistics quarterly to the LLACC (via NTSC)	Ongoing
2	Produce Lden noise contours annually, based on an annual average 24 hour period and present to LLACC (via NTSC).	Ongoing
3	Undertake regular analysis of aircraft activity and noise to identify where a review of procedures may help minimise disturbance	Ongoing
4	Monitor % compliance of Continuous Descent Approaches (CDA) both day and night, reporting quarterly to the LLACC (via NTSC)	Ongoing
5	Undertake community visits with a portable handheld noise monitoring device, on request.	Ongoing
6	Present quarterly night contours to the LLACC (via NTSC)	Ongoing
7	Investigate, log and respond to all complaints relating to London Luton Airport aircraft activity, reporting in-depth statistics quarterly to the LLACC (via NTSC)	Ongoing
8	Quarterly Monitoring Reports to be available to view on the London Luton Airport website as well as the LLACC website	Ongoing
9	Monitor helicopter operations to/from London Luton Airport to ensure they avoid, where possible, the most densely populated areas	Ongoing
10	Calibrate noise and track-keeping system and INM noise contour model on an annual basis	Ongoing
11	Monitor the track-keeping compliance and follow up with operators, as necessary	Ongoing
12	Monitor the number of marginally compliant Chapter 3 aircraft	Ongoing
13	Monitor and report progress against Noise Action Plan actions to LLACC (via NTSC), providing statistics annually in the Annual Monitoring Report	Ongoing
14	Review the voluntary Night Noise Policy in consultation with the LLACC (via NTSC)	2015
15	Encourage daytime operations through higher landing fees at night	Ongoing
16	Fine any departing aircraft exceeding noise limits, to encourage airlines to operate the quietest aircraft types	Ongoing
17	Discourage residential development close to the airport boundary or areas affected by aircraft noise, in liaison with Local Authorities	Ongoing
18	Divert all noise violation limit penalties from airport operations to support the noise management programme and Community Trust Fund. Penalties will be reported to LLACC via NTSC on a quarterly basis.	Ongoing
19	Liaise regularly with airline operators via a 'Flight Ops' Committee to ensure adherence to existing standard procedures and encourage innovation	Ongoing
20	Review operational procedures in relation to noise with support of the 'Flight Ops' committee and NTSC	Ongoing
21	Work with operators to encourage the voluntary phase out of noisiest aircraft	Ongoing
22	Continue to review procedures for helicopter operations with the support of air traffic control	Ongoing
23	Work with operators on the voluntary phase out of marginally compliant Chapter 3 high aircraft i.e. hushkitted aircraft	2014
24	Explore with the 'Flight Ops' Committee/NTSC penalties for fl ying off track after the introduction of RNAV-1 departure routes	2015
25	Work with airlines, air traffic control, NATS and other stakeholders to introduce new technologies and environmental improvements	Ongoing

	Action	Timescale
26	Review the Engine Ground Running policy to minimise disturbance during the night and late in the evening	Ongoing
27	Operate within planning limits	Ongoing
28	Actively participate and support the work of the industry and Airport Operators Association with respect to its 'Sustainable Aviation' programme	Ongoing
29	Liaise with London Heathrow and other airports with respect to non-London Luton overflying traffic, where necessary	Ongoing
30	Work with the LLACC (via NTSC), the 'Flight Ops' committee and NATS to identify airspace improvements which will improve the noise environment	Ongoing
31	Agree key performance indicators and targets for noise 'actions', where appropriate, with the LLACC (via NTSC)	Ongoing
32	Assess the impact of London Luton Airport traffic on the Chilterns AONB and explore potential for operational improvements	Ongoing
33	Attend public meetings on request, where appropriate, to discuss the airport's operations	Ongoing
34	Provide an information pack to first time complainants and those wishing to relocate into the area	Ongoing
35	Formally engage with air traffic control and airline/other operators to help improve noise management/track keeping	Ongoing
36	Host visits from local residents and MPs to discuss community concerns and to demonstrate the Noise and Track-Keeping system	Ongoing
37	Prepare an Annual Monitoring Report, in conjunction with Luton Borough Council, incorporating detailed statistics on all aspects of the airport's operations including passenger throughput.	Ongoing
38	Provide information in the Annual Monitoring Report on progress made on actions set out in the Noise Action Plan	Ongoing
39	Establish a committee with Environmental Health Officers of Local Authorities (Herts, Beds and Bucks) to discuss the impact of the airport's operations and the Noise Action Plan	Ongoing
40	Continue to offer email, telephone and website as options for complaints and enquiries	Ongoing
41	Invite members of the public to visit LLA to review noise and track information	Ongoing
42	Engage effectively and proactively with the LLACC and NTSC	Ongoing
43	Engage with local planning authorities to ensure they are informed about noise matters	Ongoing
44	Review communication material, the noise information pack and the London Luton Airport website with respect to noise/noise management	2015/2016
45	Hold community surgeries to give local people an opportunity to discuss issues in person with representatives from the Community Relations and Flight Operations Department	Ongoing
46	Improve communication with transient and non-based operators/users to ensure environmental and operational procedures are understood and adhered to	Ongoing
47	Develop and implement a Noise Control Scheme to control the noise of aircraft both during the day (0700 – 2300) and night periods (2300-0700), including a Noise Quota System for the night period (2330 -0600) to include: • Sanctions in relation to operators of aircraft which land or take off in breach of the QC System • Exclusion of aircraft movements with a QC value in excess of QC2 during the night time (2300-0700) • Details of the procedures to be adopted and measures with the purpose of phasing out night time (2300 to 0700) operations by aircraft with a QC value greater than 1 on either departure or arrival.	Ongoing

	Action	Timescale
47	(continued) For the Night Quota Period (2330 – 0600) this shall have the following limits incorporated into the scheme: • Total annual movements by aircraft (per 12 month period) shall be limited to 9,650; • The total annual noise quota in any 12 month period shall be limited to 3,500 which, using all reasonable endeavours, shall be reduced at each review until it reaches a point where it does not exceed 2,800 by 2028. For the Early Morning Shoulder Period (06.00 – 07.00) this shall have the following limit incorporated into the schemes: • Total annual movements by aircraft in any 12 month period shall be limited to 7000. Review the Noise Control Scheme no later than the first and fourth year after introduction, and every subsequent five years.	Ongoing
48	Report actual and forecasted aircraft movements for the preceding and next twelve months every three months to Luton Borough Council.	Ongoing
49	Implement a progressive reduction in the daytime maximum noise violation limit (NVL) in line with the requirements of the planning conditions	2015
50	Develop a strategy to be submitted to Luton Borough Council for their approval which defines the methods to be used by London Luton Airport Operations Ltd (LLAOL) or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.2km2 for the area exposed to >57dB Leq16hr (0700-2300) and above and for night time noise to 31.6 km2 for the area exposed to >48dB Leq8hr (2300-0700) and above.	Ongoing
51	Report forecasted aircraft movements and consequential noise contours (Day, Night and Quota Period) for the forthcoming calendar year annually, which shall utilise the standard 92 day summer contour. Where the area enclosed by the 57-72dB(A) Leq16hr (0700-2300) contour could exceed 19.4 sq km for daytime noise, or the area enclosed by the 48-72dB(A) Leq8hr (2300-0700) contours could exceed 37.2 sq km for night-time noise, an action plan will be put in place to ensure this level isn't breached.	Ongoing
52	Develop a Noise Control Monitoring Scheme and submit to Luton Borough Council for approval, to include: • Details of the fixed noise monitoring terminals and track keeping system (vertical and horizontal) • Details of the complaints handling system • Sanctions to be imposed on infringements by aircraft in respect of noise limits and track keeping • Arrangements for the verification of the submitted information Review the Noise Control Monitoring Scheme no later than the first and forth year after introduction, and every subsequent five years.	Ongoing
53	Develop a Ground Noise Scheme and submit to Luton Borough Council for approval, to include: • Measures to limit the ground running of aircraft propulsion engines between 2300-0700 • Preferential use of stands and taxiways between 2300-0700 • Steps to limit the use of auxiliary power units (including the provision of fixed electrical ground power to stands and or suitably quietened ground power units) • No ground running of aeroplane engines for testing or maintenance purposes between 2300-0700, and designated areas for such testing between 0700-2300. Review the Ground Noise Scheme no later than the first and forth year after introduction, and every subsequent five years.	**Ongoing**
54	Develop a Noise Insulation Scheme for residential as well as non-residential buildings.	2016
55	Reduce the night time noise violation limit to 80 dB(A) by April 2015	2015

Community Relations

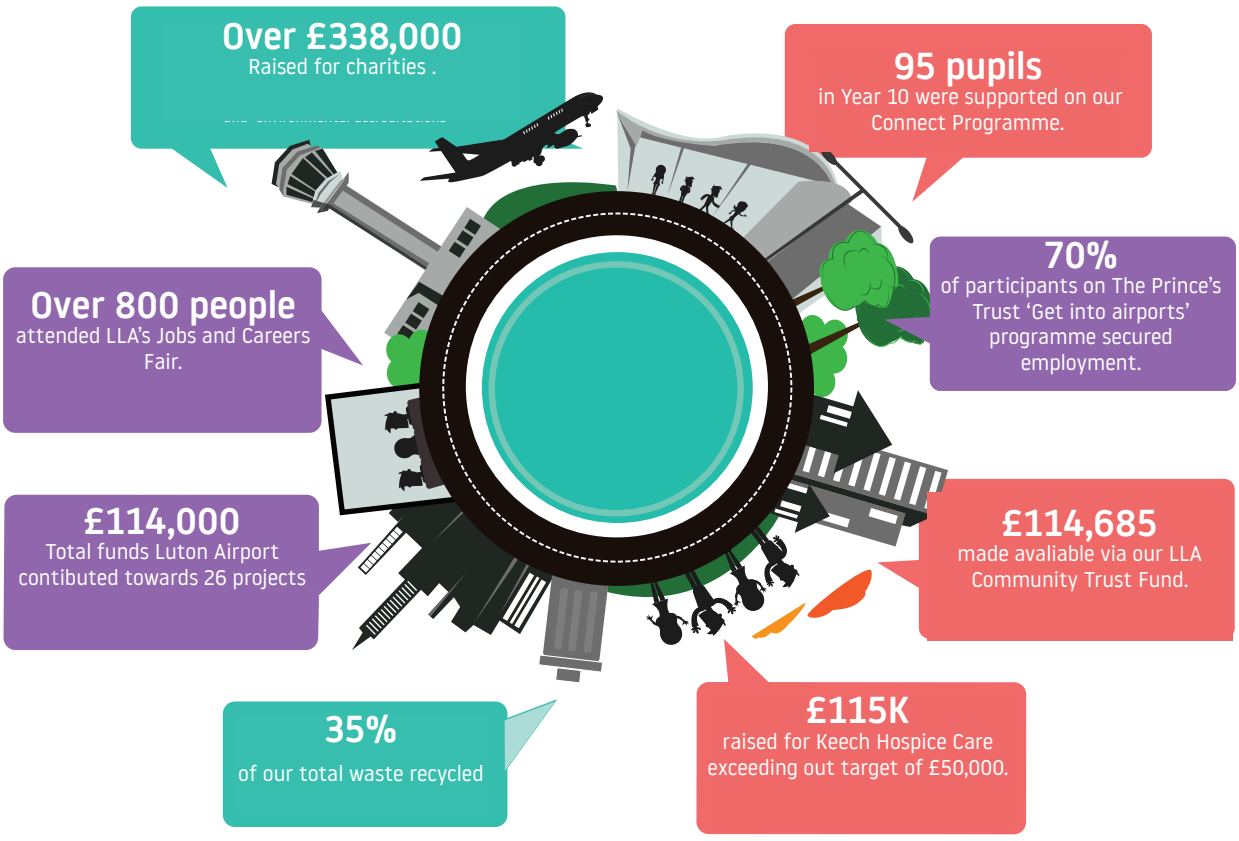
Through the London Luton Airport Consultative Committee (LLACC), which meets every quarter, London Luton Airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the Consultative Committee including meeting minutes and its representatives can be found at the following link: **http://www.llacc.com/**

In 2017, the Flight Operations Team continued the Public Surgery programme. These drop-in events allow local residents to talk to the team face to face to discuss any concerns regarding the impact of LLA's operations. Public Surgeries were held in Eaton Bray, Luton, Leighton Buzzard, Stevenage, Whitwell, Caddington and Baldock, along with an engagement day intended for those communities along the new RNAV Match/Detling route on the 29th June 2017. These will continue to be scheduled in 2018.

The Flight Operations team, also held regular meetings with Ann Main MP, Bim A MP and Stephen McPartland MP. The team also welcomed a visit from Ivinghoe Parish Council to disucss the airports noise and track monitoring system and airport tours. Furthermore, the team regularlay conducted visual and hand held monitoring in the community.

Community engagement strategy achievements

Our five year Community Relations Strategy forms part of LLA's corporate social responsibility programme and sets out how we will facilitate community development and meet the needs of key stakeholders. Initiatives are delivered by the airport in collaboration with key community partners. In 2016 we made ten commitments to ensure that we continued to play a positive role in our local community. We achieved 6 of these commitments, another 2 commitments we exceeded and 2 are still a working progress. The graphic below summarises the progress made towards these commitments during the year or more details can be found in the Community Engagement Annual Report found on our website here.



Employment

Employment at and surrounding London Luton airport contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the airport. Thus, any analysis of the airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the airport boundary has been conducted, the results of which are summarised below.

The methodology used for this year's survey was the same as for the 2016 survey. The Inter Departmental Business Register (IDBR) was used as the main administrative data source - this Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted. (Source: ONS website www.statistics.gov.uk).

An initial list was received from London Luton airport of companies within its boundary. The listing was matched against the IDBR. Companies outside the airport boundary were identified by the street names/areas as follows:

- Spittlesea Road
- Part of Frank Lester Way
- President Way
- Wigmore House
- Part of airport Way
- Barratt Industrial Park
- Airport Executive Park

A handful of Companies who appeared on the list but not the IDBR had imputed estimates from analysis of the size of the enterprise and information from the airport.

Total employment in and around the airport

Employment was measured using main section headings from the Standard Industrial Classification 2007 (SIC 2007). Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	1000
Administrative and Support Service Activities	2,100
Financial and Insurance Activities	<100*
Manufacturing	1,200
Professional, Scientific and Technical Activities	<100*
Public Administration & Defence; Compulsory Social Security	<100*
Real Estate Activities	<100*
Transportation and Storage	5,300
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	400
Grand Total	**10,200**

** - Figures have been suppressed where there are less than three companies in a given Section and/ or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data.*

Due to confidentiality issues Luton Borough Council is bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

The table illustrates that there are an estimated 10,200 employees in and around the airport. This has increased by 900 siunce 2016, a rise of 10%.

Employment by working pattern

The IDBR provides employment figures by full and part time working pattern. The total full time figures (where a breakdown by full/part time was provided) was 8,700 employees. This was an increase of 800 on the previous year's figures. The figure for part time employees was 1,500 which was an increase of 100 from last year's figures.

The percentage split of full/part time employees found at the airport compared to that found in Luton as a whole is as follows:

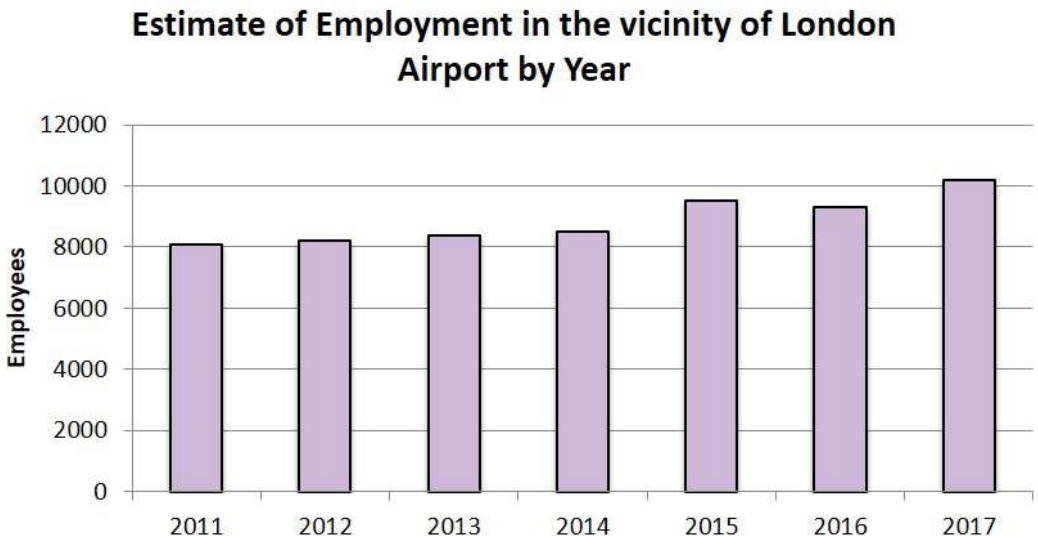
	Full Time Employees	Part Time Employees
Vicinity of LLA	85%	15%
Luton UA	66%	34%

Source for Luton UA Figures: Business Register & Employment Survey 2015, latest data. Figures are percentages of those in employment.

Full and part time working patterns in the vicinity of the airport differs from that found within Luton as a whole, with the airport having a higher proportion of full time workers.

Time series

The following figures from 2011 to 2017 show the estimated employment levels in the vicinity of the airport.



Source: AMR Employment Surveys 2011- 2017

There has been an increase in employment between 2016 and 2017 around Luton Airport. There are approximately 10,200 employees working in the vicinity of the Airport which is at the higher than 2016.

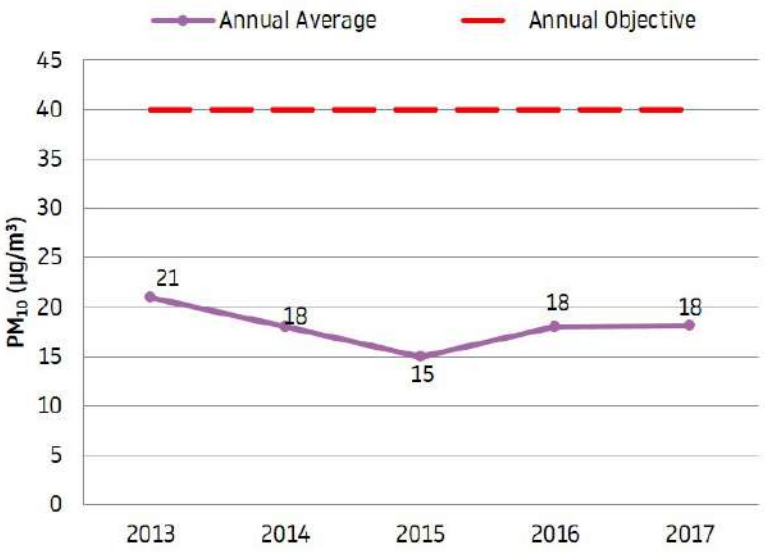
Air Quality

London Luton Airport has been monitoring air quality in and around the airport environment since 2003. Air quality data collected at LLA is integrated into a monitoring programme incorporating data collected by the surrounding Local Authorities, with a monthly report available to view online at http://www.airqualityengland.co.uk The parameters we measure are PM_{10} and NO_2.

PM_{10} (Particulates measuring 10µm or less)

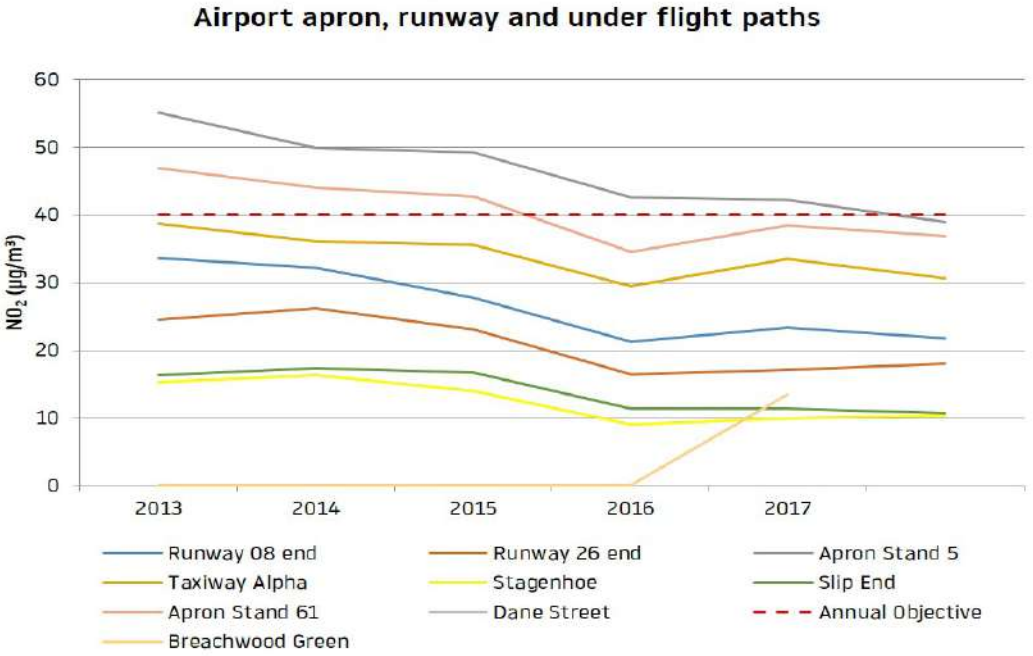
PM_{10} is one of the main contributors to reduced ambient air quality. Particulate matter is made up of fine particles including dust and soot which are suspended in the air. When you breathe in these particles they can stick to the surface of your lungs, and in areas of high pollution can cause respiratory health problems. Local sources include emissions from vehicles and aircraft engines, wear of brakes, tyres, and construction debris.

PM_{10} is monitored from one location in the middle of the airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg/m³.

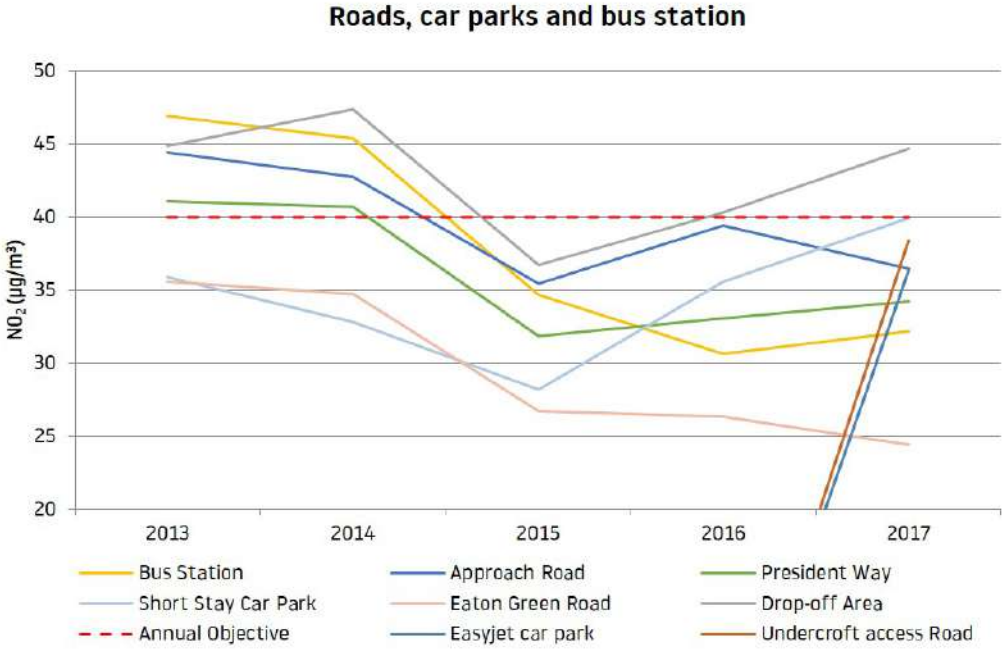


Nitrogen Dioxide (NO_2)

NO_2 in high concentrations can cause a wide variety of health and environmental impacts. The gas is produced from the combustion of fuels such as diesel and aviation fuel. NO_2 is currently measured from 14 locations around LLA, and the results have a bias-adjustment factor applied using national database factors. The annual mean local air quality objective of 40µg/m³ also applies to NO_2.



NO_2 levels at the closest residential receptors to the airport, and also along the aircraft flight paths are significantly below the the objective level laid out in the Air Quality (England) Regulations 2000 (as amended). Levels monitored by the roads around the airport, in the car parks and on the apron are a little higher, with a location on the main apron and the drop off zone slightly exceeding 40 µg/m³. A significant redesign of the roads and car parks on the approach to the terminal has reduced traffic congestion throughout 2017 and this work is ongoing, and a project to install a direct air to rail transit (DART) has commenced which is anticipated to improve connectivity to the airport using public transport. easyJet have also begun modernising their fleet at London Luton Airport, intorudcing the new A320 neo's which are 13-15% more fuel efficient.



Surface Access

LLA aims to improve access to the terminal, particularly by public transport in order to reduce the contribution that journeys make to total airport-related CO2 emissions and also to air pollution. LLA's current airport Surface Access Strategy runs from 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework.

During August 2017 LLAOL undertook a consultation with key stakeholders for the airport surface access strategy covering period up to 2022. The responses all supported the proposed targets and actions with the construction of the DART (Direct Airport to Rail Transit) being noted as particularly welcome addition

Modes of Transport

Passengers transport mode share (CAA Data)

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLA uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table below shows the weighted CAA data for 2011-2016. The CAA statistics suggest that 32% of airport passengers chose to use public transport in 2016.

Whilst the figures have remained fairly static for the last 5 years, LLA have been working to promote the us of sustainable transport. In the Last year, LLA, have been lobbying for 4 fast trains per hour to stop at Luton Airport Parkway as part of the new franchise agreement for the East Midlands line.

LLA have also invested in an upgraded bus station, including installing a traffic light system to improve safety. Electric charging points have also been installed in the multi-storey car park. Finally a new Mass Passenger Transit System is being developed by LLAL to replace the bus service between Luton Airport Parkway and the airport terminal. Construction is due to start in 2018, with the intention for it to be in operation by 2021.

%	2012	2013	2014	2015	2016
Drop Off	27	28	25	27	28
Car Park	23	23	28	27	23
Rail	17	16	14	16	16
Bus/Coach	16	16	15	15	16

Staff transport mode share

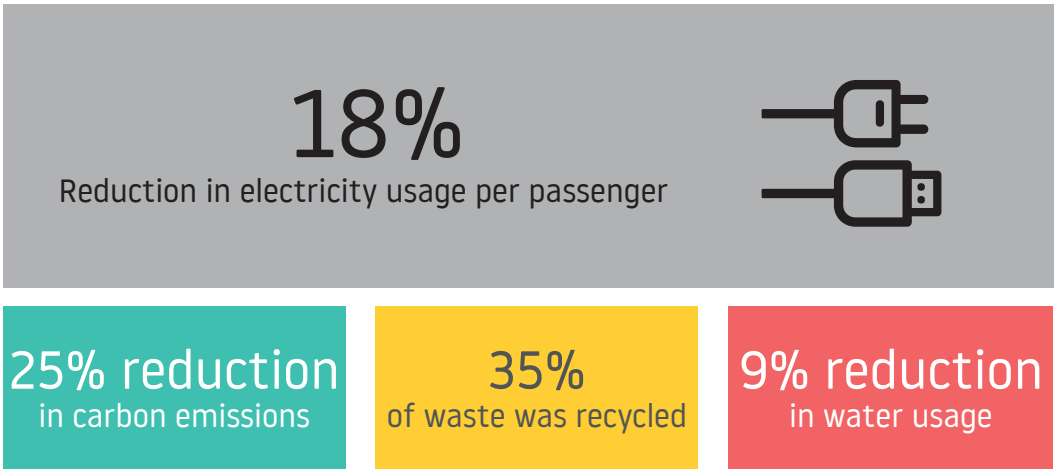
LLA aims to reduce the proportion of staff travelling alone by car to and from Lond Luton Airport. Whilst employee travel does not generate as many trips as passengers, it is an important consideration as employees making a more sustainable travel choice will give daily results due to the frequency of their need to commute to work. Staff travel surveys are underaken once every 2 years and the results since 2010 are presented in the table below.

%	2010	2012	2014	2016
Drive alone	66	66	62	68
Car share	12	8	11	7
Taxi	1	1	0	1
Motorcycle	1	1	1	1
Rail	5	5	10	7
Bus/Coach	7	9	8	9
Cycle	2	2	2	2
Walk	5	6	7	5

Sustainability

London Luton Airport is committed to operating in a way that maximises the socio-economic benefits for the local and regional area whilst minimising the environmental impacts. To ensure this vision is shared and supported, we work closely with airlines, stakeholders and business partners to promote this approach across the airport, ensuring that the full benefits that London Luton Airport can bring to the region are realised.

LLAOL aims to continuously improve on environmental performance in many different areas across the Airport. In 2016 the following was achieved:



The airport maintened the ISO14001 international accreditation for Environmental Management System and the ISO50001 international accreditation for Energy Management.

Sustainable Travel Improvements during 2016

During 2016 a new bus interchange was opened at LLA, providing 7 additional stands and improving safety and access for passengers. Construction works were also undertaken to redevelop the road network, taxi and drop-off facilities at the terminal entrance, and a new multi-storey car park opened providing additional parking near the terminal. Further information on these upgrades can be found under 'Planning and Development'.

Plans for a mass passenger transit system operating between Luton Airport Parkway station and the airport terminal were unveiled during 2016. The MPT system will be a fully-automated, two-way, 24-hour, guided light rail people mover covering a distance of 2.2km. Once complete, the rail link will provide a direct journey between London St Pancras and the airport within 30 minutes. Not only will this encourage passengers to travel by train rather than car, but it will also remove the need for the buses that currently transport passengers between the station and the terminal every 10 minutes. The scheme, being run by London Luton Airport Ltd, is anticipated to be operational by 2021.

Overnight rail services from Luton Airport Parkway began at the end of 2015, making rail a viable transport option for 2-3 million more airport passengers per year, and an uplift in passengers using the trains has been seen during 2016 as a result. LLA have also been lobbying to ensure 4 stops per hour are scheduled at Luton Airport Parkway as part of the refranchising of the East Midlands line due in 2018, providing additional fast services into London.

A staff travel survey was undertaken, along with a report looking into the feasibility of improving coach services to the airport from Northampton. Both reports have been shared with transport operators in order to facilitate transport planning.

Planning and Development

Through its Local Plan, Luton Borough Council (the Council) sets out local planning policies and identifies how land is used, determining what will be built where. The Council also is responsible for the Local Transport Plan (LTP) providing policies, strategies and schemes primarily for Luton, though the LTP does refer to strategic transport and infrastructure and other cross boundary matters for the whole conurbation (Dunstable and the Houghton Regis area).

Local Plan

On 7 November 2017 the Council adopted the Luton Local Plan (2011-2031). The adopted Local Pan is a strategic document setting out the vision, objectives and spatial planning strategy for the whole of Luton Borough Council's area for the period up to 2031.
It comprises the following document and accompanying plans as set out below:

- Luton Local Plan (2011-31), November 2017
- policies map
- town centre inset

These documents can be seen at the following page on the Council's website: https://www.luton.gov.uk/Environment/Planning/Regional%20and%20local%20planning/Pages/Local%20Plan%202011%20-%202031.aspx

The Local Plan includes Policy LLP6 that covers the London Luton Airport strategic allocation (an area of 325 hectares, identified on the policies map, which includes land within the airport boundary, Century Park and Wigmore Valley Park).

Planning Applications

Since the grant of planning permission for the development at the airport in 2014 (Council reference 12/01400/FUL)which enables an increase in passenger numbers up to 18 million passengers per annum (18mppa), much of the development has been completed.

In June 2017 planning permission was granted for a Direct Air Rail Transit (Luton DART) system which will provide a seamless link between Luton Airport Parkway station and the terminal at London Luton Airport. The Luton DART is a £225m investment, which will provide fast, easy access from the mainline trains (serving London and the East Midlands/South Yorkshire), encouraging more people to use public transport and help reduce congestion on the surrounding roads.

The route of the Luton DART crosses New Airport Way into the airport, passing through the mid-term car park and ending in a new station where the current drop-off zone is located. Consequently, there will be a number of changes to those areas, which the airport will undertake, including the provision of a new and improved drop-off zone and a further multi-storey car park.

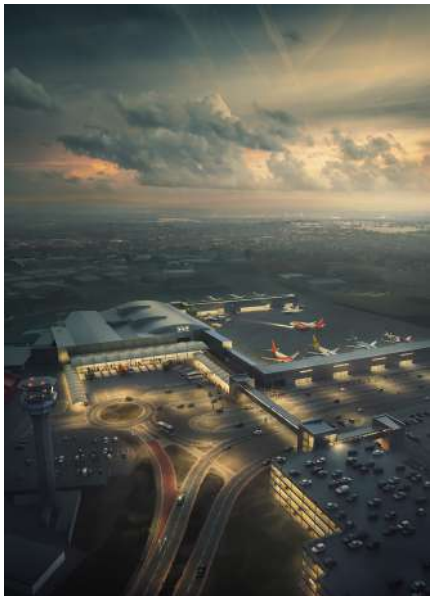
Hotel developments

The Luton hotel market is very much dominated by airport related demand, from passenger and crew, with the Luton Hotel Study (July 2015) indicating that demand was likely to continue to grow.

The following hotel developments have been granted planning permission, or are consideration, since the table in the 2016 AMR was produced -

Site address	Current status of application	Number of bedrooms
Premier Inn (The Brache)	Extension to provide additional 39 bedrooms approved in March 2016	171
Napier Park/Bartlett Square	Outline planning permission was granted in April 2015 for a mixed use development including two hotels (reserved matters still to be submitted).	250
Napier Gateway (part of the Napier Park site)	Mixed development including 209 bedroom hotel (still to be implemented)	209
Former Mondi Packaging car park site, Airport Way	Six storey hotel granted permission in 2013 and nearing completion	120
Former Mondi Packaging site, Airport Way	Nine storey hotel granted permission in July 2016 under construction	250
Power Court (Town Centre)	Outline application for football stadium and associated infrastructure submitted in 2016 including a hotel (still to be determined)	150
Land adjoining junction 10 to junction 10A of M1	Outline application for mixed use development submitted in 2016 including a hotel (still to be determined)	350
Former Honda Garage, Cumberland Stret (Town Centre)	Five to seven storey hotel granted planning permission in September 2017 (still to be implemented)	202
Phoenix House (Town Centre)	Change of use to hotel granted planning permission March 2017 subject to the copmletion of a s106 agreement (still to be implemented)	78

It is envisaged that the demand for hotel accommodation in Luton will grow as the number of passengers travelling through the airport increases.



National Aviation Policy

The Aviation Policy Framework (APF) published by the Coalition Government in March 2013 set out the Government's policy on aviation. The APF focuses on the benefits of aviation to the UK economy as well as its environmental impacts.

The Coalition Government also established the independent Airports Commission to consider issues relating to capacity in the UK over the short, medium and long term periods. The Final Report of the Airports Commission was published in July 2015 concluding that an additional runway at Heathrow was the preferred option, but also considering how to make best use of existing airport infrastructure in the meantime. The Government accepted the Airports Commission's recommendations in December 2015.

In February 2017 the Government began a public consultation on the draft Airports National Policy Statement (Airports NPS), this focused on the preferred option of a third runway at Heathrow. Following revised passenger demand forecasts and the impact of the publication of the final Air Quality Plan for the UK (July 2017) a revised draft Airports NPS was published in October 2017. The Airports NPS will provide the primary basis for decision making in relation to the Development Consent Order (DCO) for a new runway at Heathrow, whilst also being an important and relevant consideration in respect of applications for new runway capacity in London and the south east of England.

The revised draft Airports NPS sets out:
- The Government's policy on the need for new airport capacity in the South East of England;
- The Government's preferred location and scheme to deliver new capacity; and
- Particular considerations relevant to a development consent application to which the Airports NPS relates.

The revised draft Airports NPS includes policies that will be important and relevant for any nationally significant infrastructure project (NSIP) related to airports in the south east of England. In this regard it is important to note that in December 2017 London Luton Airport Limited (LLAL), the owner of the airport, published its 'Vision for Sustainable Growth 2020-2050' which considers the potential for making better use of the existing runway which could include an increase in passenger numbers of up to 36-38mppa. Such an increase would constitute a NSIP and result in the submission of an application for a DCO to be determined by the Secretary of State.

Local Transport Plan (LTP)

The current LTP is the third local transport plan produced by the Council in April 2011, which sets out how the Council will deal with transport matters in and around Luton. It comprises two parts, namely:

• A long term Transport Strategy up to 2026. With regard to the transport affecting the, airport this sets out anticipated passenger numbers of between 15.5mppa and 18mppa by 2026, together with an additional 3,000 employees; and
• The Implementation Plan. This includes a number of key elements that are relevant to the airport, such as: a focus on smarter choices and travel by more sustainable modes; implementation of a new entrance from the north to Luton Airport Parkway Station; and an extension of Airport Way to serve planned employment sites to the east of the airport.

The Luton DART was not specifically mentioned in the LTP, but it will serve to improve access from Luton Airport Parkway Station to the airport as well as encouraging a modal shift away from the use of private cars to public transport.

The LTP strategy also refers to the role of the Airport Surface Access Strategy (ASAS) in promoting sustainable travel to the airport for both passengers and employees, and the Council will work with the airport operator to achieve this.

ANNEX I - AIRPORT ANNUAL MONITORING REPORT 2018

Annual Monitoring Report 2018

Contents

Foreword

Last year was a record-breaking year for London Luton Airport (LLA), with over 16 million passengers passing through the airport, of which residents of the Three Counties continued to be among our most regular users.

To meet this rising demand, our £160 million transformation reached its culmination last year, with our newly-expanded terminal officially opened by the Secretary of State for Transport. This expansion will not only deliver improvements to our passengers but also major benefits for the economy – providing £1.4 billion to the local economy, and £2.3 billion nationally. The development, the biggest in our 81-year history, will also support nearly 38,000 jobs by 2031.

However, we also want to be a good neighbour. We recognise that more passengers means more flights, and therefore more noise. This is a clear area of importance for local residents, and one which we constantly look to tackle head-on, as this report shows.

We've made some great progress, and we continue to have some of the most stringent noise control measures of any UK airport. Recent measures include increasing the number of local noise monitors and improving the way that we communicate with local communities via our dedicated noise website and regular noise surgeries. We have also committed £100,000 per year to insulate local properties, including installing high performance glazing.

The work which our noise team carries out is focussed around 5 different approaches:

1. Operational Procedures
We regularly review our operating procedures to ensure the most environmentally friendly and noise minimising procedures are in place, including airspace changes.

2. Quieter Aircraft
As traffic grows, we are encouraging operators to use the quietest aircraft practicable, particularly during the early morning and night time periods.

3. Operational Restrictions
We have a range of operating restrictions including movement limits and noise quota limits, and we are focussed on ensuring they are adhered to. We're also in the process of requesting temporary changes to our noise contour to ensure we remain fully compliant with existing regulations.

4. Land-use Planning and Mitigation
Through communication with local planning authorities we continue to discourage developments near the airport and spend the full budget for our Noise Insulation Scheme each year.

5. Working with the local community and industry partners
We recognise the importance of working with our stakeholders to understand any concerns and take action where possible, keeping communities up to date.

This Annual Noise Monitoring Report is an example of our ongoing monitoring and communication. We also hope it answers some of the questions you may have about the impact of the airport's transformation.

If you have any other further queries, please don't hesitate to contact the team by calling 01582 395382 or emailing noise.enquiries@ltn.aero.

Neil Thompson
Operations Director
London Luton airport

[redacted]

Key Monitoring Indicators

Parameter		2018	2017
Total Aircraft Movements	↑	136,270	135,518
Day Movements (07:00 - 23:00)	↑	119,937	119,462
Night Movements (23.00 – 07.00)	↑	16,333	16,056
Early Morning Movements (06.00 – 07.00)	↓	5,794	5,962
Total Scheduled Passengers	↑	16,223,039	15,369,715
Total Charter Passengers	↓	358,811	429,504
Total Passengers	↑	16,581,850	15,799,219
Number of Destinations	↑	147	140
Number of New Airlines	-	0	0
Number of New Routes	↑	33	19
Westerly/Easterly Runway Split (%)	-	63/37	79/21
Night Quota Used (3,500 Limit)	↑	3105.75	3,078
Average Ratio of Aircraft movements % (day/night)	-	88/12	89/11
Track Violations	↓	33	63
Departure Noise Infringements (Day)	↓	0	71
Departure Noise Infringements (Night)	↓	0	4
Fines transferred into Community Trust Fund	↓	£29,500	£50,250
24hr Continuous Decent Approach (% achievement)	↓	92%	93%
No. Departures Recorded at ≥ 85 dB(A) during Day (Night)	↓	0 (0)	1 (0)
No. Departures Recorded at ≥ 76 dB(A) during Day (Night)	-	6,604 (1,025)	7,785 (1,283)
No. Departures Recorded at ≥ 70 dB(A) during Day (Night)	-	46,344 (5,663)	46,405 (5,339)
Night Noise Contour Area (48 dB $L_{Aeq, 8h}$)	↑	40.2km^2	38.7km^2
Population within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	18,450	17,800
Dwellings within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	7,800	7,500
Noise Complaints	↓	8,275	15,384
Complainants	↓	691	1,121
Number of New Complainants	↓	394	814
Largest Source of Complaints	-	Deps. West	Deps. West
Number of PM_{10} exceedances	-	0	0

Air Traffic Data

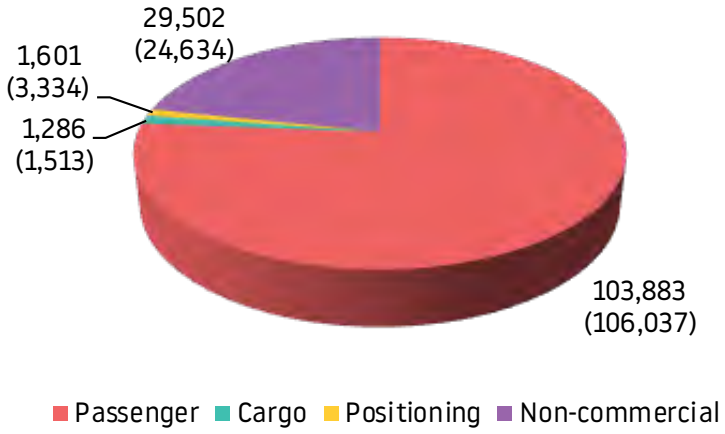
Aircraft movements

LLA handled a total of 136,270 aircraft movements during 2018, an increase of 0.6% compared to 2017. An aircraft movement is the take-off or landing of any aircraft from the airport.

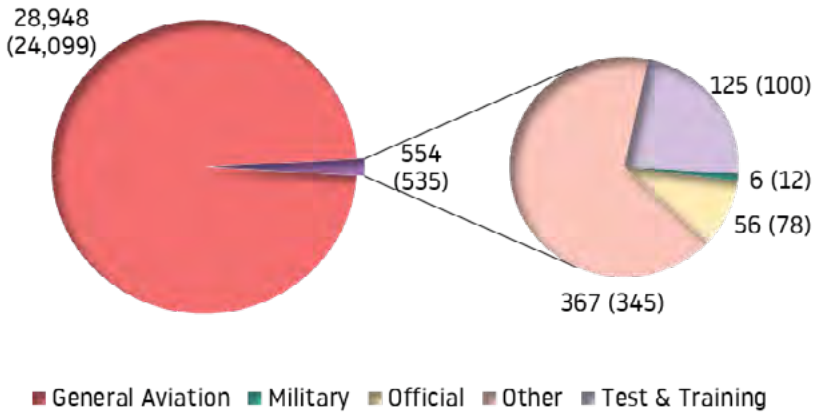
The majority of aircraft movements were passenger flights at 103,881 movements. This includes commercial flights by executive aircraft (compared with 106,037 in 2017). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2017 data is shown in brackets.

Aircraft Movements



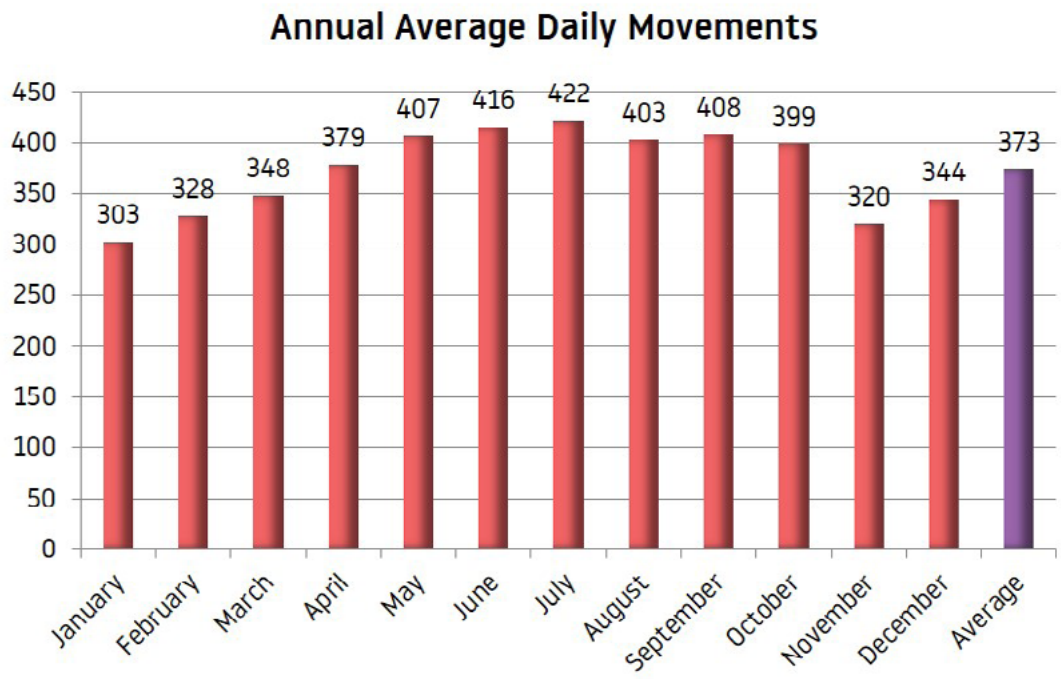
Non-Commercial Aircraft Movements



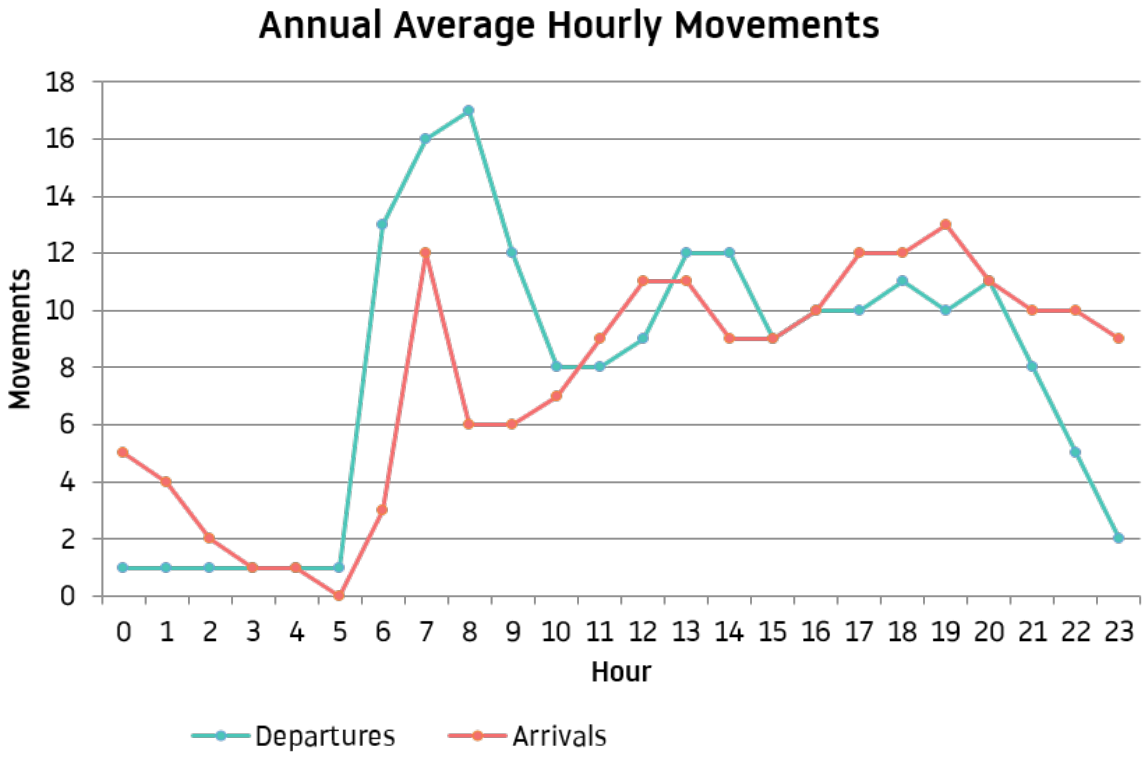
Movement Classification

Commercial – operating for hire or reward and includes cargo, passenger and positioning flights
Non-Commercial – not operating for hire and reward
Cargo – aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories
General Aviation – private aircraft, helicopters and business jets not operating for hire or reward
Passenger – commercial passenger flights, including executive aircraft
Positioning – typically empty flights to/from other airports
Military – flights on military business
Official – flights solely for official purposes by British or foreign civil government departments
Other – flights coming for maintenance and or departing aircraft that have made an unscheduled return to base
Test & Training – training flights involving aircraft and also flights following or during aircraft maintenance

The graph below illustrates that the busiest time of year is May - October. **Our busiest day of the year was 25th May with 475 aircraft movements.** In comparison, winter months are the quietest. On average there were 373 movements per 24 hours (compared to 371 in 2017).



The busiest time on average during 2018 for departing aircraft was 08:00-09:00 hrs, with another peak between 13:00-15:00. The average busiest time for arrivals was 19:00-20:00 hrs.The graph also highlights a low level of average movements during the hours of 00:00-05:00 hrs.



Passenger data

Scheduled	Charter	Total
•**16,223,039** passengers •5.6% increase compared with 2017 •**159** average passengers per flight	•**358,811** passengers •16% decrease compared with 2017 •**182** average passengers per flight	•**16,581,850** passengers •5% increase compared with 2017 •**160** average passengers per flights

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 16,581,850 passengers used LLA during 2018; 16,223,039 on scheduled flights (98%) and 358,811 on charter flights (2%). This represents an increase in passengers of 5% compared with 2017.

Domestic	EU	Non-EU	Total
• **1,188,596** •2.8% increase compared with 2017	• **10,686,996** •2.6% increase compared with 2017	• **4,706,258** •11% increase compared with 2017	• **16,581,850** •5% increase compared with 2017

Cargo

Cargo operations represent just over 1% of all air transport movements at London Luton Airport. Night movements accounted for 69% of total cargo movements. These were primarily postal flights or intra-European express delivery services moving time sensitive and perishable freight such as fresh food, medication and urgently needed technical equipment vital to supporting and sustaining economic growth. The flights carrying more general, less time-sensitive cargo already operate outside of the night-time period. This would include Formula 1 cars, live animals, clothing, machine parts and more.

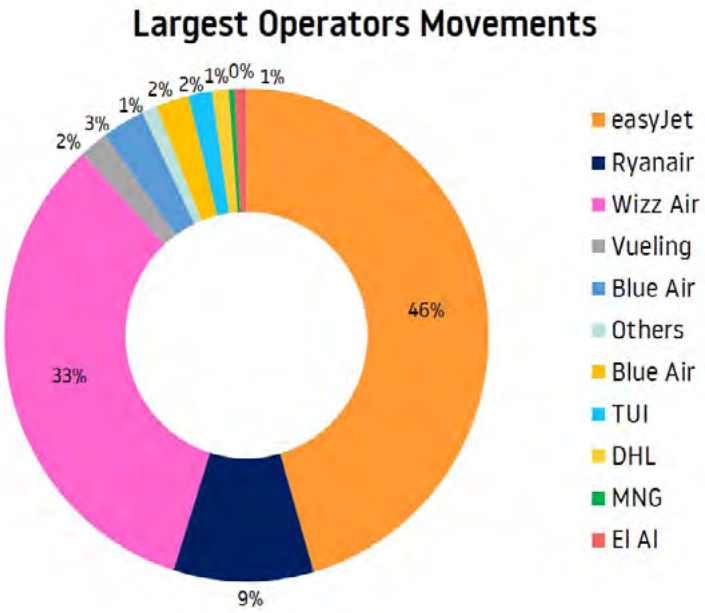
Operator	Movements			Tonnes
	Day Movements	Night Movements	Total	Total
2018	**706**	**1,582**	**2,288**	**27,096**
2017	455	1,442	1,897	22,061
2018/2017 comparison	+55%	+9.7%	+20.6%	+22.8%

N.B. The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because just over 1% of total cargo tonnage was carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in the Aircraft Movements piechart which shows dedicated cargo movements.

Airlines

London Luton Airport works very closely with its airline partners. The table below provides the movement statistics by the largest operators.

Operator	Movements
easyJet	49,088
Wizz	35,886
Ryanair	10,100
Blue Air	3,089
Vueling	2,060
TUI	1,705
DHL	1,205
El Al	867
MNG Airlines	392
Others	1,092
TOTAL	**105,484**



N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.

Movements by aircraft type

Aircraft Type	Movements	% of Total movements
Airbus A319	25,704	18.9%
Airbus A320	47,416	34.8%
Airbus A320 NEO	1,345	1.0%
Airbus A321	13,354	9.9%
Airbus A321 NEO	10	0.0%
Airbus A306	1,096	0.8%
Airbus A330	146	0.1%
Boeing B737-300	424	0.3%
Boeing B737-400	858	0.6%
Boeing B737-500	324	0.2%
Boeing B737-700	114	0.1%
Boeing B737-800	14,042	10.3%
Boeing B737-900	554	0.4%
Boeing B757	1,665	1.2%
Boeing B767	88	0.1%
Boeing B787	48	0.0%
Canadair Global Express GLEX	3,317	2.4%
Cessna Citation Excel C56X	2,252	1.7%
Canadair Challenger CL30	398	0.3%
Canadair Challenger CL60	638	0.5%
Gulfstream 3,4 & 400 series GLF3/GLF4	1,077	0.8%
Gulfstream 5 and 500 series GLF5	1,635	1.2%
Gulfstream 650 GLF6	1,125	0.8%
Embraer Legacy 600	1,067	0.8%
Embraer Phenom 300	794	0.6%
Cessna Citation Jet C525	526	0.4%
Dassault Falcon FA7X	1,090	0.8%
Helicopter	578	0.4%
Other aircraft	14,405	10.6%
TOTAL	**136.270**	100%

The aim of this section is to provide the number of movements for a specific aircraft type. The groups are conditional, assuming that these are the typical aircraft types used for passengers, cargo and general aviation movements. As a result the number quoted here within this section will differ from those within the Aircraft Movements Section.

[1] - Winglets and sharklets are small aerodynamic surfaces mounted almost vertically at the wingtips. There is no difference between winglets and sharklets; the term sharklet is just the name used by Airbus for the winglets fitted to their aircraft.

Destinations

London Luton Airport has seen continuous passenger growth during 2018, making 2018 the busiest year ever in the airport's history.

The map below shows the destinations flown/on sale to and from London Luton in 2018. Our airlines fly to 147 destinations across 42 different countries.

New Routes 2018

Destination	Launch	Airline
Bari, Italy	25-Mar-17	Wizz Air
Bratislava, Slovakia	25-Mar-18	Wizz Air
Palermo, Italy	27-Mar-18	easyJet
Genoa, Italy	27-Mar-18	easyJet
Reus, Spain	27-Mar-18	easyJet
Dalaman, Turkey	28-Mar-18	easyJet
Tirana, Albania	19-Apr-18	Wizz Air
Keflavik, Iceland	29-Apr-18	Wizz Air
Athens, Greece	29-Apr-18	Wizz Air
Dalaman, Turkey	02-May-18	Thomas Cook
Antalya, Turkey	02-May-18	Thomas Cook
Larnaca, Cyprus	21-May-18	Wizz Air
Antalya, Turkey	15-Jun-18	Sun Express
Ankara, Turkey	17-Jun-18	Sun Express
Bodrum, Turkey	18-Jun-18	Sun Express
Gaziantep, Turkey	20-Jun-18	Sun Express
Thessaloniki, Greece	26-Jun-18	easyJet

Destination	Launch	Airline
Tallinn, Estonia	17-Sep-18	Wizz Air
Lviv, Ukraine	18-Sep-18	Wizz Air
Ovda, Israel	28-Oct-18	Wizz Air
Malaga, Spain	28-Oct-18	Ryanair
Cork. Ireland	28-Oct-18	Ryanair
Bologna, Italy	28-Oct-18	Ryanair
Lisbon, Portugal	28-Oct-18	Ryanair
Krakow, Poland	29-Oct-18	easyJet
Alicante, Spain	30-Oct-18	Ryanair
Athens, Greece	02-Nov-18	Ryanair
Kharkiv, Ukraine	13-Nov-18	Wizz Air
Barcelona, Spain	01-Dec-18	Ryanair
Gibraltar, Gibraltar	04-Dec-18	easyJet
Tromso, Norway	14-Dec-18	Wizz Air
Verona, Italy	15-Dec-18	Wizz Air
Grenoble, France	15-Dec-18	Wizz Air

Routes Ending 2018

Whilst there were 33 new routes launched from LLA in 2018, 13 routes ended.

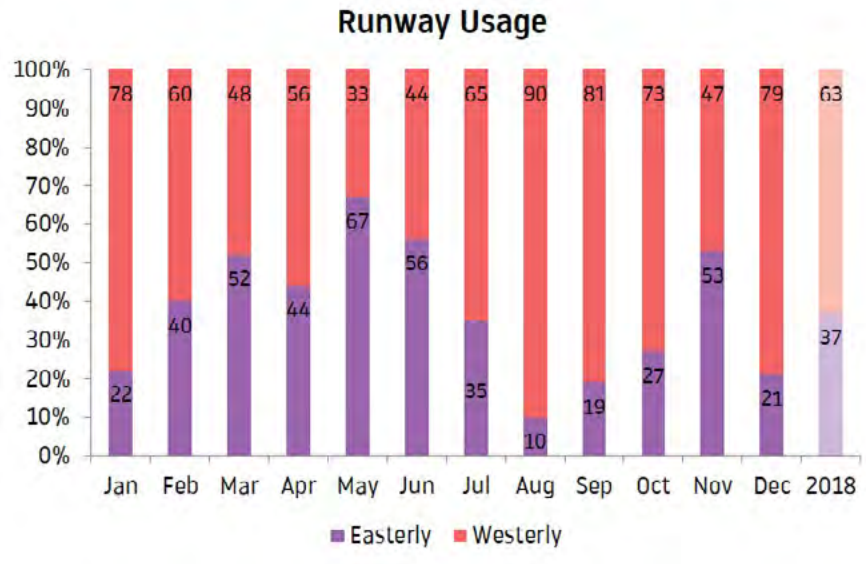
More information about our destinations can be found on the airport's website:
http://www.london-luton.co.uk/inside-lla/destination-map

Runway usage

Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. South westerly and westerly winds prevail for much of the year, typically around 70 per cent of the time.

Wind speeds and directions recorded at higher altitudes can vary considerably from those recorded at ground level. The position of the wind is under constant review by NATS which is why the operation can change direction more than once in a day. However it is also not unusual for the runway to operate in the same direction for several weeks.

A monthly breakdown is shown, highlighting unusually prolonged spells of westerly operations over the summer and increased levels of easterly operations over the winter and spring months of 2018.



Year	Easterly	Westerly
2018	**37%**	**63%**
2017	21%	79%
2016	30%	70%
2015	28%	72%
2014	32%	68%
Average	**30%**	**70%**

The runway split during 2018 was 37% easterly and 63% westerly (compared to 21% / 79% in 2017). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 30% easterly and 70% westerly.

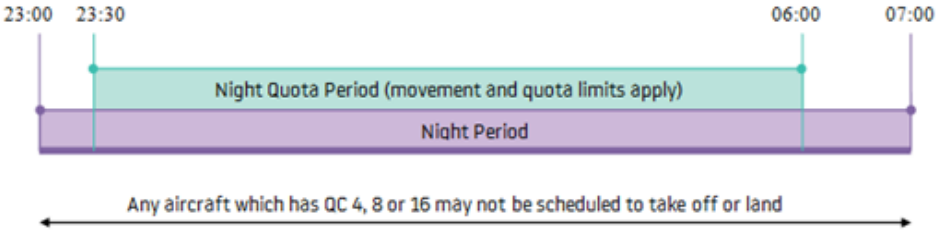
Night Flights

Night Flying Restrictions

As from 1st April 2015 London Luton Airport introduced new night restrictions as part of the planning conditions imposed by Luton Borough Council.

These restrictions have been put in place to limit and mitigate noise disturbance from aircraft operating at night, to prohibit aircraft of certain types from operating, as well as limiting the number of occasions on which aircraft may take off or land.

The night flying restrictions contain a 12 month period aircraft movement limit and a 12 month period quota count limit. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft



The table overleaf records the QC bands identified by the certified noise levels, and gives some typical example aircraft, some of which operate from LLA.

The 'Night Quota Period'
The 'Night Quota Period' is from 23:30 to 06:00 hours local, during which period aircraft movements (take-off or landing) are restricted by a limit on the number of movements with noise quotas as an additional measure.

Aircraft are certificated by the International Civil Aviation Organisation (ICAO) according to the noise they produce during specific certification tests conducted by the manufacturer. They are classified separately for both take off and landing. The points are then allocated to different aircraft types according to how noisy they are.

The 'Early Morning Shoulder Period'
The 'Early Morning Shoulder Period' is 06:00 to 07:00 hours local. During this period aircraft movements (take-off or landing) are restricted by a limit on the number of movements (the same as the Night Quota Period).

Aircraft movement and quota count limits (per 12 month period)

Condition 9(iii) requires that for the Night Quota Period (2330 - 0600) the following limits shall not be exceeded:

- Total annual movements by aircraft per 12 month period shall be limited to 9,650;
- The total annual noise quota in any 12 month period shall be limited to 3,500.

Certificated noise level (EPNdB)	Typical aircraft	Quota Count
96 to 98.9	B732, MD10	QC 4
93 to 95.9	B772, A306, A332	QC 2
90 to 92.9	A320/A321, some B738, B752, B788	QC 1
87 to 89.9	A319/A320, some B734, B738, B788	QC 0.5
84 to 86.9	A319/A320, GLEX, FA7X/F900/F2TH	QC 0.25
Less than 84	Challenger series (eg CL60), ATP, C525/C550 & A320 NEO	QC 0

Condition 9(iv) requires that for the Early Morning Shoulder Period (0600 - 0700) the total annual movements by aircraft in any 12 month period shall be limited to 7,000.

The table below provides total aircraft annual movements and noise quota per 12 month period and compares those against the limits set by planning conditions.

	Night Quota Period (2330 - 0600)		Early Morning Shoulder (0600 - 0700)
	Movements Limited to 9,650	Quota Count Limited to 3,500	Movements Limited to 7,000
Jan 2018	413	172.50	294
Feb 2018	404	149.50	284
Mar 2018	581	218.50	378
Apr 2018	778	262.25	558
May 2018	976	324.25	638
Jun 2018	849	318.00	530
Jul 2018	969	356.50	500
Aug 2018	912	358.00	583
Sep 2018	742	288.50	595
Oct 2018	871	282.50	642
Nov 2018	459	180.25	397
Dec 2018	533	195.00	395
Total for preceding 12 months	**8,487**	**3,105.75**	**5,794**

There were 168 night time aircraft movements with a QC value of greater than 2 in 2018. Of the 168 QC 2 aircraft movements in 2018, 105 were departures by Airbus A300-600 aircraft and 59 departures by an Airbus A330-200 aircraft. There were no night time aircraft movements with a QC value greater than 2 in 2018.

Marginally Compliant Chapter 3 aircraft

Taking the year as a whole, of the 134,702 movements where Chapter 3 categorisation is applicable, none are known to be marginally compliant (i.e. aircraft with a margin of less than 5 decibels compared to Chapter 3 limits). 4 aircraft movements were by aircraft with unkown classification. These movements were by a Tupolev 204-3004.

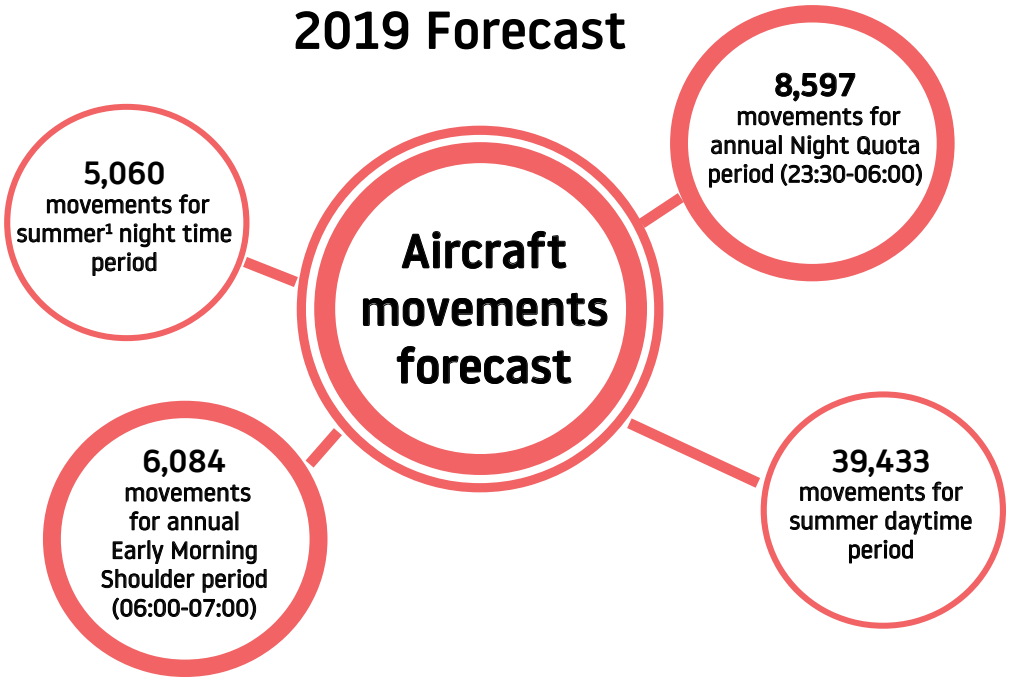
Day/Night ratio of movements

There were 16,333 night movements during 2018 (compared to 16,056 in 2017, a increase of 2%), an average of 45 movements per night (compared to 44 last year). Arriving aircraft accounted for 57% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the airport at night, between 23:00 hrs and midnight. 67% of total night departures took off between 0600 - 0700 in the morning.

The average ratio of total aircraft movements during 2018 was 88% day / 12% night (compared to 89% day / 11% night in 2017).

2018	Day Movements (0700 - 2259)	Night Movements (2300 - 0659)		
	Day Movements	Night Quota Period (2330 - 0559)	Early Morning Shoulder (0600 - 0659)	Total Night Movements (2300 - 0659)
Departures	61,168	1,967	4,679	6,646
Arrivals	58,769	6,520	1,115	7,635
TOTAL	**119,937**	**8,487**	**5,794**	**14,281**

The figure below shows forecast aircraft movements for 2019, separated into daytime and night time periods.



[1] - Summer time covers period from 16th June until 15th September

Departing Aircraft

All propeller-driven aircraft with Maximum Take Off Mass (MTOM) over 5,700kg and all jet aircraft leaving London Luton Airport are required to follow specific departure routes known as Noise Preferential Routes (NPRs). These are established by consultation with the Safety and Airspace Regulatory Group (SARG) at the CAA and the London Luton Airport Consultative Committee, and they are designed to avoid flying over built-up areas wherever possible.

There are four Standard Instrument Departure (SID) routes for each runway – OLNEY, COMPTON, MATCH and DETLING.

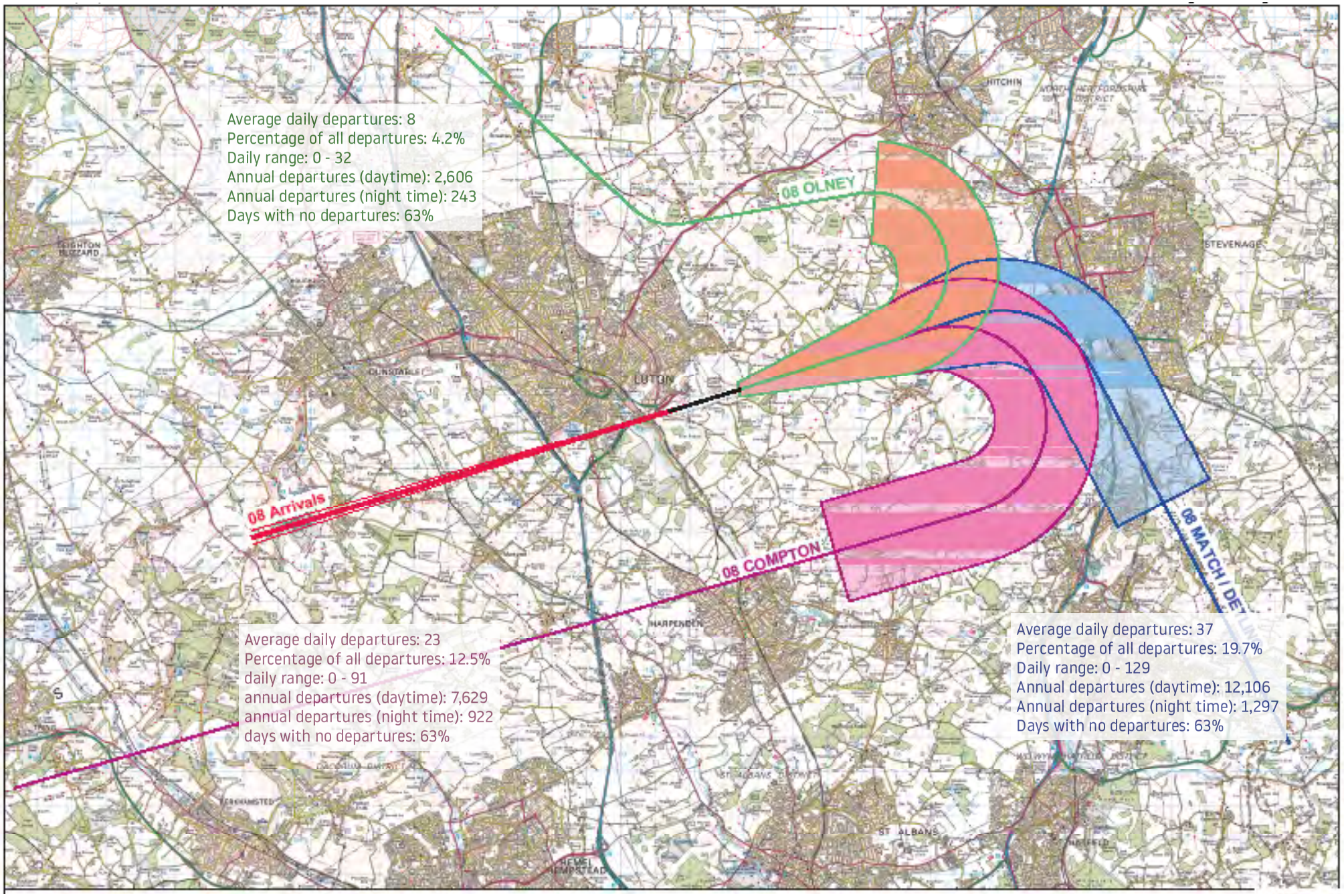
Associated with each NPR is a swathe of airspace extending 1.5km (1km for RNAV) each side of the NPR centre line, within which aircraft concentrate and are considered to be flying on track. Aircraft must follow the NPR controls applicable to the runway in use at that time.

In the UK, the obligations of Noise Preferential Routings for aircraft following conventional SIDs cease when a height of 3,000ft (between 07:00hrs to 23:00hrs local time) and 4,000ft (during night time, 23:00hrs to 07:00hrs local time) has been reached. The obligations of the RNAV NPR ceases when a height of 4,000ft has been reached at all times.

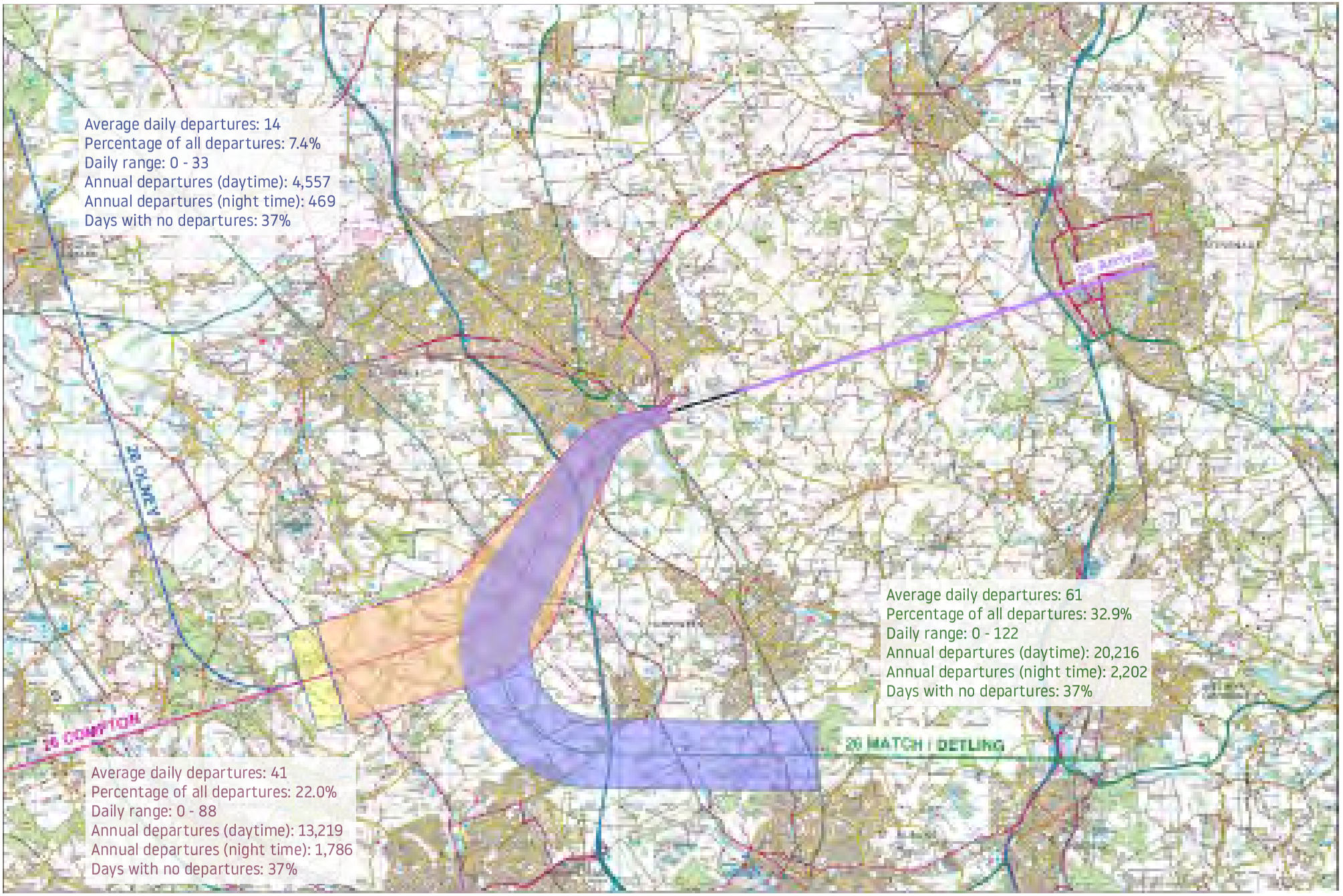
Once aircraft have reached the NPR restricted altitude they will be considered no longer on the Noise Preferential Route. At that stage the aircraft may be directed by Air Traffic Controllers onto a different heading in order to integrate with the overall flow of traffic, this is known as vectoring. However on RNAV Match/Detling SID aircraft should not be vectored before the railway line between St Albans and Harpenden, unless this is required for safe separation from other aircraft or for other safety issues such as avoiding adverse weather.

Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton Airport with detailed information about each departure route.

Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



On Track performance

On the 1st April 2015 London Luton Airport implemented a Track Violation Penalty System as part of the noise related planning conditions. Using the airport's Aircraft Noise and Track Monitoring System, the Flight Operations Team evaluates the radar tracks and investigates them with required input from Air Traffic Control (ATC) and airlines. A departure is deemed to have complied with the Noise Preferential Routing if the portion of flight below the appropriate vectoring altitude is flown wholly within the Lateral Swathe (LS). Where the aircraft is clearly flying outside the LS, the aircraft is identified as causing a "possible" track violation and is subject to a nominal fine. This money is transferred to our Community Trust Fund which awards grants to community projects.

From 1st April 2018, the penalty was increased to £1,000 for a daytime violation (07:00-22:59hrs) and £2,000 for a night time violation (23:00-06:59hrs).

As always, safety is paramount and there may be cases which involve vectoring an aircraft sooner than at the NPR height restriction. If ATC identifies any valid justification that could explain the deviation from the track, then the operator causing it will be exempt from the fine. Valid justifications include:

- Safety or operational reasons, i.e ATC vectoring
- Weather avoidance due to thunderstorm activity (as instructed by ATC)
- Emergencies

The diagram below shows off-track violations by month in 2018. The track keeping performance was 99.8%. This calculation includes deviations for weather, traffic avoidance and those identified as violations.

£29,500 the total of all collected fines transferred to Community Trust Fund

The breakdown of the violations by aircraft type is shown in the tables below.

A/C Type	Total № Violations
B738	8
CL60	4
B734, C500, GL5T	9
GLEX, GLF4, H25B	6
A306, B752, CL35, H25+, LJ35, F2TH	6
TOTAL	**33**

Airspace Change Proposal's

At LLA we are currently working on our next phase of airspace change which involves Performance Based Navigational procedures.

In order to change any piece of airspace, the Civil Aviation Authority (CAA) require all airports to follow a regulatory process which is detailed in the CAA's publication CAP 1616. This document can be downloaded from here.

Furthermore, in line with the CAP 1616 process all documentation surrounding an Airspace Change Proposal will be uploaded to the CAA's dedicated portal which can be accessed at https://airspacechange.caa.co.uk/

Westerly Match departures

In 2018, work continued on the Westerly Match departure route. In January 2018, design principles were submitted to the CAA as part of the Stage 1 gateway in the CAP 1616 process. These design principles had been discussed with the focus group and feedback obtained from stakeholders. LLA passed this gateway to move onto stage 2 of the process.

Stage 2 of the CAP1616 process involves creating potential design options and reviewing these in line with the Statement of Need and design principles. LLA is currently still in this stage and this work will continue into 2019.

Future Airspace Strategy Implementation - South (FASI-S)

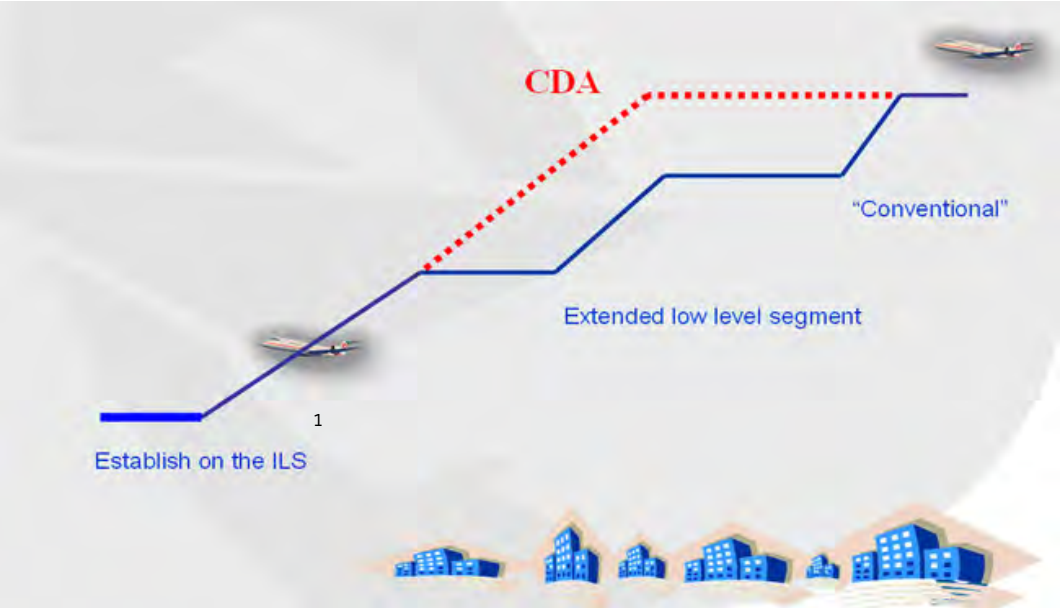
The London airspace is a particularly busy area and requires modernisation. The Department for Transport have notified aviations takeholders via the Upgrading UK airspace: strategic rationale, published in February 2017, that the controlled airspace in southern England used to support commercial air transport operations is capacity constrained, it has evolved over time and does not exploit modern navigation technology.

The Future Airspace Strategy Implementation South (FASI South) programme has been established by NATS and a number of key airports operating in southern England, including London Luton Airport Operations Ltd. to coordinate a series of linked Airspace Change Proposale that will modernise the overall airspace s tructure and route network. In late-2018, work started on the Future Airspace Stategy Implementation South (FASI-S).

We are using this opportunity to look at options of aircraft reaching higher altitudes sooner on departure and remaining higher for longer on arrival enabling significant environmental benefits.

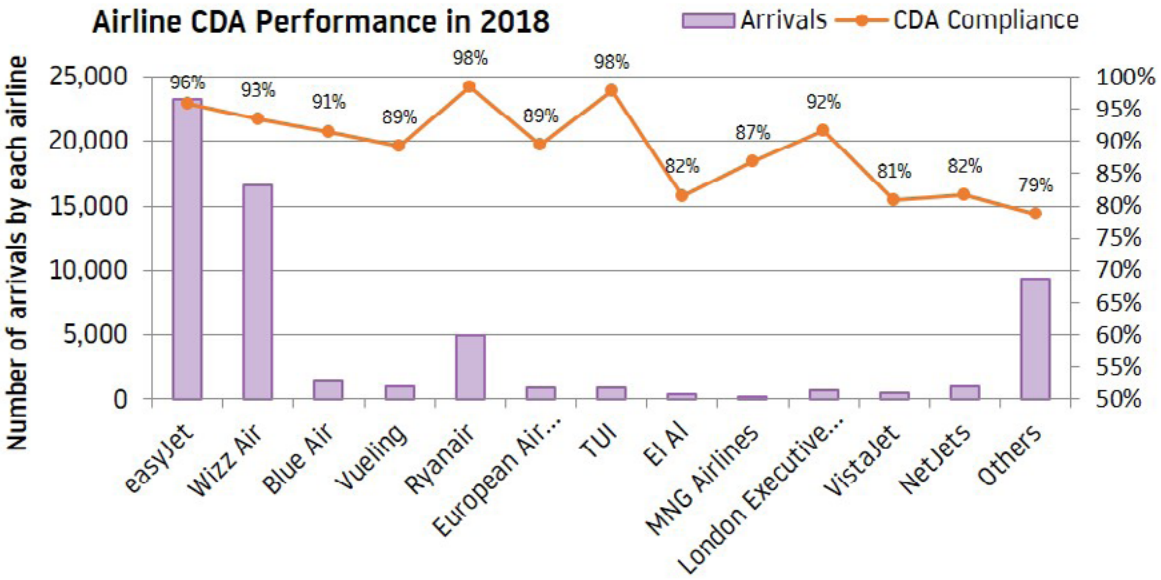
Arriving Aircraft

Although there are no set routes for arriving aircraft there are long established procedures to mitigate the disturbance that can be caused on approach to the airfield. One of the most successful measures is a noise mitigation procedure called Continuous Descent Approach (CDA).



The conventional approach involves descending in steps using engine thrust to level off. In a Continuous Descent Approach, or CDA, an aircraft stays higher for longer and descends at a continuous rate to the runway threshold therefore reducing periods of prolonged level flight at lower altitudes. With CDA less fuel is burnt, less emissions are produced but most importantly it reduces the noise by avoiding the use of engine thrust required for level flight.

The overall CDA achievement was 92% with several major LLA operators achieving higher performance; easyJet, Wizz Air, Ryanair and TUI. The chart compares the level of CDA performance by our main airline operators.



[1] - An Instrument Landing System (ILS) is a ground-based instrument approach aid based on two radio beams which together provide lateral and vertical guidance to an aircraft approaching and landing on a runway.

Delayed Landing Gear Deployment

At LLA we always aim to work constructively with our local community in order to reduce the impacts of noise. LLA recently conducted an aviation leading trial to reduce noise by from arriving aircraft. The trial, conducted during the summer, consisted of aircraft delaying the deployment of landing gear.

As an aircraft makes its final approach most noise is caused by the flow of air over the fuselage as drag is created to slow the aircraft down. Noise was measured along the arrivals flightpath to understand what, if any, reduction which could be achieved. Stevenage, Dagnall and Whipsnade were among those communities who saw the greatest benefit of between 2.7db and 3.4db

Following the successful trial, some operators have already changed their operating procedures to make this standard practice. During 2018, LLA continued to work with operators to encourage delayed landing gear deployment.

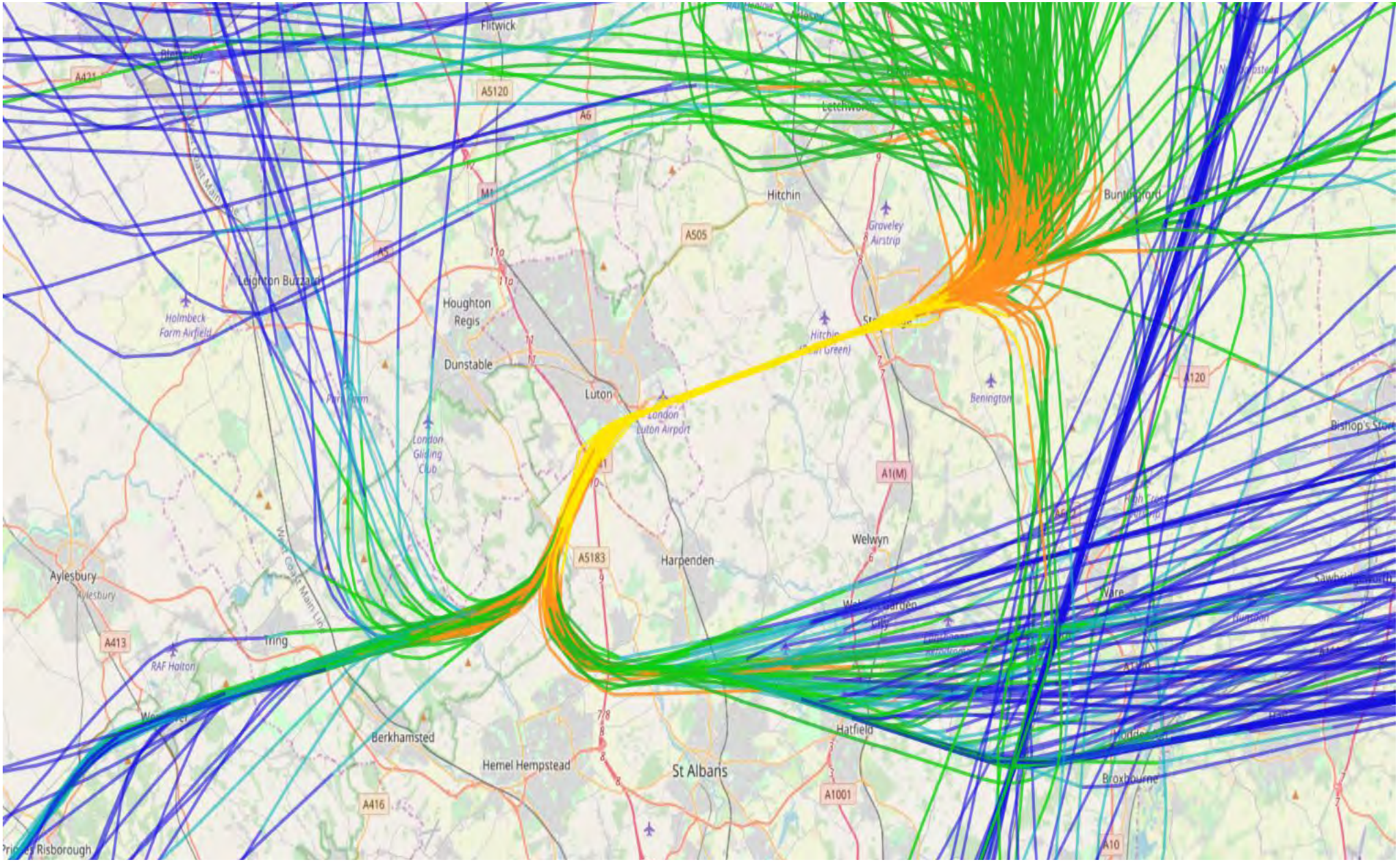
Departure and arrival flight tracks

Maps overleaf display typical 24 hour periods of both westerly and easterly operations. The colour coding from yellow to blue represents different altitude bands up to 10,000ft above mean sea level.

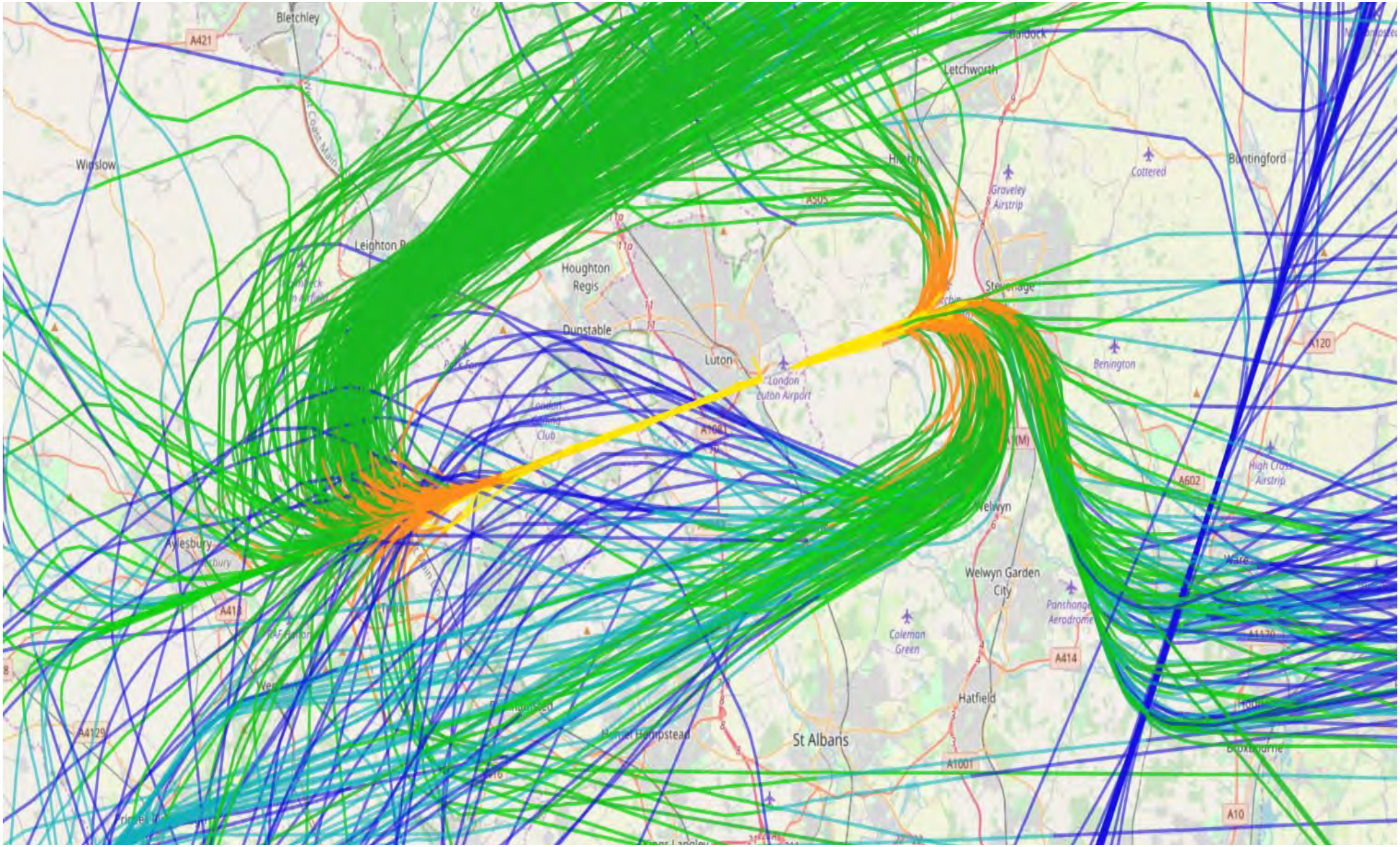
The last two maps display aircraft track density plots for the summer period 16th June - 15th September 2017. A track density plot is a map which displays the pattern of aircraft flight track passing over the region around the airport during a specific period. The system analyses the number of flights passing over each grid element of an array. The colour coding from purple to red represents the range 1 to over 147 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element was less than 1 flight. The red areas represent locations where operations are more densely concentrated.

It should be noted that London Luton Airport's aircraft movements integrate with a traffic network travelling to and from other airports in the region, and the South East is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton Airport and overflights from other airports have been omitted for clarity.

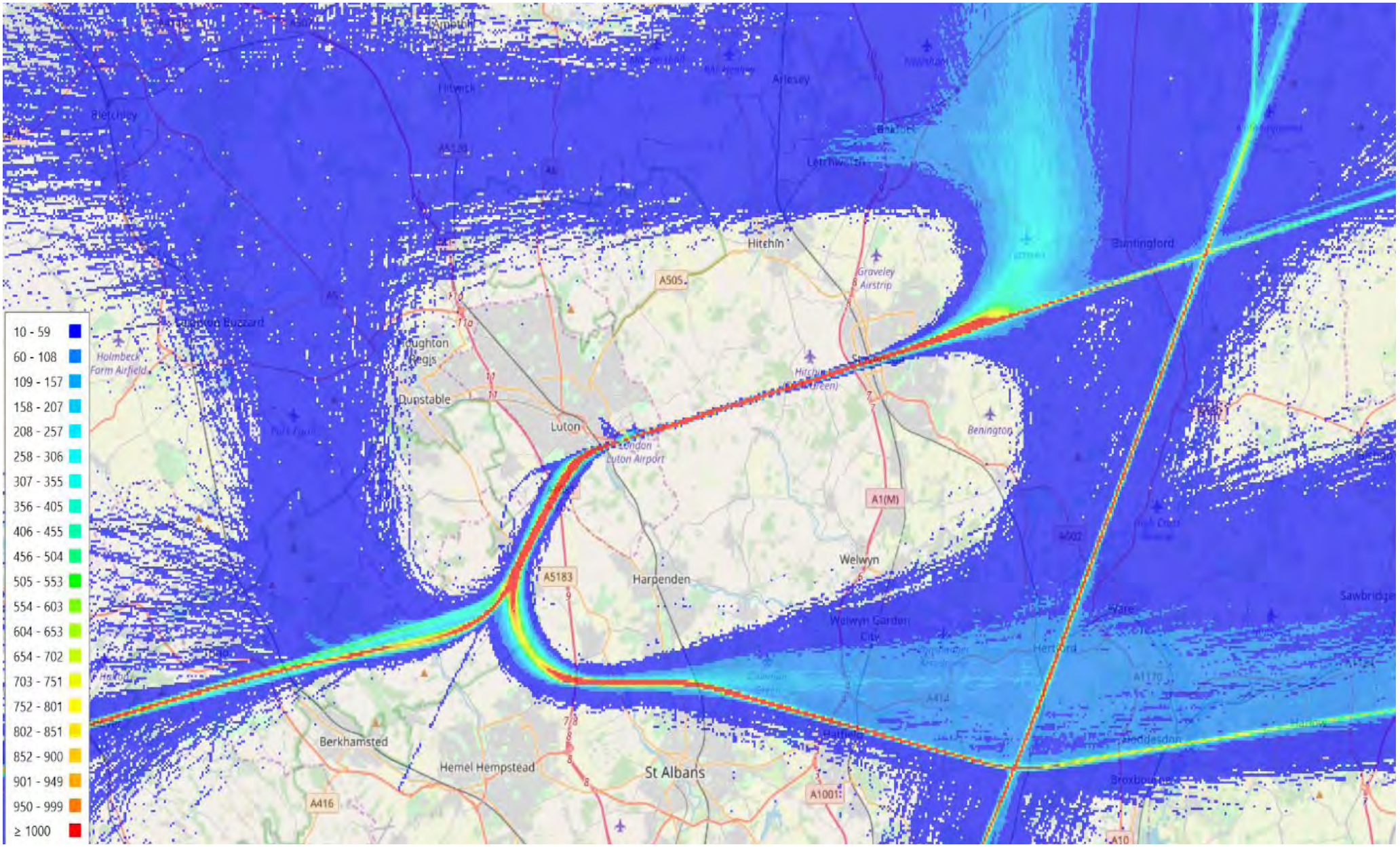
Westerly (26) Flight Routes (24 hour period)



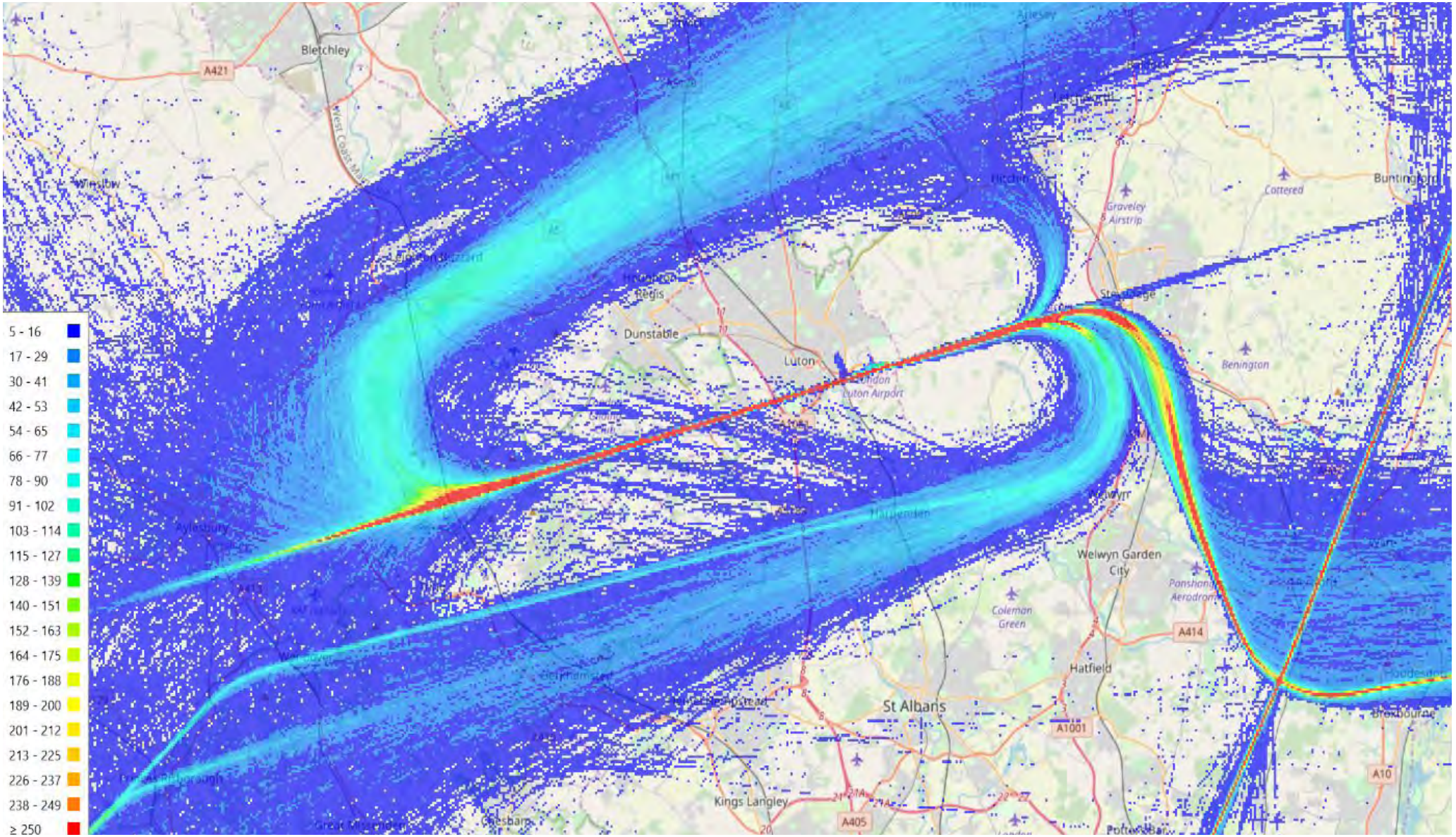
Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2018 - Westerly (26)



Plot Density - 16th June - 15th September 2018 - Easterly (08)



Aircraft Noise

Noise is generally defined as unwanted sound. Although it is recognised that noise perception is very subjective, there are a number of internationally recognised terms to describe and measure aircraft noise. Most airport related noise is created by aircraft approaching, taking-off and taxiing to and from the runway. The management and control of noise continues to be a major element of the airport's policy to constantly seek to minimise and mitigate our environmental impact.

How is noise monitored?

People who live close to airports or under flight paths can often feel strongly about the disturbance to their lives from noise. Effects of noise include general distraction, speech interference and sleep disturbance which can lead to annoyance and complaints.

At LLA we monitor noise and track keeping with a specialised system that is designed to monitor air traffic within a radius around the airport (set at around 25 miles), and generally up to an altitude of 12,000ft. It downloads noise data from three fixed noise monitors located 6.5km from the aircraft start of roll, at either end of the runway within the neighbouring communities. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area. New features and system enhancements continue to improve the functionality and capabilities available to the Flight Operations Department.

In 2018, the Flight Operations team purchased an additional three new mobile noise monitors, meaning LLA now has 7 portable noise monitors and 3 fixed noise monitors. This has allowed the team to expand the noise monitoring programme even further. During 2018, noise was monitored in Breachwood Green, Caddington, Childwickbury, Dagnall, Edlesborough, Flamstead, Knebworth, Markyate, Pepperstock, Redbournbury, Sandridge and Stevenage. Details of the latest Community Noise Reports can be found here.

Noise violation levels

The following table identifies daytime and night-time noise levels correlated to departing aircraft at the fixed noise monitoring terminals.

In order for a noise event to be correlated to an aircraft it should reach a detection threshold. The noise monitoring terminals are set at the lowest level to record the maximum number of aircraft noise events. However, a number of smaller aircraft types, such as business jets and propeller aircraft, get very close to but do not reach the detection threshold. Ambient background noise is also an important factor as specific incidents such as loud road traffic, emergency vehicle sirens, lawn mowers, drills etc. can register noise levels louder than an aircraft overhead, which results in not all aircraft movements being correlated to noise events. Generally, the louder noise events have more certainty of being correlated with aircraft movements.

Weather conditions can also effect the number of noise monitoring events recorded in the table; for example, if winds are greater than 10m/s and temperature is either higher than 25°C or below -10°C, results from noise monitors will be invalid and therefore will not be correlated.

	dB (A)	Daytime	NightTime	Total
Number of Correlated Events	<70	5,735	621	6,356
	70	1,838	225	2,063
	71	3,301	356	3,657
	72	6,083	719	6,802
	73	9,866	1,202	11,071
	74	11,027	1,238	12,265
	75	7,625	895	8,520
	76	3,661	475	4,136
	77	1,600	297	1,897
	78	768	157	925
	79	352	72	424
	80	147	24	171
	81	49	0	49
	82	27	0	27
	83	0	0	0
	84	0	0	0
	85	0	0	0
	86	0	0	0
	87	0	0	0
	88	0	0	0
	89	0	0	0
	90	0	0	0

During the daytime 99% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 87% registering below 76dB(A). Throughout the year 575 correlated daytime departures (1.1%) registered maximum noise levels at 79dB(A) or above.

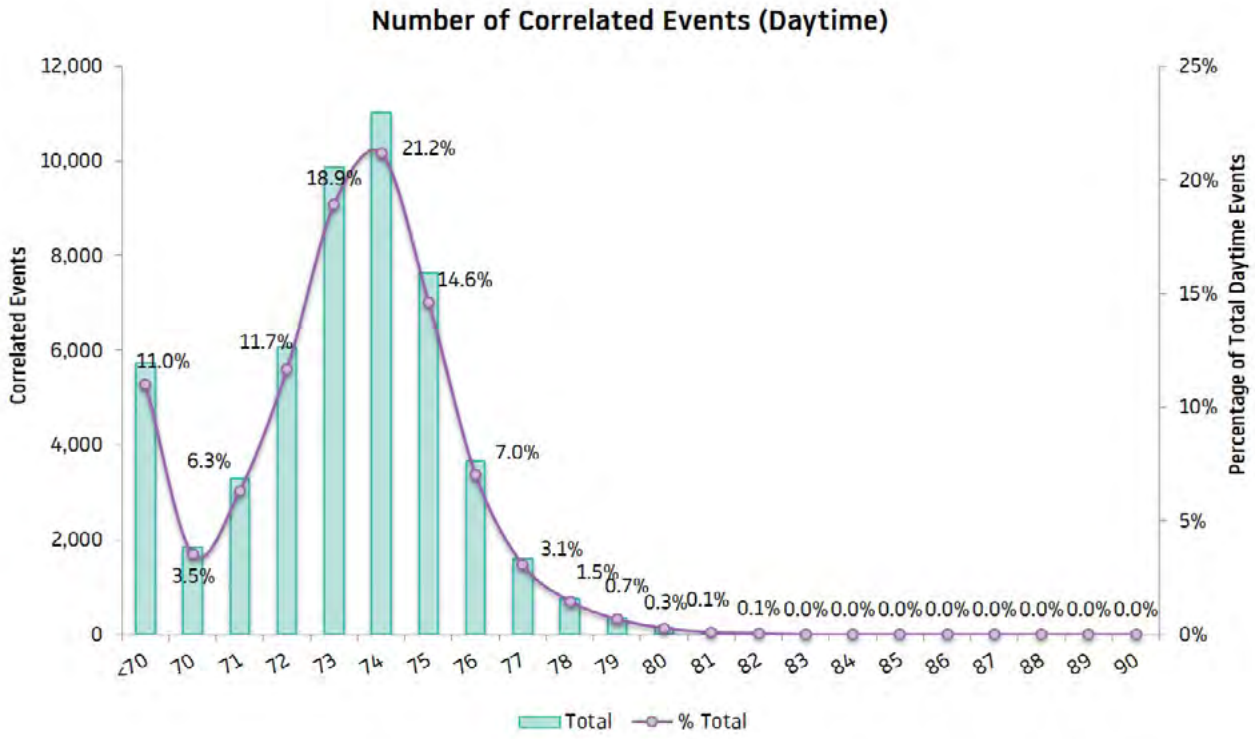
There were no correlated departing aircraft in the daytime which recorded a maximum noise level greater than 82dB.

During the night 98% of correlated departures recorded maximum noise levels below 79dB(A), with 84% below 76dB(A). During the year 96 correlated night departures (1.5%) registered maximum noise levels at or above 79dB(A).

There were no correlated departing aircraft in the night time which recorded a maximum noise level greater than 80dB.

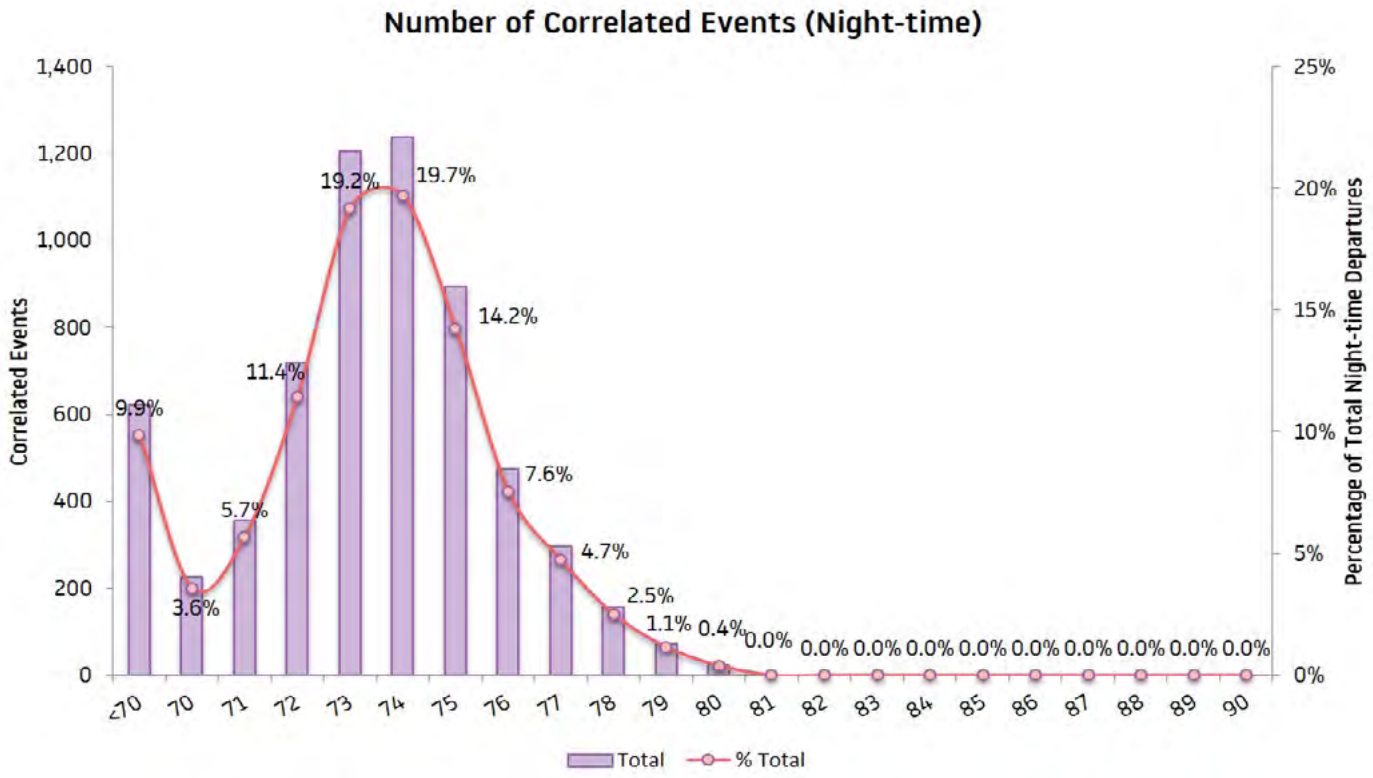
Daytime Noise

The following graph shows the number of correlated events during the daytime period (07:00hrs - 22:59hrs) compared to the total percentage of correlated events during the daytime.



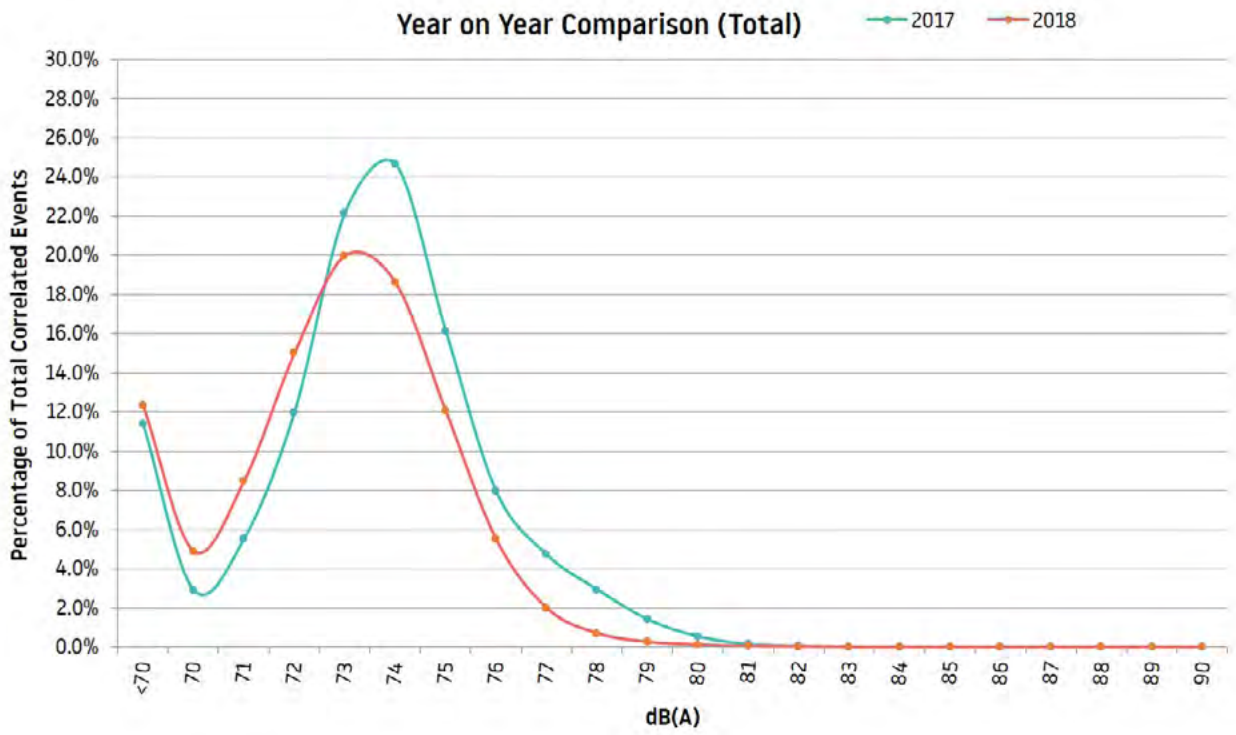
Night-time Noise

The following graph shows the number of correlated events during the night-time period (23:00hrs - 06:59hrs) compared to the total percentage of correlated events during the night-time.



Annual Comparison

The graph below shows the year on year comparison of the correlated departure noise events.



Noise violations during 2018

There were no daytime or night time noise violations during 2018. Although, from 1st April 2018 the fine was increased to £1,000 for a daytime noise violation and £2,000 for a night time noise violation. Noise Violation fines are passed to the London Luton airport Community Trust Fund, further details of which can be found at: https://www.london-luton.co.uk/corporate/community/noise/supporting-lla's-community-trust-fund

Noise Insulation Scheme

Our Noise Insultation Scheme is just one element of our noise management plan to reduce the impact of noise on those properties in Hertfordshire and Bedfordshire closest to the airport. The scheme covers both residential and non-residential properties. Depending on any existing insulation in the property, double glazing, secondary glazing and ventilation units can be provided. Rooms eligible for insulation include living rooms, dining rooms, kitchen-diners and bedrooms.

During 2018, works were carried out in properties located in Bedfordshire and Hertfordshire, 117 properties were contacted and 31 properties accepted the insulation.

Noise Contours

Since 1989 the preferred measure of aircraft noise, recognised by UK Government, has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700-2300 for an average day between the 16th June and 15th September.

When planning permission was given in 2014 for development at London Luton Airport a number of conditions were imposed. Condition 12 requires that daytime and night-time contours are produced on an annual basis for the previous summer period based on actual aircraft movement data and for the following summer period based on predicted aircraft movement data. The areas of these contours are to be compared to the area limits contained in Condition 12. Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the airport and also the departure routes flown. Changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, determined by the prevailing wind direction.

Annual noise contours summer 2018

The table below shows the annual noise contours for summer 2018 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM software (the Integrated Noise Model) version 7.0d which is the method used by many other airports in the UK.

$L_{Aeq, 16\ hour}$ Daytime	Contour Area (km²)					
	1984	1999	2017	2018	Difference 2017-2018	2019 (forecast)
>72	1.63	1.5	1.0	1.0	0.0	1.0
>69	2.80	2.5	1.7	1.7	0.0	1.7
>66	4.86	4.4	3.0	3.1	+0.1	3.0
>63	9.10	7.3	5.9	6.1	+0.2	5.9
>60	17.18	11.8	10.3	10.6	+0.3	10.2
>57	**31.52**	**19.6**	**19.0**	**19.4**	**+0.4**	**18.8**

Considering the 57 dB LAeq, 16h summer daytime 2017 noise contour there is a slight increase in area of approximately 2% when comparing the 2018 contour with the 2017 contour. This is attributed to the slight overall increase in daytime movements.

A comparison of 2017, 2018 and 2019 forecast daytime contours is shown. This shows that the 2016, 2017 and 2018 forecast contours are all very similar, with the slight differences in shape being primarily due to differences in modal split.

$L_{Aeq, 8\ hour}$ Night-time	1984	1999	2017	2018	Difference 2017-2018	2019 (forecast)
>72	0.79	1.1	0.4	0.5	+0.1	0.4
>69	1.39	1.8	0.7	0.7	0.0	0.7
>66	2.42	3.0	1.0	1.1	+0.1	1.2
>63	4.01	5.2	1.8	1.9	+0.1	2.1
>60	7.06	8.3	3.4	3.7	+0.3	4.2
>57	13.05	13.2	6.3	6.8	+0.5	7.6
>54	24.48	21.6	12.2	12.6	+0.4	14.1
>51	44.92	36.0	22.3	23.0	+0.7	25.4
>48	**85.04**	**60.6**	**38.7**	**40.2**	**+1.5**	**42.7**

Considering the 48 dB LAeq, 8h night time noise contour there is an increase in area of approximately 4% when comparing the 2018 contour with the 2017 contour. This is due to the increase in movements by passenger turbofan aircraft.

The 48 dB LAeq,8h 2019 contour is forecast to grow by 6% compared to the 2018 contour. This is largely due to the forecast 7% increase in night-time movements by unmodernised passenger turbofan aircraft.

A comparison of 2017, 2018 and 2019 forecast night-time 48 dB LAeq,8h contours is shown. This shows that the 2018 contour is larger than the 2017 contour at the western end near Caddington, but is smaller at the eastern end over Stevenage and to the south of Markyate. This is due to the changes in modal split.

The 2019 forecast contour is longer than the 2018 contour at the eastern end, but shorter at the western end and slightly wider at the south-western end. These slight changes in shape are due to the relatively higher proportion of easterly operations that occurred in 2018 compared to the long term average.

Contour population counts

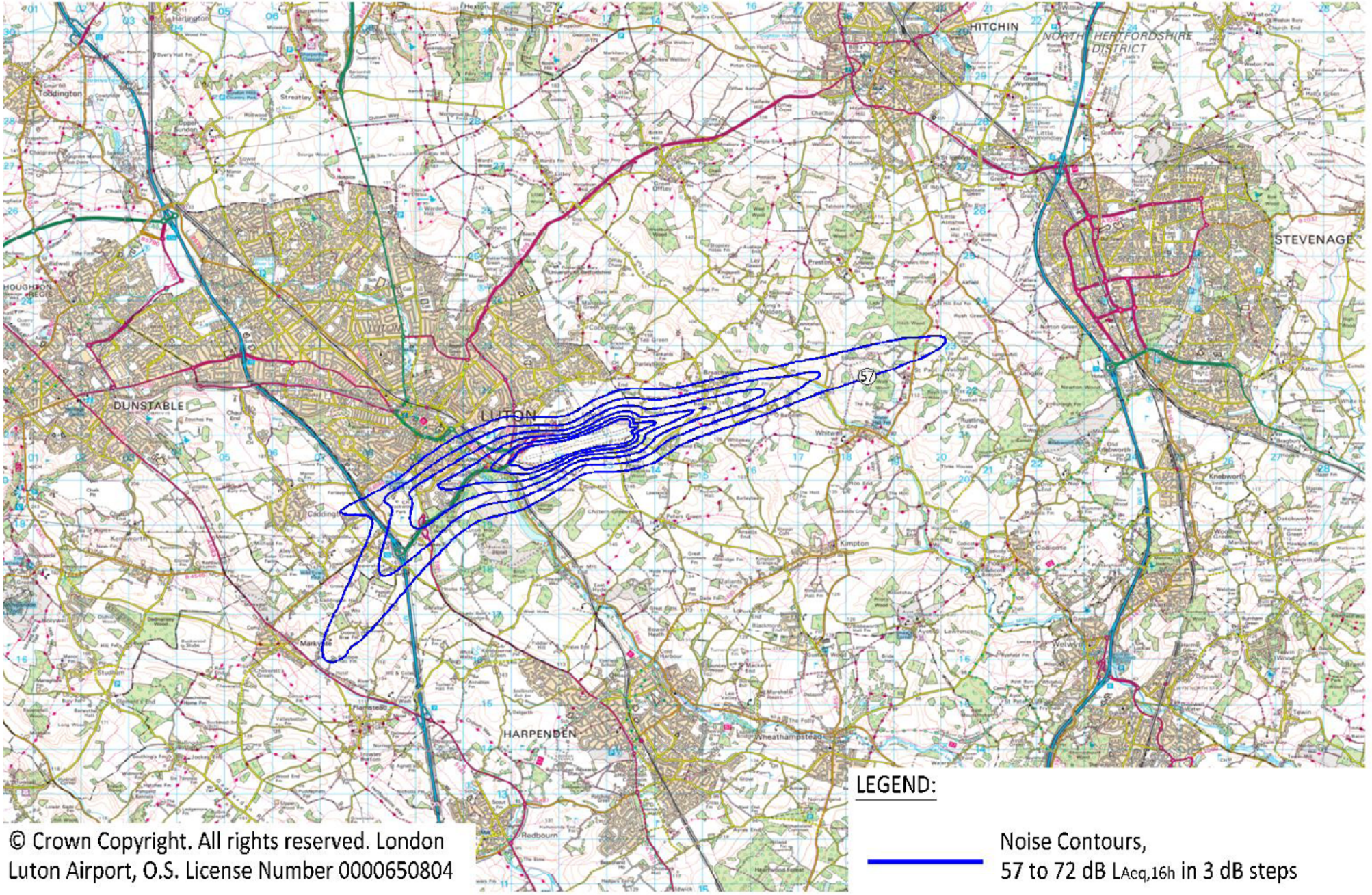
The population counts shown in the tables below were calculated using the CACI Ltd, 2018 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted. Please note, the population and dwellings data has been rounded to the nearest 50.

$L_{Aeq, 16\ hour}$ Daytime	2017		2018	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	9	22	9	22
>63	550	1,450	550	1,400
>60	1,700	4,400	1,650	4,350
>57	**4,000**	**9,150**	**3,950**	**9,100**

$L_{Aeq, 8\ hour}$ Night-time	2017		2018	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	12	30	150	400
>57	550	1,400	750	2,050
>54	1,650	4,250	1,950	5,000
>51	4,000	9,200	4,500	10,300
>48	**7,800**	**18,450**	**8,050**	**19,150**

The population and number of dwellings within the contours has increased, in lined with the contour area.

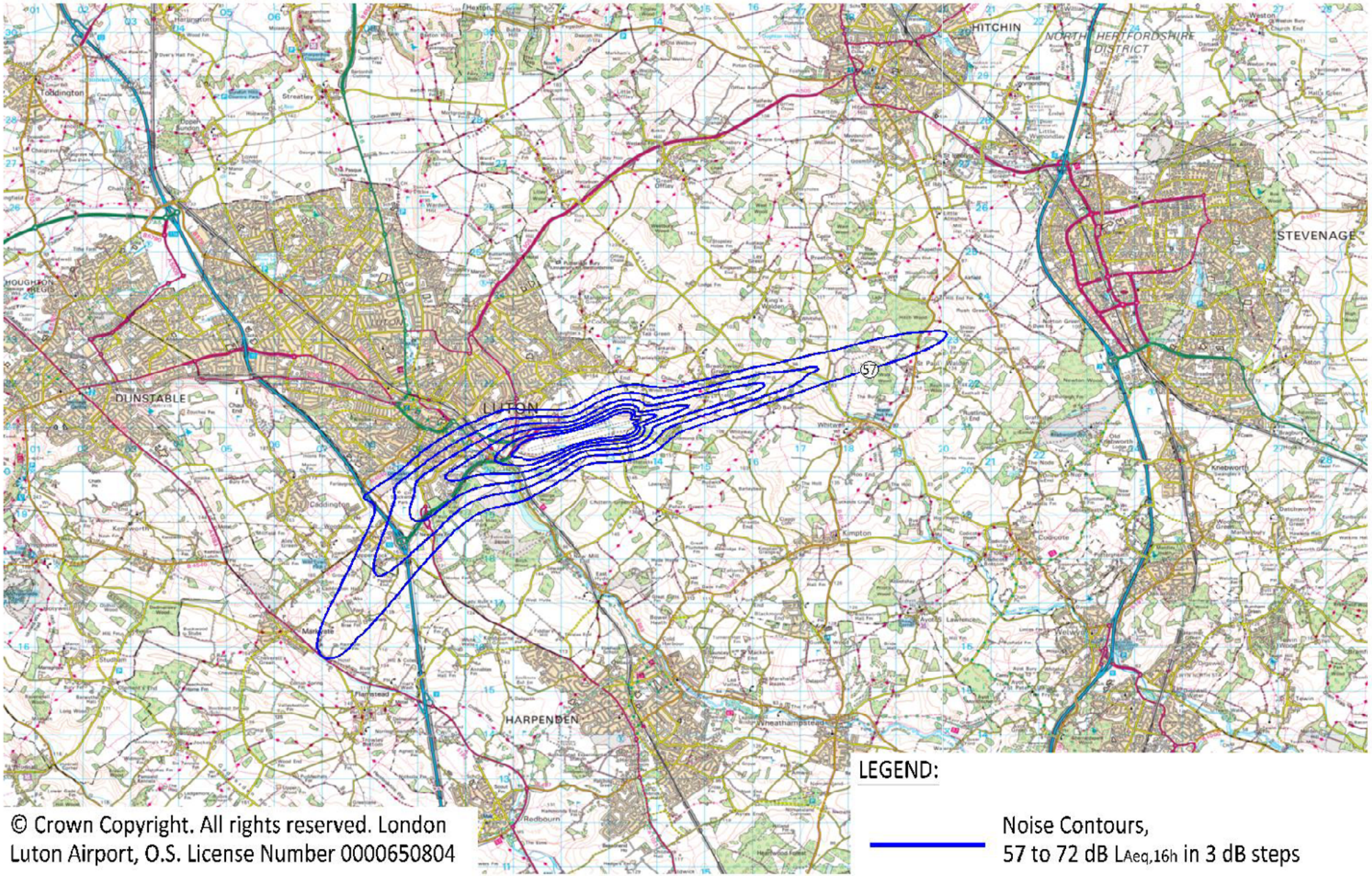
Annual Day Noise Contours Summer 2018



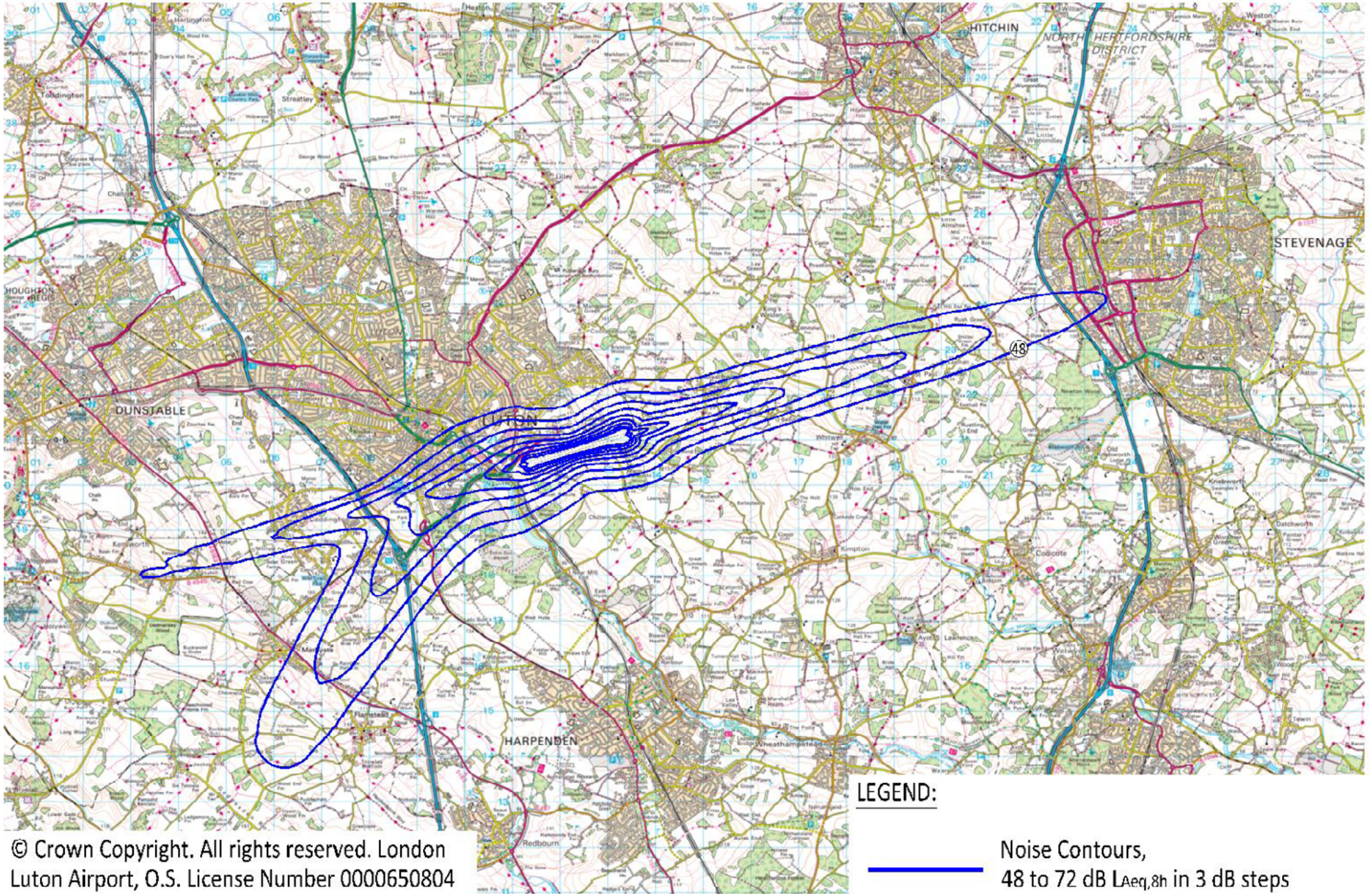
LEGEND:

Noise Contours,
57 to 72 dB $L_{Aeq,16h}$ in 3 dB steps

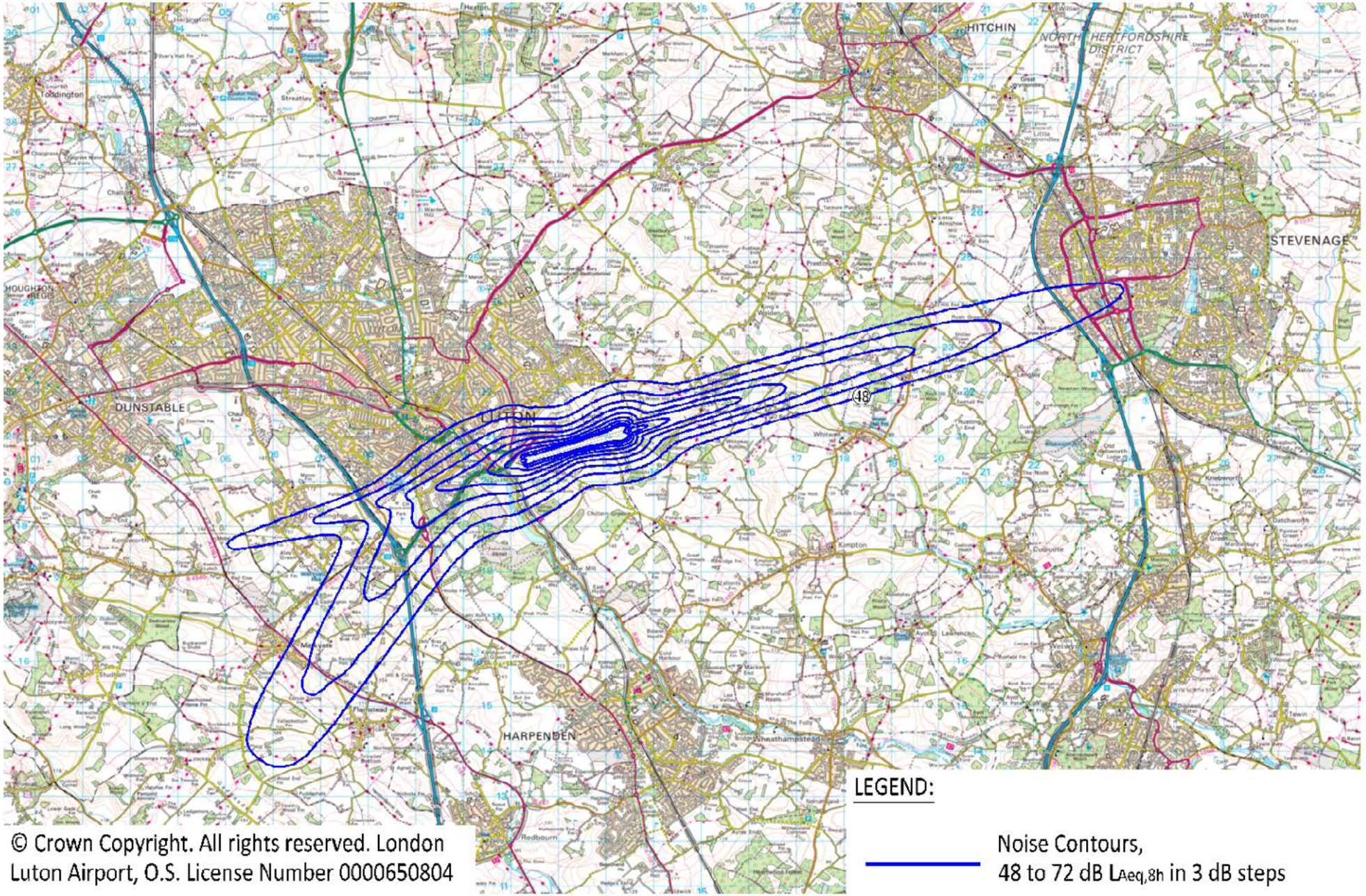
Annual Day Noise Contours Summer 2017



Annual Night Noise Contours Summer 2018



Annual Night Noise Contours Summer 2017



Annual Noise Contours 2018

The annual Lden noise contours for 2018 have been produced in accordance with London Luton Airport's Noise Action Plan. The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Compared to annual summer 2018 noise contours Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2018, with a 10dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2018.

Annual Lden Noise Contour Results

Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2017	2018	2017	2018	2017	2018
>75	0.9	0.9	0	0	0	0
>70	1.9	2.1	0	0	0	0
>65	5.8	6.3	1,200	1,500	450	550
>60	15.8	17.0	6,600	7,100	2,600	2,950
>55	**39.9**	**43.0**	**18,800**	**20,400**	**7,850**	**8,550**

Annual Lnight Noise Contour Results

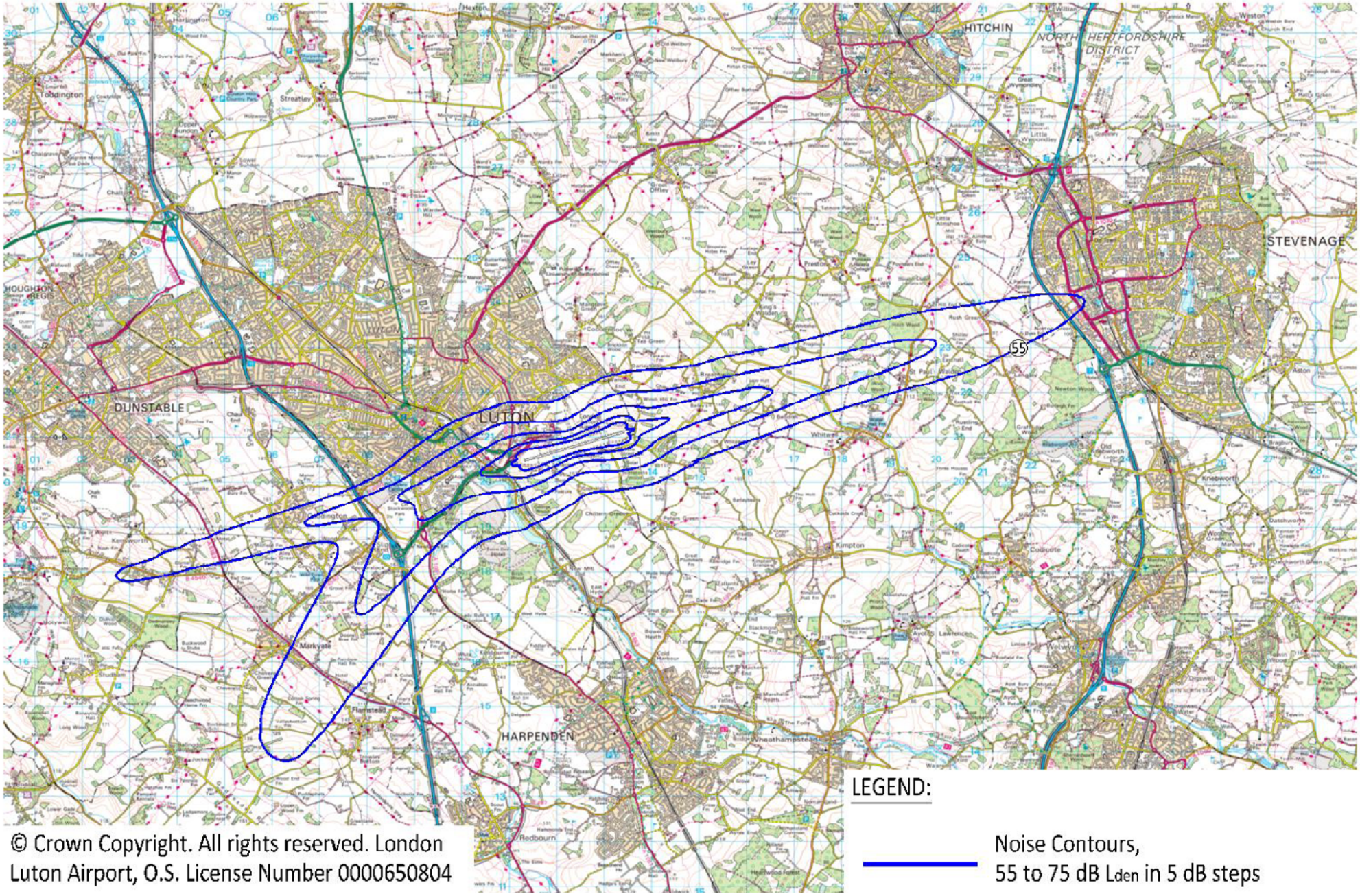
Contour Value (dB(A) L_{night})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2017	2018	2017	2018	2017	2018
>66	0.9	1.0	0	0	0	0
>63	1.5	1.6	0	0	0	0
>60	2.5	3.0	<100	<100	<50	<50
>57	4.9	5.6	800	1,300	300	500
>54	8.9	10.1	2,200	3,100	800	1,150
>51	17.1	18.9	6,800	8,100	2,700	3,450
>48	**30.5**	**33.7**	**12,900**	**15,000**	**5,350**	**6,350**

As can be seen from the tables above, the areas of the Lden and Lnight contours have increased. The increases are relatively consistent across contour values, with the night-time contours increasing the most in line with what would be expected due to the increase in nighttime passenger jet movements. The population and number of dwellings within the contours have also increased, due to the greater contour areas.

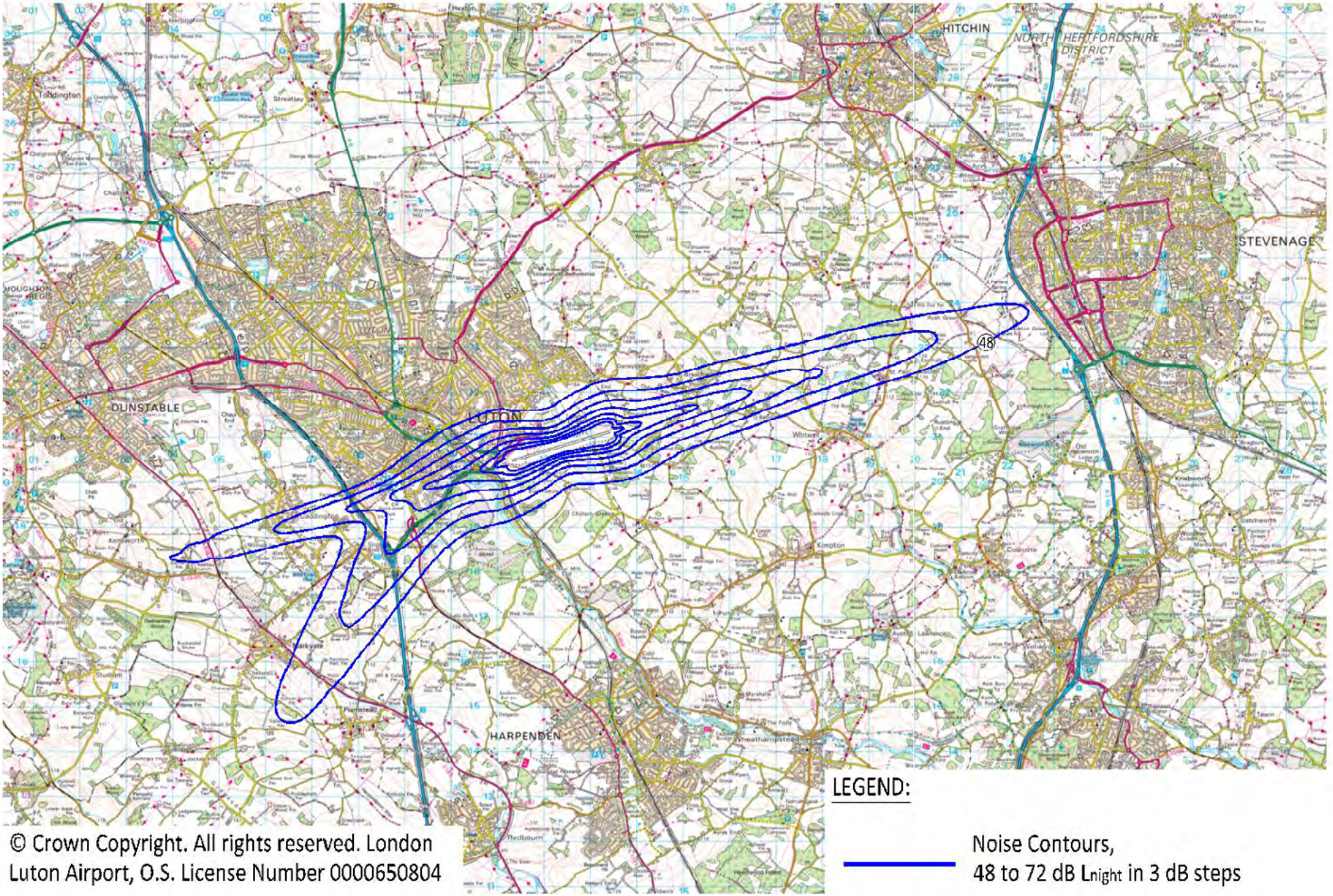
[1] - Population counts rounded to nearest 100

[2] - Dwelling counts rounded to nearest 50

Annual L_{den} Noise Contours 2018



Annual L_{night} Noise Contours 2018



Correspondence and Complaints

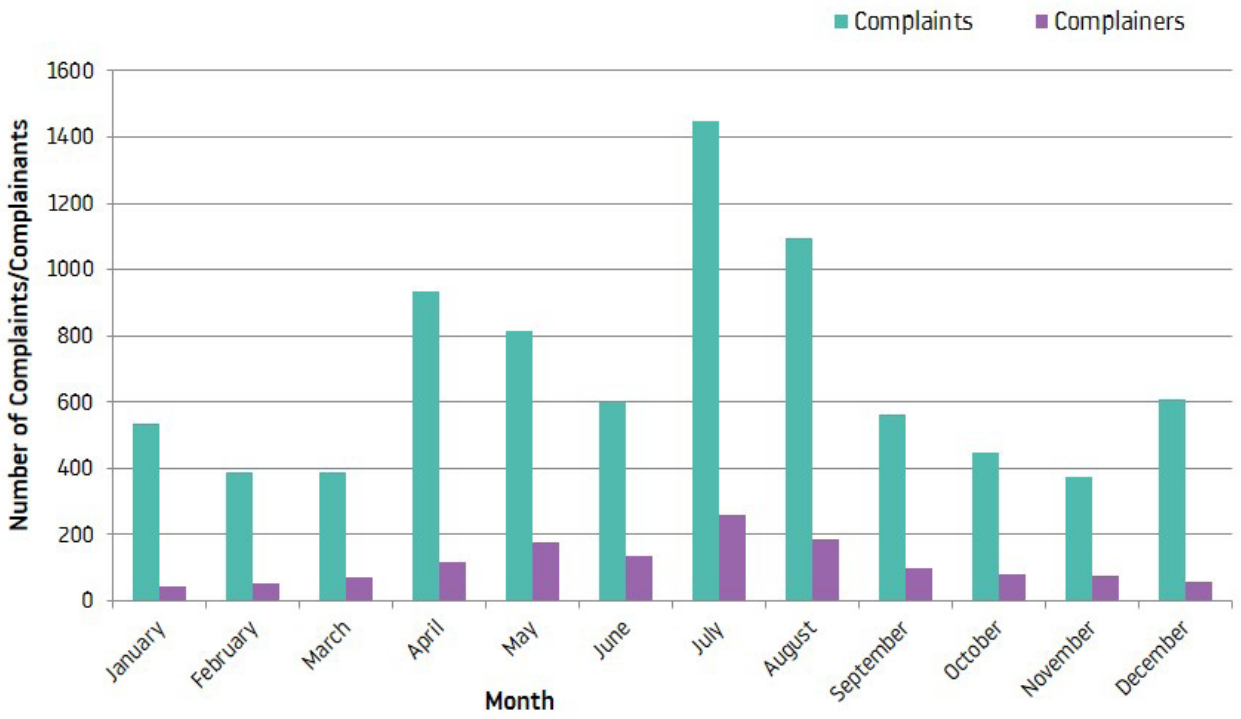
Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

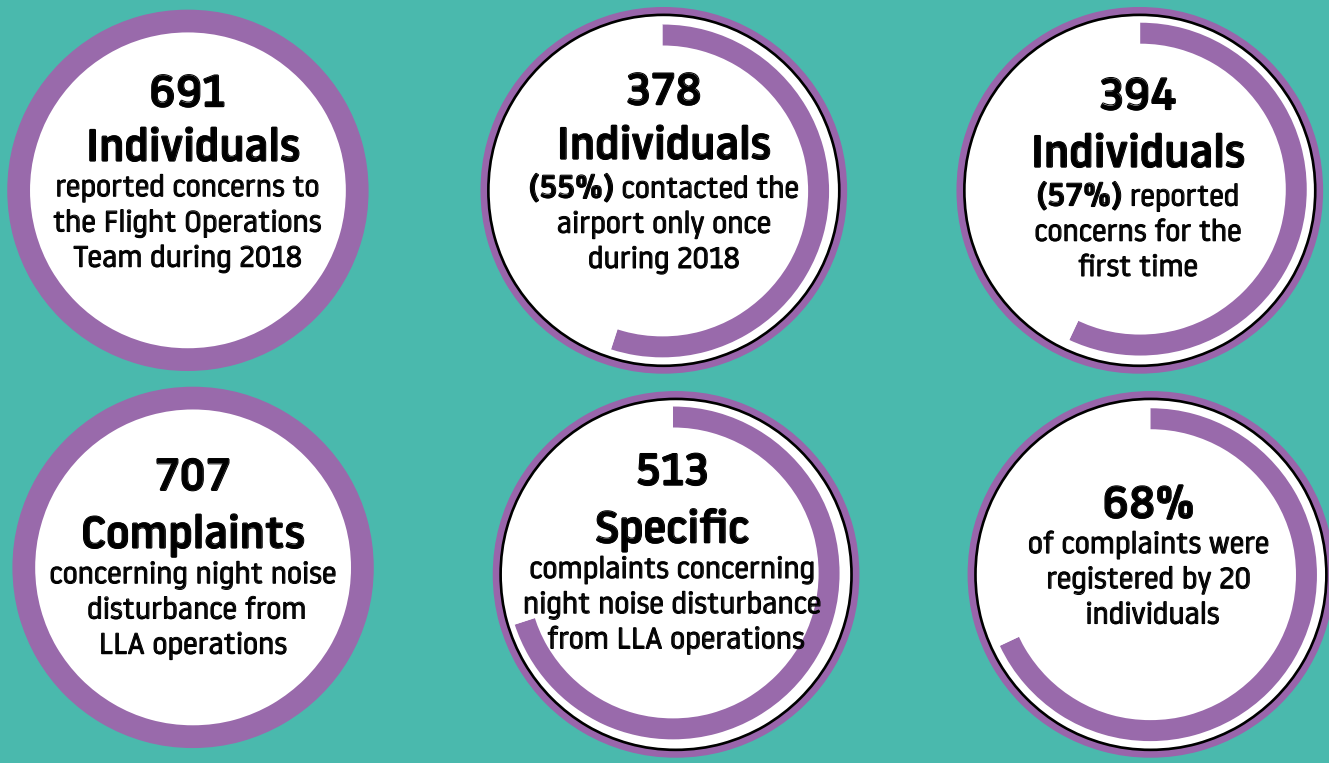
Complaints are reported in two forms – general disturbance and specific disturbance. A general disturbance relates to a complaint that does not specify a time period, examples of this type of complaint includes frequency, air quality and ground noise. A specific complaint relates to a complaint which specifies the time which can be correlated to an aircraft, example complaints of this type include too low, too loud, night flight and off-track. If a single piece of correspondence contains multiple specific disturbances, this will be logged as a general complaint regarding frequency.

Total complaints relating to LLA aircraft operations

	2017	2018	
Total No. of Complaints relating to LLA aircraft operations	15,384	8,275	-46%
No. of Complainants	1,121	691	-38%
No. of General Complaints	3,333	1,866	-44%
No. of Specific Complaints	12,051	6,409	-47%
Average No. of Complaints per Complainant	13.7	12.0	-12%
No. of Aircraft Movements per Complaint	8.8	16.5	+88%

During 2018 a total of 8,275 complaints (on average 23 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 15,384 complaints in 2017. Out of the total complaints 68% were registered by the 20 most regular complainants and 38% from just five individuals. A further 186 complaints received were not attributable to LLA traffic. The figure below shows the complaints statistics throughout 2018. More complaints were received in the July and August, correlating with an increase in aircraft activity.



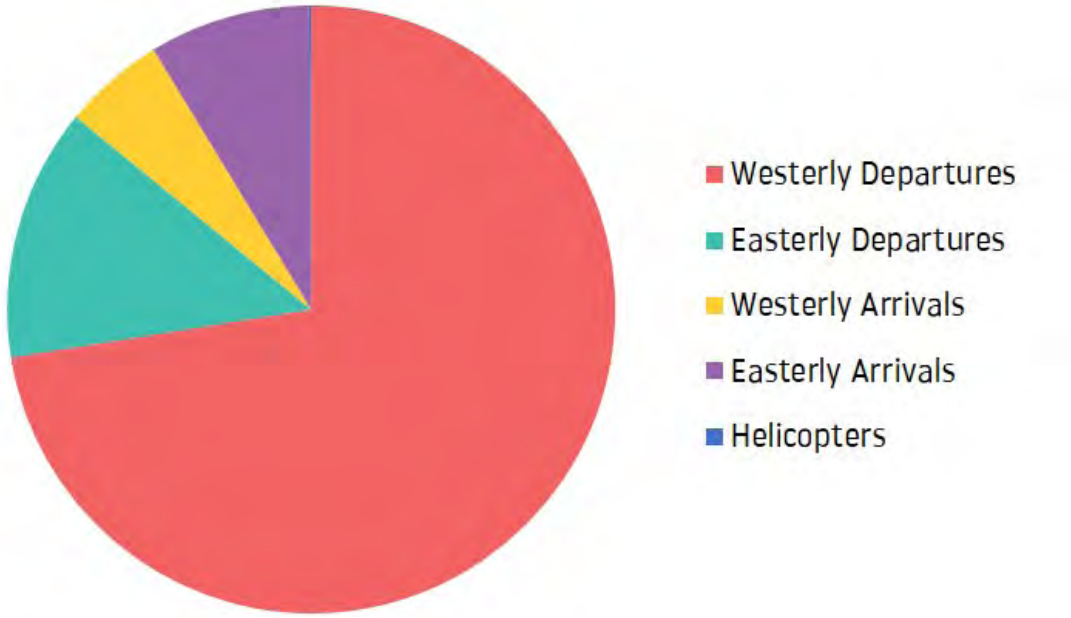


Complaints by aircraft type

Of the 8,275 complaints relating to LLA aircraft operations registered during the year, 5,832 complaints (70%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The table below shows aircraft types generating complaints.

Aircraft Type	No. of Correlated Complaints	% of Correlated Complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per Correlated Complaint
A319	713	12.23%	25,704	36
A320	2,675	45.87%	48,761	18
A321	948	16.26%	13,544	14
B737-800	531	9.10%	14,042	26
A306 (Cargo)	201	3.45%	1,096	5
B737-400	80	1.37%	858	11
GLF4/GLF5/GLF6	84	1.44%	3,837	46
B757 & B767	125	2.14%	1,753	14
B737-300	38	0.65%	424	11
B737-900	64	1.10%	554	9
Helicopter	7	0.12%	578	83
CL30/CL60	66	1.13%	2,941	45
GLEX/GL5T	80	1.37%	4,952	62
Other Private Aircraft	175	3.00%	16,510	94
Other Cargo Aircraft	33	0.57%	160	5
Other Passenger Aircraft	12	0.21%	556	46

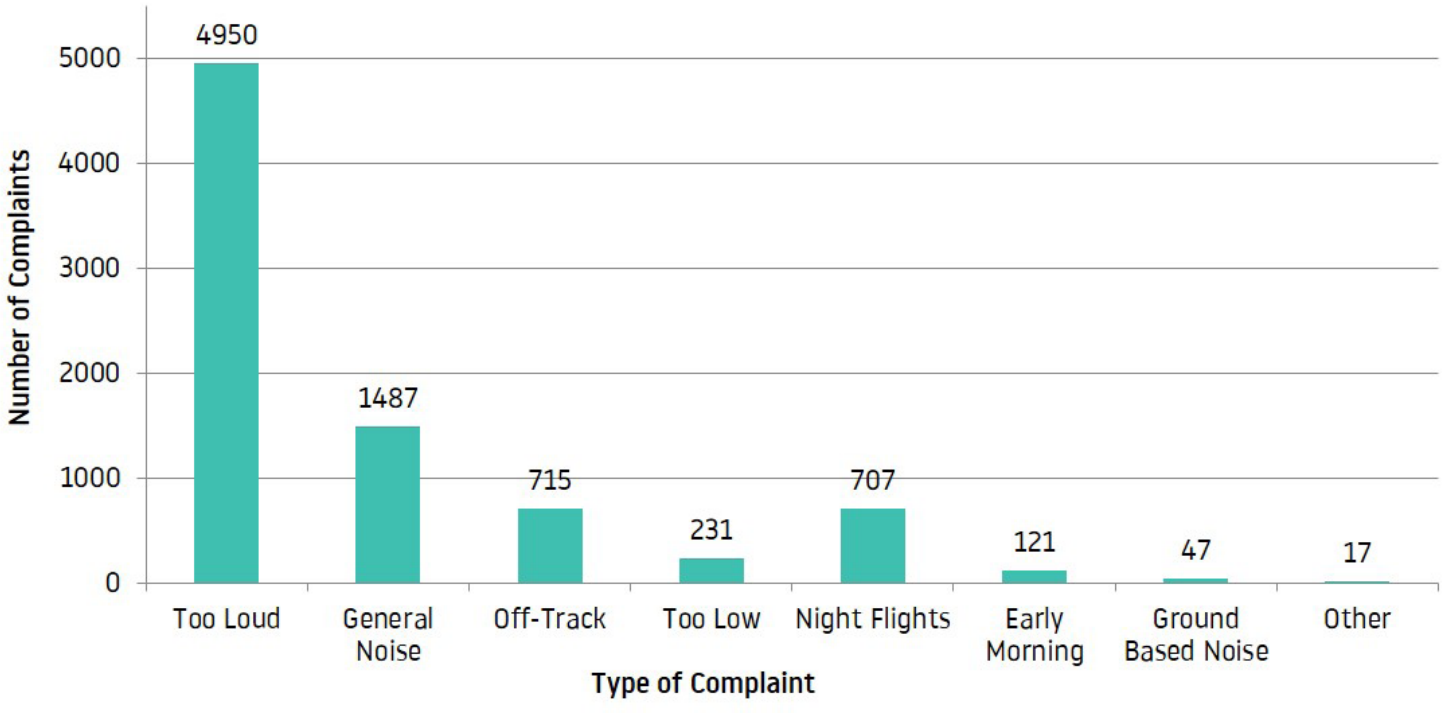
Nature of Disturbance



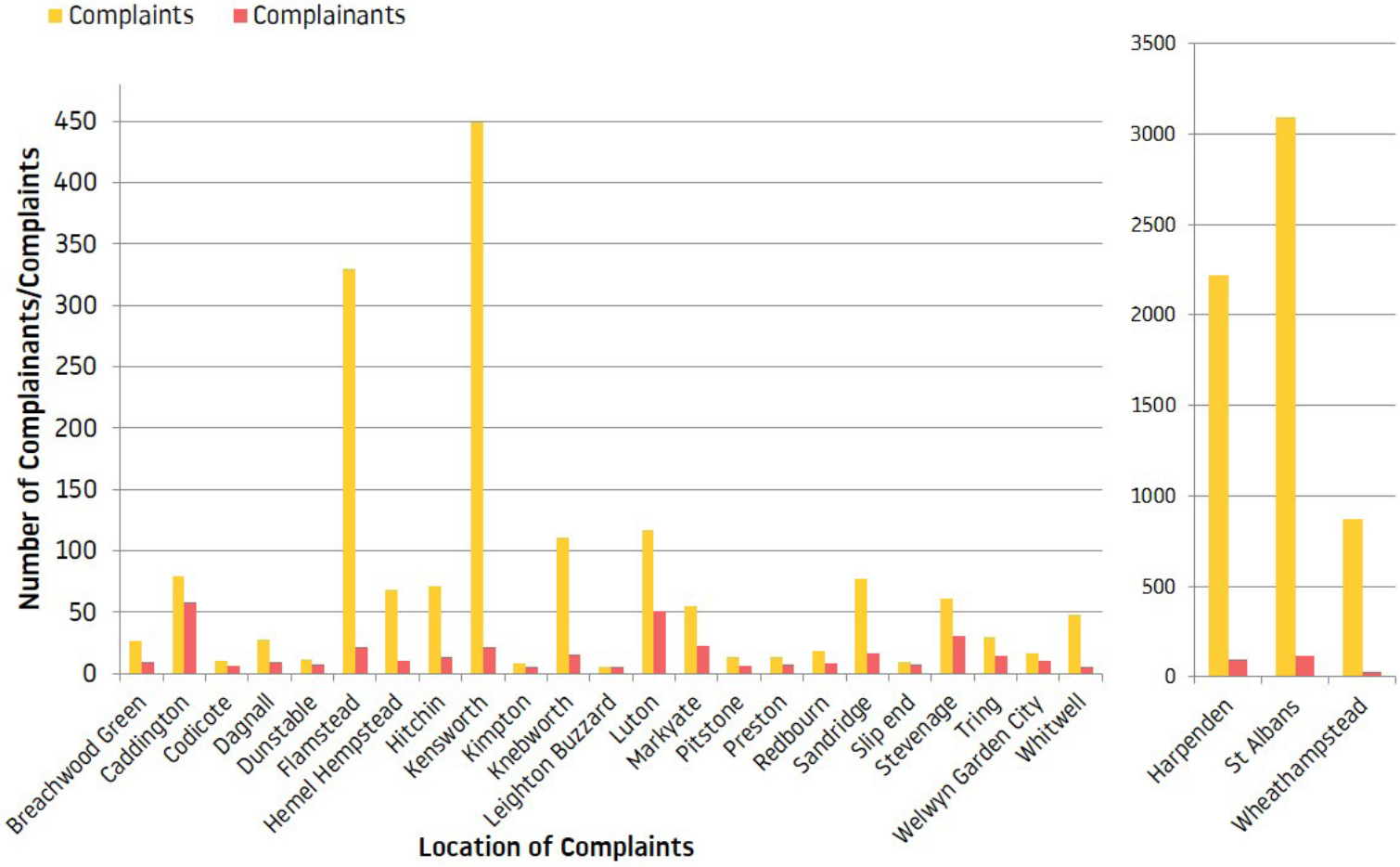
Within the 4,224 specific complaints correlated to aircraft movements concerning westerly departures, 4,113 reported specific aircraft following the Match/ Detling route, 73 related to aircraft on the Compton route and 27 related to aircraft following the Olney heading.

11 other complaints involved positioning flights following off-airways flight routes. Of the 784 complaints specifically attributed to easterly departures 615 related to aircraft following the Compton heading, 31 related to aircraft on Olney flight route and 116 to aircraft on the Match/Detling heading.

A further 22 complaints involved positioning flights following off-airways flight routes. Out of the total 815 complaints correlated to specific arriving aircraft, 315 related aircraft arriving at the airport during westerly operaitons and and 500 complaints related to easterly arrivals.



Location of Complainants (5+)



Communication method

The following table shows the method of communication used to contact London Luton Airport regarding noise.

Communication Method	% of Total Complaints
TraVis	77%
Email	18%
Telephone	5%
Letter	0%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Flight Operations Team by the following means:

Postal Address	**Flight Operations** **London Luton Airport** **Navigation House** **Airport Way** **Luton** **Beds** **LU2 9LY**
Direct Telephone	**(01582) 395382 (24 hours)**
Direct email	**noise.enquiries@ltn.aero**
TraVis	**www.travisltn.topsonic.aero**

Complaints analysis

During 2018 there was a decrease in complaints and complainants compared to 2017; this is thought to be due to a number of reasons:

• A large number of complaints were generated by a small number of people. The 20 most regular complainants in 2018 created 68% of total complaints.
• High numbers of complaints were recorded from specific locations, for example Harpenden, Sandridge, St Albans and Wheathampstead. Complaints from these areas accounted for 76% of total complaints. In these areas there is a heightened awareness of aircraft, particularly in relation to the growth on this route and recent airspace changes.
• As complaints recieved in 2017 were submitted to the CAA as part of the Post Implementation Review, a number of campaigns were organised encouraging people to complain. This is likely to have increased complaints in 2017 and therefore a decrease is shown in 2018.
• As winds dictated westerly operations for 63% of the time, the largest percentage of complaints related to aircraft operations during westerlies, this is in line with previous years.

Community Relations

Through the London Luton Airport Consultative Committee (LLACC), which meets every quarter, London Luton Airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the Consultative Committee including meeting minutes and its representatives can be found at the following link: **http://www.llacc.com/**

In 2018, the Flight Operations Team continued the Public Surgery programme. These drop-in events allow local residents to talk to the team face to face to discuss any concerns regarding the impact of LLA's operations. Over 300 residents attended to the Public Surgeries which were held in Flamstead, Ivinghoe, Kensworth, Markyate, Redbourn, Sandridge and Wheathampstead. These will continue to be scheduled in 2019, details of upcoming surgery events can be viewed here.

The Flight Operations team, held meetings with Heidi Allen MP, Mike Penning MP and a residents group 'Stop low flights from Luton'. Additionally, members of the team attended meetings in the community with local residents, as well as attending St Albans Quieter Skies AGM. Furtermore, invitations are often extended to local residents and LLACC members to visit the Flight Operations Team for a demonstration of the Aircraft Noise & Track Monitoring System, to discuss specific concerns and to view the specific tracks of LLA aircraft operations in their area.

Responsible Business Strategy

In 2018 we started working on the development of a broader strategy to incorporate environmental, social and governance topics, capturing current activities and ensuring that we act responsibly in all areas of work. We engaged in an extensive consultation with partners and departments across the business, collating input from a broad mix of stakeholders. A Responsible Business Committee was formed to oversee the delivery of improvements in six key areas, supporting it through a governance and sustainability management structure. Following further consultation with our shareholders we will be launching our new Responsible Business Strategy in 2019.

Community Engagement

Our operations are intrinsically linked to the community. The proximity to residential areas means that impacts such as noise, produced by aircraft and airport operations, has the potential to adversely impact the life of people living nearby and under its flight paths. Whilst schemes exist to mitigate noise, it cannot be completely eliminated. Our Community Engagement programme therefore aims to ensure those living close by also see the benefits of a successful airport.

In 2018 the funding for the airport's Community Trust Fund was increased to £100,000, supporting 13,287 beneficiaries across Hertfordshire, Bedfordshire and Buckinghamshire. We commenced a new two-year charity partnership with Macmillan Cancer Support and raised over £45,000, exceeding our year one target. Our school engagement programme ran until July 2018, reaching 164 students in 11 schools. We also continued working in partnership with the Prince's Trust and the Launch Group delivering two 'Get into Airports' programmes for unemployed people aged 18-30. In 2018 over 80% of participants secured paid employment after the programme completion. We also supported a number of award ceremonies in the local area celebrating the achievements of neighbouring businesses, organisations and individuals.

Noise Action Plan

The table below provides an update on the actions in the Noise Action Plan. LLA have recently updated this plan, valid from 2019., this can be downloaded from here.

	Action	Timescale
1	Operate and maintain a noise and track-keeping system to monitor aircraft operations, reporting statistics quarterly to the LLACC (via NTSC).	Ongoing
2	Produce Lden noise contours annually, based on an annual average 24 hour period and present to LLACC (via NTSC).	Ongoing
3	Undertake regular analysis of aircraft activity and noise to identify where a review of procedures may help minimise disturbance.	Ongoing
4	Monitor % compliance of Continuous Descent Approaches (CDA) both day and night, reporting quarterly to the LLACC (via NTSC)	Ongoing
5	Undertake community visits with a portable handheld noise monitoring device, on request.	Ongoing
6	Present quarterly night contours to the LLACC (via NTSC).	Ongoing
7	Investigate, log and respond to all complaints relating to London Luton Airport aircraft activity, reporting in-depth statistics quarterly to the LLACC (via NTSC)	Ongoing
8	Quarterly Monitoring Reports to be available to view on the London Luton Airport website as well as the LLACC website.	Ongoing
9	Monitor helicopter operations to/from London Luton Airport to ensure they avoid, where possible, the most densely populated areas.	Ongoing
10	Calibrate noise and track-keeping system and INM noise contour model on an annual basis.	Ongoing
11	Monitor the track-keeping compliance and follow up with operators, as necessary.	Ongoing
12	Monitor the number of marginally compliant Chapter 3 aircraft.	Ongoing
13	Monitor and report progress against Noise Action Plan actions to LLACC (via NTSC), providing statistics annually in the Annual Monitoring Report	Ongoing
14	Review the voluntary Night Noise Policy in consultation with the LLACC (via NTSC).	2015
15	Encourage daytime operations through higher landing fees at night.	Ongoing
16	Fine any departing aircraft exceeding noise limits, to encourage airlines to operate the quietest aircraft types.	Ongoing
17	Discourage residential development close to the airport boundary or areas affected by aircraft noise, in liaison with Local Authorities.	Ongoing
18	Divert all noise violation limit penalties from airport operations to support the noise management programme and Community Trust Fund. Penalties will be reported to LLACC via NTSC on a quarterly basis.	Ongoing
19	Liaise regularly with airline operators via a 'Flight Ops' Committee to ensure adherence to existing standard procedures and encourage innovation.	Ongoing
20	Review operational procedures in relation to noise with support of the 'Flight Ops' committee and NTSC.	Ongoing
21	Work with operators to encourage the voluntary phase out of noisiest aircraft.	Ongoing
22	Continue to review procedures for helicopter operations with the support of air traffic control.	Ongoing
23	Work with operators on the voluntary phase out of marginally compliant Chapter 3 high aircraft i.e. hushkitted aircraft.	2014
24	Explore with the 'Flight Ops' Committee/NTSC penalties for flying off track after the introduction of RNAV-1 departure routes.	2015
25	Work with airlines, air traffic control, NATS and other stakeholders to introduce new technologies and environmental improvements.	Ongoing

	Action	Timescale
26	Review the Engine Ground Running policy to minimise disturbance during the night and late in the evening.	Ongoing
27	Operate within planning limits.	Incomplete
28	Actively participate and support the work of the industry and Airport Operators Association with respect to its 'Sustainable Aviation' programme.	Ongoing
29	Liaise with London Heathrow and other airports with respect to non-London Luton overflying traffic, where necessary.	Ongoing
30	Work with the LLACC (via NTSC), the 'Flight Ops' committee and NATS to identify airspace improvements which will improve the noise environment.	Ongoing
31	Agree key performance indicators and targets for noise 'actions', where appropriate, with the LLACC (via NTSC).	Ongoing
32	Assess the impact of London Luton Airport traffic on the Chilterns AONB and explore potential for operational improvements	Ongoing
33	Attend public meetings on request, where appropriate, to discuss the airport's operations.	Ongoing
34	Provide an information pack to first time complainants and those wishing to relocate into the area.	Ongoing
35	Formally engage with air traffic control and airline/other operators to help improve noise management/track keeping.	Ongoing
36	Host visits from local residents and MPs to discuss community concerns and to demonstrate the Noise and Track-Keeping system.	Ongoing
37	Prepare an Annual Monitoring Report, in conjunction with Luton Borough Council, incorporating detailed statistics on all aspects of the airport's operations including passenger throughput.	Ongoing
38	Provide information in the Annual Monitoring Report on progress made on actions set out in the Noise Action Plan.	Ongoing
39	Establish a committee with Environmental Health Officers of Local Authorities (Herts, Beds and Bucks) to discuss the impact of the airport's operations and the Noise Action Plan	Ongoing
40	Continue to offer email, telephone and website as options for complaints and enquiries	Ongoing
41	Invite members of the public to visit LLA to review noise and track information.	Ongoing
42	Engage effectively and proactively with the LLACC and NTSC.	Ongoing
43	Engage with local planning authorities to ensure they are informed about noise matters.	Ongoing
44	Review communication material, the noise information pack and the London Luton Airport website with respect to noise/noise management.	2015/2016
45	Hold community surgeries to give local people an opportunity to discuss issues in person with representatives from the Community Relations and Flight Operations Department.	Ongoing
46	Improve communication with transient and non-based operators/users to ensure environmental and operational procedures are understood and adhered to.	Ongoing
47	Develop and implement a Noise Control Scheme to control the noise of aircraft both during the day (0700 – 2300) and night periods (2300-0700), including a Noise Quota System for the night period (2330 -0600) to include: • Sanctions in relation to operators of aircraft which land or take off in breach of the QC System • Exclusion of aircraft movements with a QC value in excess of QC2 during the night time (2300-0700) • Details of the procedures to be adopted and measures with the purpose of phasing out night time (2300 to 0700) operations by aircraft with a QC value greater than 1 on either departure or arrival.	Ongoing

	Action	Timescale
47	(continued) For the Night Quota Period (2330 – 0600) this shall have the following limits incorporated into the scheme: • Total annual movements by aircraft (per 12 month period) shall be limited to 9,650; • The total annual noise quota in any 12 month period shall be limited to 3,500 which, using all reasonable endeavours, shall be reduced at each review until it reaches a point where it does not exceed 2,800 by 2028. For the Early Morning Shoulder Period (06.00 – 07.00) this shall have the following limit incorporated into the schemes: • Total annual movements by aircraft in any 12 month period shall be limited to 7000. Review the Noise Control Scheme no later than the first and fourth year after introduction, and every subsequent five years.	Ongoing
48	Report actual and forecasted aircraft movements for the preceding and next twelve months every three months to Luton Borough Council.	Ongoing
49	Implement a progressive reduction in the daytime maximum noise violation limit (NVL) in line with the requirements of the planning conditions.	2015
50	Develop a strategy to be submitted to Luton Borough Council for their approval which defines the methods to be used by London Luton Airport Operations Ltd (LLAOL) or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.2km2 for the area exposed to >57dB Leq16hr (0700-2300) and above and for night time noise to 31.6 km2 for the area exposed to >48dB Leq8hr (2300-0700) and above.	Incomplete, will be submitted by 2020.
51	Report forecasted aircraft movements and consequential noise contours (Day, Night and Quota Period) for the forthcoming calendar year annually, which shall utilise the standard 92 day summer contour. Where the area enclosed by the 57-72dB(A) Leq16hr (0700-2300) contour could exceed 19.4 sq km for daytime noise, or the area enclosed by the 48-72dB(A) Leq8hr (2300-0700) contours could exceed 37.2 sq km for night-time noise, an action plan will be put in place to ensure this level isn't breached.	Ongoing
52	Develop a Noise Control Monitoring Scheme and submit to Luton Borough Council for approval, to include: • Details of the fixed noise monitoring terminals and track keeping system (vertical and horizontal) • Details of the complaints handling system • Sanctions to be imposed on infringements by aircraft in respect of noise limits and track keeping • Arrangements for the verification of the submitted information Review the Noise Control Monitoring Scheme no later than the first and forth year after introduction, and every subsequent five years.	Ongoing
53	Develop a Ground Noise Scheme and submit to Luton Borough Council for approval, to include: • Measures to limit the ground running of aircraft propulsion engines between 2300-0700 • Preferential use of stands and taxiways between 2300-0700 • Steps to limit the use of auxiliary power units (including the provision of fixed electrical ground power to stands and or suitably quietened ground power units) • No ground running of aeroplane engines for testing or maintenance purposes between 2300-0700, and designated areas for such testing between 0700-2300. Review the Ground Noise Scheme no later than the first and forth year after introduction, and every subsequent five years.	**Ongoing**
54	Develop a Noise Insulation Scheme for residential as well as non-residential buildings.	2016
55	Reduce the night time noise violation limit to 80 dB(A) by April 2015	2015

Employment

Employment at and surrounding London Luton Airport (LLA) contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the Airport. Thus, any analysis of the Airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the Airport boundary has been conducted, the results of which are summarised below.

A list of businesses at London Luton Airport was matched with the Inter Departmental Business Register (IDBR). The IDBR dataset produced by the Office for National Statistics (ONS) is a comprehensive list of UK businesses that is used by the government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analysis of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted. (Source: ONS website www.statistics.gov.uk).

An initial list was received from London Luton Airport of companies within their boundary. The listing was matched against the IDBR. Companies outside the airport boundary were identified by the street names/areas

- Spittlesea Road
- Part of Frank Lester Way
- President Way
- Wigmore House
- Part of airport Way
- Barratt Industrial Park
- Airport Executive Park

A handful of companies which appeared on the list, but not the IDBR, had imputed estimates from analysis of the size of the enterprise and information from the airport.

Total employment in and around the airport

Employment was measured using main section headings from the Standard Industrial Classification 2007 (SIC 2007). Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	500
Administrative and Support Service Activities	2,800
Financial and Insurance Activities	<100*
Manufacturing	1,100
Professional, Scientific and Technical Activities	<100*
Public Administration & Defence; Compulsory Social Security	<100*
Real Estate Activities	<100*
Transportation and Storage	5,000
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	600
Grand Total	**10,400**

** - Figures have been suppressed where there are less than three companies in a given Section and/ or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data.*

Due to confidentiality issues we are bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

The table illustrates that there are an estimated 10,400 employees in and around the Airport. This has increased by 200 since 2017, a rise of 2 per cent.

Employment by working pattern

The IDBR provides employment figures by full and part time working pattern. The total number of full time employees was 8,700 which was unchanged between 2017 and 2018. The figure for part time employees was 1,700 which was an increase of 200 from last year's figures.

The percentage split of full/part time employees found at the airport compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of LLA	83%	17%
Luton UA	68%	32%

Source for Luton UA Figures: Business Register & Employment Survey 2015, latest data. Figures are percentages of those in employment.

Full- and part-time working patterns in the vicinity of the Airport differs from that found within Luton as a whole, with the Airport having a higher proportion of full time workers.

Time series

The following figures from 2012 to 2018 show the estimated employment levels in the vicinity of the Airport.

Source: AMR Employment Surveys 2012- 2018

There was a small increase in employment between 2017 and 2018 around Luton Airport. There are approximately 10,400 employees working in the vicinity of the Airport.

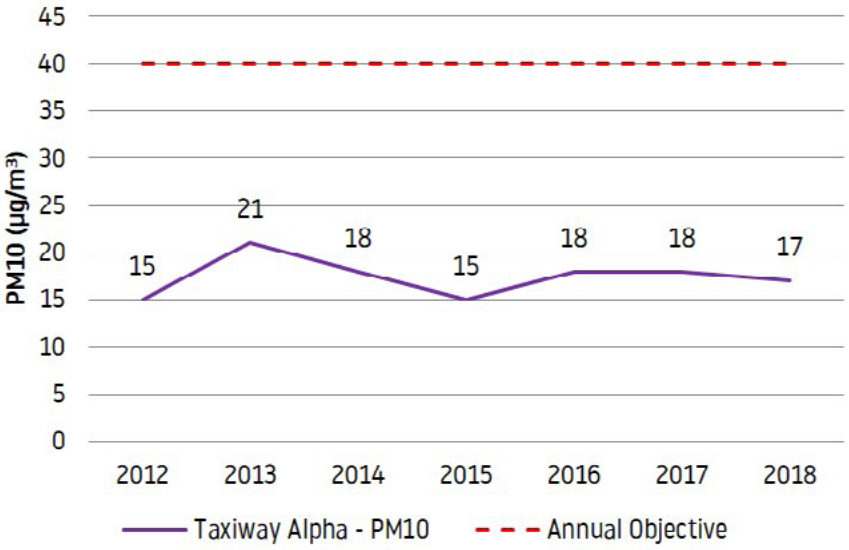
Air Quality

London Luton Airport has been monitoring air quality in and around the airport environment since 2003. Air quality data collected at LLA is integrated into a monitoring programme incorporating data collected by the surrounding Local Authorities, with a monthly report available to view online at http://www.airqualityengland.co.uk The parameters we measure are PM_{10} and NO_2.

PM_{10} (Particulates measuring 10µm or less)

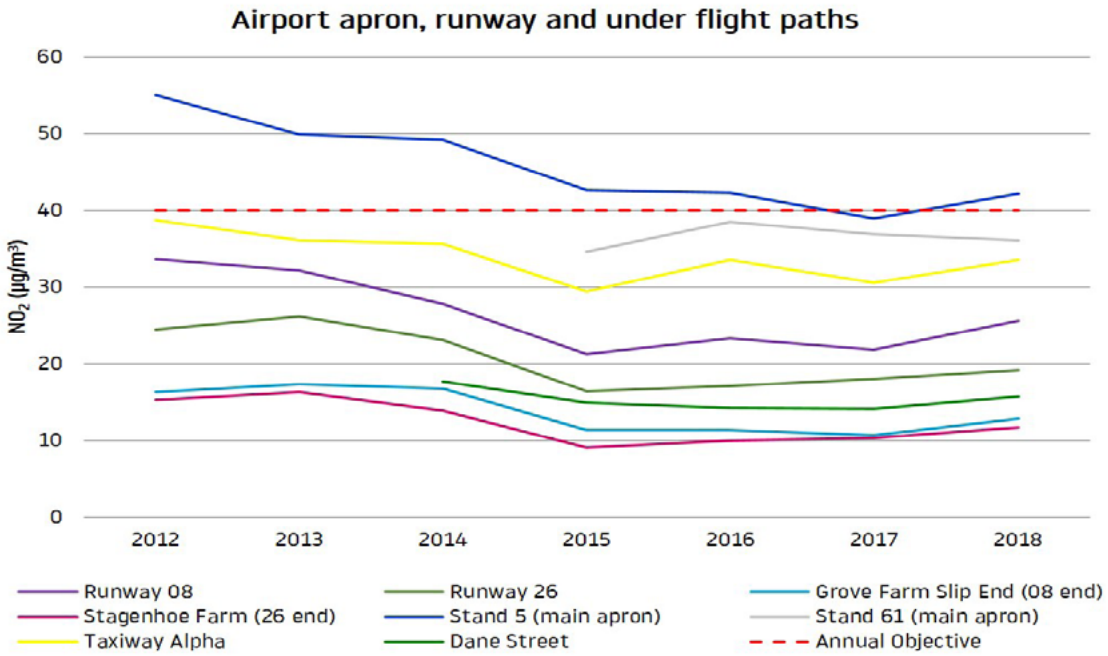
PM_{10} is one of the main contributors to reduced ambient air quality. Particulate matter is made up of fine particles including dust and soot which are suspended in the air. When you breathe in these particles they can stick to the surface of your lungs, and in areas of high pollution can cause respiratory health problems. Local sources include emissions from vehicles and aircraft engines, wear of brakes, tyres, and construction debris.

PM_{10} is monitored from one location in the middle of the airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg/m³.

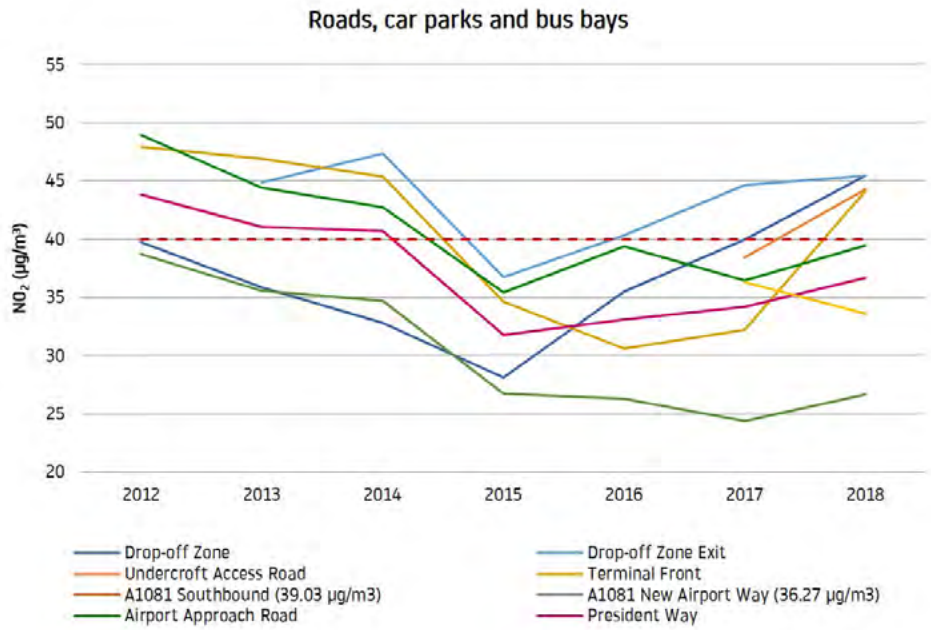


Nitrogen Dioxide (NO_2)

NO_2 in high concentrations can cause a wide variety of health and environmental impacts. The gas is produced from the combustion of fuels such as diesel and aviation fuel. NO_2 is currently measured from 18 locations around LLA, and the results have a bias-adjustment factor applied using national database factors. The annual mean local air quality objective of 40µg/m³ also applies to NO_2.



NO2 levels at the closest residential receptors to the airport, and also along the aircraft flight paths are significantly below the objective level laid out in the Air Quality (England) Regulations 2000 (as amended). Levels monitored by the roads around the airport, in the car parks and on the apron are a little higher, with the locations at the drop-off zone, undercroft access road and the terminal front slightly exceeding the annual mean objective of 40 µg/m³. To reduce the congestion around the front of the terminal, the number of bus bays have been increased from 13 to 19. The drop-off zone exit points have also been increased to 7 to aid the flow of the traffic. To encourage sustainable modes of transport aid passengers in identifying onward travel information, London Luton Airport has opened the Onward Travel Centre was opened, which has been operational for over a year.



Surface Access

LLA aims to improve access to the terminal, particularly by public transport in order to reduce the contribution that journeys make to total airport-related CO2 emissions and also to air pollution. LLA's current airport Surface Access Strategy runs from 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework.

During August 2017 LLAOL undertook a consultation with key stakeholders for the airport surface access strategy covering period up to 2022. The responses all supported the proposed targets and actions with the construction of the DART (Direct Airport to Rail Transit) being noted as particularly welcome addition

Modes of Transport

Passengers transport mode share (CAA Data)

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLA uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table below shows the weighted CAA data for 2012-2018. The CAA statistics suggest that 33% of airport passengers chose to use public transport in 2018.

Whilst the figures have remained fairly static for the last few years, LLA have been working to promote the use of sustainable transport. LLA have also invested in an upgraded bus station, including installing a traffic light system to improve safety. Electric charging points have also been installed in the multi-storey car park.

Furthermore, in 2018 LLAL started work on the DART Mass Passenger Transit System. The Luton DART is a £225m investment, which will provide fast, easy access from the mainline trains (serving London and the East Midlands/South Yorkshire), encouraging more people to use public transport and help reduce congestion on the surrounding roads. The DART is intended to be in operation by 2021.

Passenger transport mode share data over last 7 years

%	2012	2013	2014	2015	2016	2017	2018
Drop Off	27	28	25	27	28	43	45
Car Park	23	23	28	27	23	20	17
Rail	17	16	14	16	16	17	17
Bus/Coach	16	16	15	15	16	16	16

Staff transport mode share

LLA aims to reduce the proportion of staff travelling alone by car to and from Lond Luton Airport. Whilst employee travel does not generate as many trips as passengers, it is an important consideration as employees making a more sustainable travel choice will give daily results due to the frequency of their need to commute to work. Staff travel surveys are underaken once every 2 years and the results since 2010 are presented in the table below.

Staff transport mode share data over last 8 years

%	2010	2012	2014	2016	2018
Drive alone	66	66	62	68	59
Car share	12	8	11	7	8
Taxi	1	1	0	1	1
Motorcycle	1	1	1	1	1
Rail	5	5	10	7	8
Bus/Coach	7	9	8	9	16
Cycle	2	2	2	2	2
Walk	5	6	7	5	6

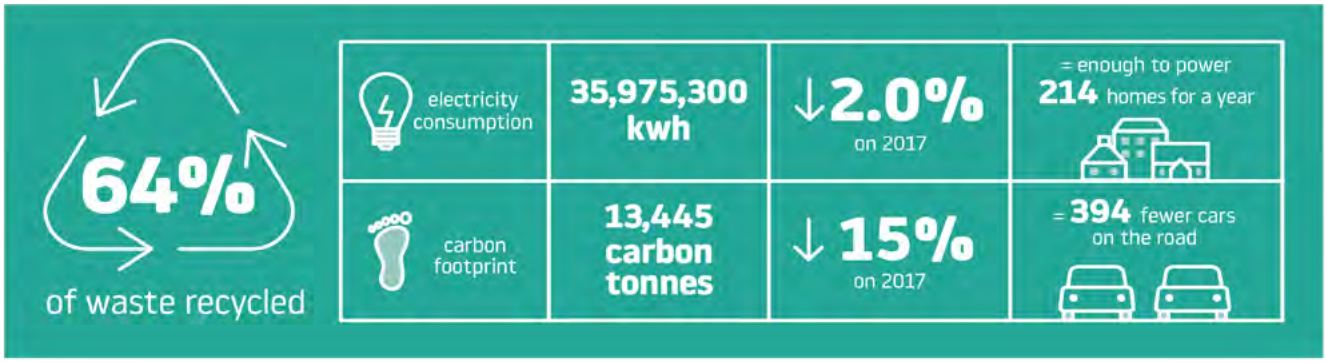
Sustainability

London Luton Airport is committed to operating in a way that maximises the socio-economic benefits for the local and regional area whilst minimising the environmental impacts. To ensure this vision is shared and supported, we work closely with airlines, stakeholders and business partners to promote this approach across the airport, ensuring that the full benefits that London Luton Airport can bring to the region are realised.

LLAOL aims to continuously improve on environmental performance in many different areas across the Airport.

In 2018 the following was achieved:

- 6% Reduction in electricity usage per passenger, roughly saving 214 Luton homes worth of annual usage.
- 2% increase in gas usage per passenger
- 6% reduction in carbon emissions per passenger
- 64% of waste was recycled
- 3% reduction in water usage per passenger



During 2018, LLA has made great improvements in the way waste is managed at the airport and have almost doubled our recycling rate – in 2018, London Luton Airport recycled 64% of its waste from 35% in 2017. To achieve this, we worked closely with our concessionaires to reduce waste at source and segregate recyclable waste such as glass, food, carboard and mixed recycling. LLA also introduced a “pay by weight” system whereby the concessionaires are being directly charged for the amount of waste generated with general waste being charged the highest rate to encourage recycling. In addition, LLA introduced additional waste sorting operatives to increase the amount of waste that’s recycled before it leaves the airport.

The airport maintained the ISO14001 international certification for Environmental Management System and the ISO50001 international certification for Energy Management.

Waste

Over the last few years, we’ve made great improvements in the way waste is managed at the airport and have almost doubled our recycling rate – in 2018, London Luton Airport recycled 64% of its waste. To achieve this, we’ve worked closely with our concessionaires to reduce waste at source and segregate recyclable waste such as glass, food, carboard and mixed recycling. We’ve also introduced a “pay by weight” system whereby the concessionaires are being directly charged for the amount of waste generated with general waste being charged the highest rate to encourage recycling. We’ve also introduced additional waste sorting operatives to increase the amount of waste that’s recycled before it leaves the airport.

Carbon / Energy

During 2018, we undertook a large-scale project to upgrade our air handling units on half of the airport estate leading to over a gigawatt of electricity reduction per annum. The project has been critical in mitigating against the increase in consumption due expansion of the building infrastructure as part of the terminal upgrades as well as the number associated growth in the number of terminal concessionaires. Phase II of the project is expected to be finished during 2019 further reducing LLA's electricity demand.

Due to colder temperatures experienced in 2018 compared to 2017 as well as significant construction works ongoing at the terminal throughout the year, we saw an increase of overall gas consumption of 2% per passenger. To reduce our gas consumption, we've started an airport wide boiler upgrades to more efficient boilers; the upgrades have been completed in Cargo Centre and Fire Station with the Terminal building boiler upgrades due to be completed in early 2019.

Water

As part of the terminal expansion, we've ensured that all new washroom facilities have been installed with water efficient fixtures.

Planning and Development

Through its Local Plan, Luton Borough Council (the Council) sets out local planning policies and identifies how land is used, determining what will be built where. The Council also is responsible for the Local Transport Plan (LTP) providing policies, strategies and schemes primarily for Luton, though the LTP does refer to strategic transport and infrastructure and other cross boundary matters for the whole conurbation (Dunstable and the Houghton Regis area).

Local Plan

The Luton Local Plan (2011-2031) was adopted in November 2017. The adopted Local Pan is a strategic document setting out the vision, objectives and spatial planning strategy for the whole of Luton Borough Council's area for the period up to 2031.
It comprises the following document and accompanying plans:

- Luton Local Plan (2011-31), November 2017
- policies map
- town centre inset

These can be viewed by visiting the following page on the Council's website:
https://www.luton.gov.uk/Environment/Planning/Regional%20and%20local%20planning/Pages/Local%20Plan%202011%20-%202031.aspx

The Local Plan includes Policy LLP6 that covers the London Luton Airport strategic allocation, an area of 325 hectares, identified on the policies map, which includes land within the airport boundary, Century Park and Wigmore Valley Park.

Planning Applications

The permission to expand the airport to allow an increase to up to 18 million passengers per annum (mppa) , granted in 2014 (Council reference 12/01400/FUL), has been fully implemented.

Work commenced on the construction of the Direct Air Rail Transit (Luton DART) system in April 2018 following the grant of planning permission in July 2017 (ref: 17/00283/FUL). It is anticipated that the DART linking Luton Airport Parkway station and the airport terminal will be open in 2021.

In order to facilitate the construction of the DART, planning permission was granted in December 2018 for the development of land for a temporary period for the construction and prefabrication of the Gateway Bridge (the bridge that will take the DART over the A1081)(ref: 18/01049/FUL).

Rather than the spoil generated by the developments at the airport being taken off site to landfill, permission was granted in February 2018 for the reuse of over 330,000 cubic metres of spoil on six sites on the airport, changing the gradients of land and levelling off areas within the airport perimeter (ref: 17/02219/FUL).

The airport operator can carry out some development without requiring planning permission by virtue of permitted development rights granted to them by the Government under Schedule 2, Part 8, Class F of the Town and Country Planning (General Permitted Development) Order 2015. In 2018 it was confirmed that a number of developments could be carried out as permitted development, these included:

- Proposed works to modify the alignment of Taxiway Foxtrot and enable a specific de-icing area adjacent to that taxiway (ref: 18/00001/GPDOPD).
- The construction of a multi-storey car park (MSCP2) and new permanent drop off zone in the central terminal area of the airport (ref: 17/00004/GPDO).

Whilst not being development on the airport there have been a number of proposals that are airport related, namely:

- Planning permission was granted in July 2018 for the demolition of the existing buildings at Prudence Place and the erection of a 92 bedroom hotel with under croft and surface parking (ref: 18/00062/FUL).
- A hybrid planning application, at Bartlett Square, for the erection of a hotel, two office buildings, ancillary retail and a multi-storey car park, together with associated courtyard and public realm works was recommended for approval in November 2018 and a decision is due to be issued upon completion of a legal agreement (ref: 18/00271/EIA).

Hotel developments

The Luton hotel market is very much dominated by airport related demand, from passengers and crew, with the Luton Hotel Study (July 2015) indicating that demand was likely to continue to grow.

The following hotel developments have been granted planning permission, are being implemented, or are still under consideration, since the table in the 2016 AMR was produced –

Site address	Current status of application	Number of bedrooms
Bartlett Square	Planning permission for 172 bedroom hotel recommended for approval subject to the signing of a legal agreement in November 2018	172
Napier Gateway (part of the Napier Park site)	Mixed development including 209 bedroom hotel (still to be implemented)	209
Power Court (Town Centre)	Outline application for football stadium and associated infrastructure submitted in 2016 including a hotel (resolution to grant)	150
Land adjoining junction 10 to junction 10A of M1	Outline application for mixed use development submitted in 2016 including a hotel (resolution to grant)	350
Former Honda Garage, Cumberland Street (Town Centre)	Five to seven storey hotel granted planning permission in September 2017 (still to be implemented)	202
Phoenix House (Town Centre)	Change of use to hotel granted planning permission March 2017 subject to the completion of a s106 agreement (still to be completed)	78
Prudence Place, Proctor Way	Demolition of existing buildings and erection of four storey hotel with undercroft parking granted permission in July 2018 (still to be implemented)	92

National Aviation Policy

The Aviation Policy Framework (APF) published by the Coalition Government in March 2013 set out the Government's policy on aviation. The APF focuses on the benefits of aviation to the UK economy as well as its environmental impacts.

The 'Airports National Policy Statement: new runway capacity and infrastructure at airports in the south-east of England' (the Airports NPS) was designated on 26 June 2018. The Airports NPS provides the primary basis for decision making in relation to the Development Consent Order (DCO) for a new runway at Heathrow, whilst also being an important and relevant consideration in respect of applications for new runway capacity in London and the south east of England.

The Airports NPS sets out:

- The Government's policy on the need for new airport capacity in the South East of England;
- The Government's preferred location and scheme to deliver new capacity (the Heathrow Northwest Runway); and
- Particular considerations relevant to a development consent application to which the Airports NPS relates.

The Airports NPS includes policies that will be important and relevant for any nationally significant infrastructure project (NSIP) related to airports in the south east of England. In this regard it is important to note that between 25 June and 31 August 2018 London Luton Airport Limited (LLAL), the owner of the airport, consulted on its plans to expand the airport by making better use of the existing runway which could include an increase in passenger numbers of up to 36-38mppa. Such an increase would constitute a NSIP and result in the submission of an application for a DCO to be determined by the Secretary of State. The consultation outlined four options that LLAL were considering and included a response questionnaire.

Local Transport Plan (LTP)

The current LTP is the third local transport plan produced by the Council in April 2011, which sets out how the Council will deal with transport matters in and around Luton. It comprises two parts, namely:

- A long term Transport Strategy up to 2026. With regard to the transport affecting the, airport this sets out anticipated passenger numbers of between 15.5mppa and 18mppa by 2026, together with an additional 3,000 employees; and
- The Implementation Plan. This includes a number of key elements that are relevant to the airport, such as: a focus on smarter choices and travel by more sustainable modes; implementation of a new entrance from the north to Luton Airport Parkway Station; and an extension of Airport Way to serve planned employment sites to the east of the airport.

The Luton DART was not specifically mentioned in the LTP, but it will serve to improve access from Luton Airport Parkway Station to the airport as well as encouraging a modal shift away from the use of private cars to public transport.

The LTP strategy also refers to the role of the Airport Surface Access Strategy (ASAS) in promoting sustainable travel to the airport for both passengers and employees, and the Council will work with the airport operator to achieve this.

ANNEX J - AIRPORT ANNUAL MONITORING REPORT 2019

Annual Monitoring Report 2019

Contents

Foreword

Last year was another record-breaking year for London Luton Airport, as we approached 18 million passengers passing through the airport.

With the increasing number of people using the airport, we have really seen the benefit of our £160m transformation for passengers, who have welcomed the greater selection of shops and a more spacious interior, alongside many operational improvements.

It's not just our passengers who have benefitted from the upgraded airport terminal. We are proud of our contribution to the local economy and the thousands of jobs we support in Beds, Herts and Bucks.

I'm also acutely aware that we have a responsibility not only to support the local community, but to also mitigate any impact of our operation on the community and the environment. This is of course continually evolving, but it's why we have the most stringent noise controls of any major UK airport and continue work constructively with our communities and stakeholders.

Throughout 2019, we welcomed more than 150 local residents to our drop-in noise surgeries, as well as attending local community meetings including the Bedfordshire Association of Town and Parish Councils AGM and Hertfordshire Parish Council Conference. We also held separate meetings with individual parish councils, local campaign groups and other local residents to discuss noise. While we saw the total number of complaints increase by more than 50% in 2019, the total number of people who complained fell by 4% and there was a 9% drop in the number of new complainants.

As I write this, coronavirus is taking its toll on the aviation sector globally, and LLA is not immune to this. The impact of the pandemic has been severe, and it will take the airport time to recover and for us and our passengers to adjust to a new way of operating. Despite this, I have no doubt that the airport will not only rise to this challenge, but that we will return stronger than ever.

London Luton Airport is key driver for the economy in Beds, Herts and Bucks and like all airports, it will play a pivotal role in getting the region and the country back up and running once the outbreak is finally contained.

Neil Thompson
Operations Director
London Luton airport

Key Monitoring Indicators

Parameter		2019	2018
Total Aircraft Movements	↑	141,481	136,270
Day Movements (07:00 - 23:00)	↑	124,306	119,937
Night Movements (23.00 – 07.00)	↑	17,175	16,333
Early Morning Movements (06.00 – 07.00)	↑	5,968	5,794
Total Scheduled Passengers	↑	17,751,946	16,223,039
Total Charter Passengers	↓	248,023	358,811
Total Passengers	↑	17,999,969	16,581,850
Number of Destinations	↓	141	147
Number of New Airlines	↑	1	0
Number of New Routes	↓	19	33
Westerly/Easterly Runway Split (%)	-	70/30	63/37
Night Quota Used (3,500 Limit)	↑	3159.00	3105.75
Average Ratio of Aircraft movements % (day/night)	-	88/12	88/12
Track Violations	↑	53	33
Departure Noise Infringements (Day)	-	0	0
Departure Noise Infringements (Night)	-	0	0
Fines transferred into Community Trust Fund	↑	£58,000	£29,500
24hr Continuous Decent Approach (% achievement)	↓	91%	92%
No. Departures Recorded at ≥ 85 dB(A) during Day (Night)	-	0 (0)	0 (0)
No. Departures Recorded at ≥ 76 dB(A) during Day (Night)	↑	7,749 (1,056)	6,604 (1,025)
No. Departures Recorded at ≥ 70 dB(A) during Day (Night)	↑	48,567 (6,333)	46,344 (5,663)
Night Noise Contour Area (48 dB $L_{Aeq, 8h}$)	↑	44.2km²	40.2km²
Population within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	21,250	18,450
Dwellings within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↑	8,950	7,800
Noise Complaints	↑	12,735	8,275
Complainants	↓	664	691
Number of New Complainants	↓	357	394
Largest Source of Complaints	-	Deps. West	Deps. West
Number of PM_{10} exceedances	-	0	0

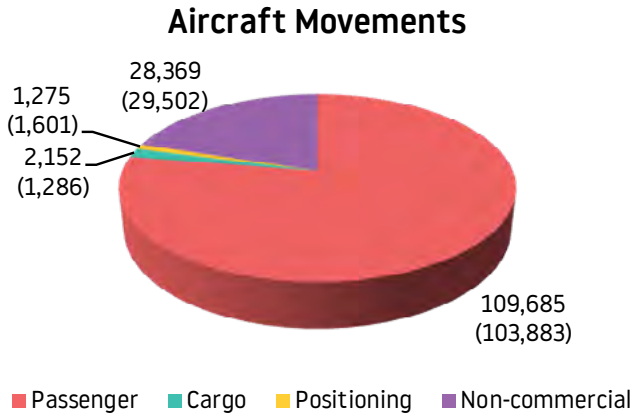
Air Traffic Data

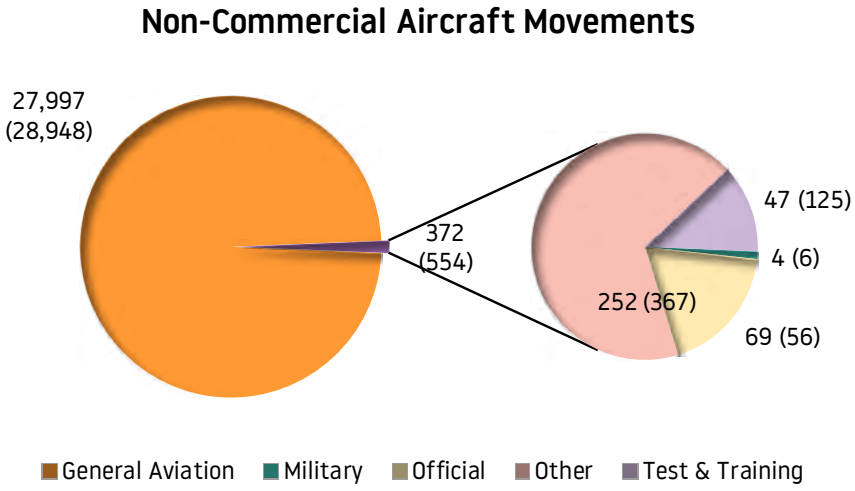
Aircraft movements

LLA handled a total of 141,481 aircraft movements during 2019, an increase of 3.8% compared to 2018. An aircraft movement is the take-off or landing of any aircraft from the airport.

The majority of aircraft movements were passenger flights at 109,685 movements. This includes commercial flights by executive aircraft (compared with 103,883 in 2018). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2018 data is shown in brackets.

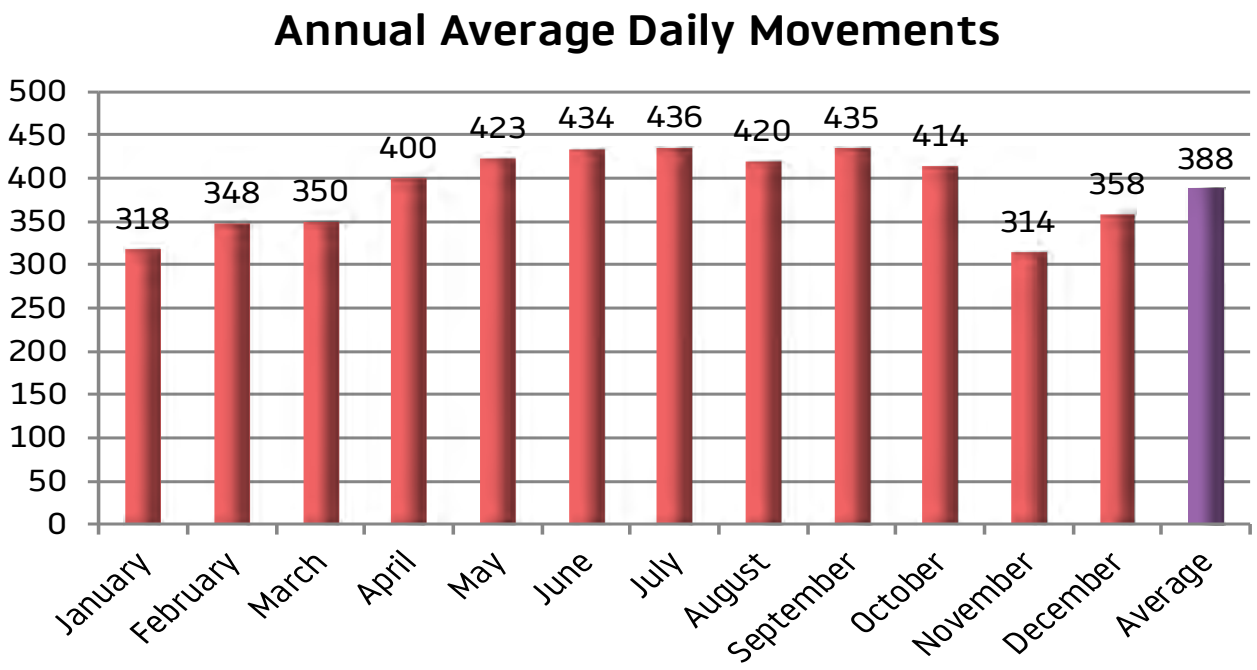




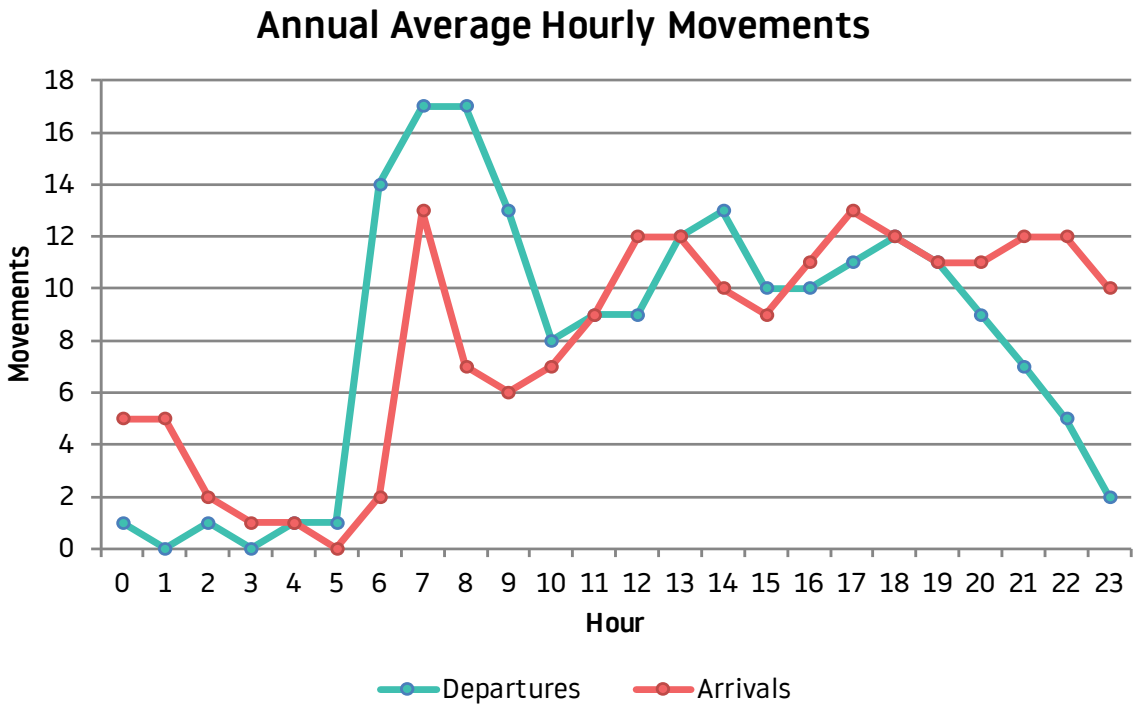
Movement Classification

Commercial – operating for hire or reward and includes cargo, passenger and positioning flights
Non-Commercial – not operating for hire and reward
Cargo – aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories
General Aviation – private aircraft, helicopters and business jets not operating for hire or reward
Passenger – commercial passenger flights, including executive aircraft
Positioning – typically empty flights to/from other airports
Military – flights on military business
Official – flights solely for official purposes by British or foreign civil government departments
Other – flights coming for maintenance and or departing aircraft that have made an unscheduled return to base
Test & Training – training flights involving aircraft and also flights following or during aircraft maintenance

The graph below illustrates that the busiest time of year is May - October. **Our busiest day of the year was 24th May with 487 aircraft movements.** In comparison, winter months are the quietest. On average there were 388 movements per 24 hours (compared to 373 in 2018).



The busiest time on average during 2019 for departing aircraft was 07:00-08:00 hrs, with another peak between 13:00-14:00. The average busiest time for arrivals was 07:00-08:00 hrs and 17:00-18:00 hrs. The graph also highlights a low level of average movements during the hours of 00:00-06:00 hrs.



Passenger data

Scheduled	Charter	Total
•**17,751,946** passengers •9.4% increase compared with 2018 •**164** average passengers per flight	•**248,023** passengers •30.9% decrease compared with 2018 •**185** average passengers per flight	•**17,999,969** passengers •8.6% increase compared with 2018 •**164** average passengers per flights

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 17,999,969 passengers used LLA during 2019; 17,751,946 on scheduled flights (98.6%) and 248,023 on charter flights (1.4%). This represents an increase in passengers of 8.6% compared with 2018.

Domestic	EU	Non-EU	Total
• **1,197,578** •0.8% increase compared with 2018	• **14,197,633** •8.1% increase compared with 2018	• **2,604,758** •15.0% increase compared with 2018	• **17,999,969** •8.6% increase compared with 2018

Cargo

Cargo operations represented just under 2% of all air transport movements at London Luton Airport in 2019. Night movements accounted for 57% of total cargo movements, which is a reduction compared to 2018. These were primarily postal flights or intra-European express delivery services moving time sensitive and perishable freight such as fresh food, medication and urgently needed technical equipment vital to supporting and sustaining economic growth. The flights carrying more general, less time-sensitive cargo already operate outside of the night-time period. This would include Formula 1 cars, live animals, clothing, machine parts and

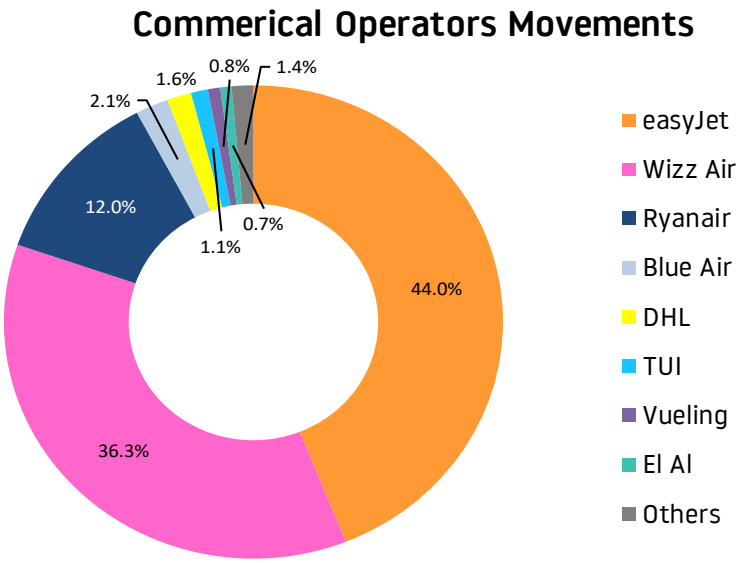
Operator	Movements			Tonnes
	Day Movements	Night Movements	Total	Total
2019	**1,210**	**1,618**	**2,828**	**36,906**
2018	706	1,582	2,288	27,096
2019/2018 comparison	+70%	+2%	+24%	+36%

N.B. The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because 1% of total cargo tonnage was carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in the Aircraft Movements piechart which shows dedicated cargo movements.

Airlines

London Luton Airport works very closely with its airline partners. The table below provides the movement statistics by commercial operators.

Operator	Movements
easyJet	49,160
Wizz	40,636
Ryanair	13,393
Blue Air	2,384
DHL	1,761
TUI	1,224
Vueling	898
El Al	813
Others	1,568
TOTAL	**111,837**



N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.

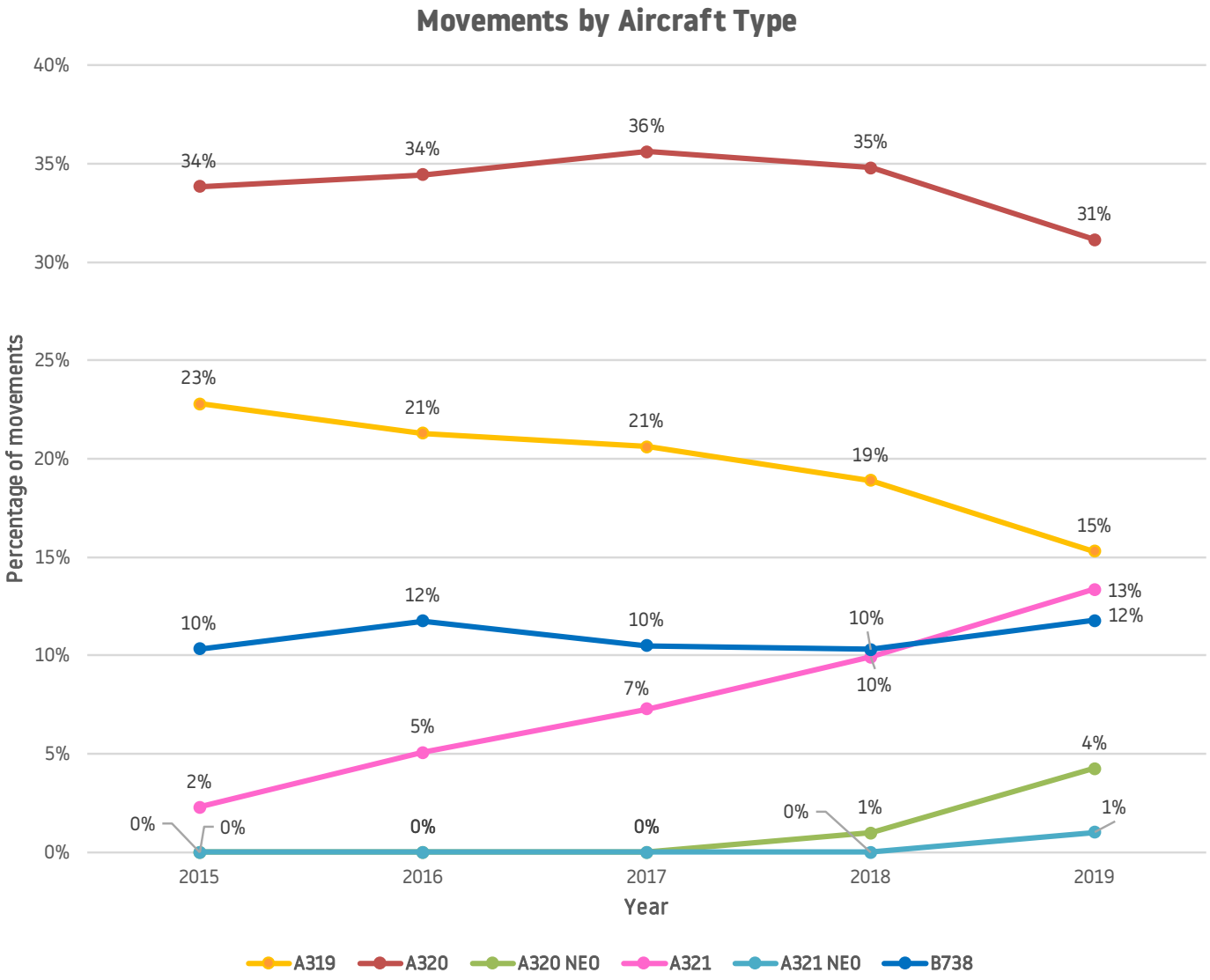
Movements by aircraft type

Aircraft Type	Movements	% of Total movements
A306	1,758	1.2%
Airbus A319	21,642	15.3%
Airbus A320	44,074	31.2%
Airbus A320 NEO	6,013	4.3%
Airbus A321	18,922	13.4%
Airbus A321 NEO	1,434	1.0%
Airbus A330	66	-
Boeing B737-300	152	0.1%
Boeing B737-400	598	0.4%
Boeing B737-500	182	0.1%
Boeing B737-700	227	0.2%
Boeing B737-800	16,683	11.8%
Boeing B737-900	550	0.4%
Boeing B757	1,414	1.0%
Boeing B767	26	-
Boeing B777	64	-
Boeing B787	40	-
Canadair Global Express GLEX	3,562	2.5%
Cessna Citation Excel C56X	2,435	1.7%
Canadair Challenger CL30	291	0.2%
Canadair Challenger CL60	1,622	1.1%
Gulfstream 3,4 & 400 series GLF3/GLF4	1,122	0.8%
Gulfstream 5 and 500 series GLF5	1,668	1.2%
Gulfstream 650 GLF6	1,590	1.1%
Embraer Legacy 600	459	0.3%
Cessna Citation Jet C525	76	-
Dassault Falcon FA7X	1,067	0.8%
Helicopter	578	0.4%
Other aircraft	13,160	9.3%
TOTAL	**141.475**	100%

The aim of this section is to provide the number of movements for a specific aircraft type. The groups are conditional, assuming that these are the typical aircraft types used for passengers, cargo and general aviation movements. As a result the number quoted here within this section will differ from those within the Aircraft Movements Section.

[1] - Winglets and sharklets are small aerodynamic surfaces mounted almost vertically at the wingtips. There is no difference between winglets and sharklets; the term sharklet is just the name used by Airbus for the winglets fitted to their aircraft.

The graph below shows the percentage of the most popular type of movements by aircraft type at LLA. The data goes back five years for data comparsion purposes.



Destinations

London Luton Airport has seen continuous passenger growth during 2019, making 2019 the busiest year ever in the airport's history.

Our airlines fly to 141 destinations across 41 different countries.

The table below shows the number of movements on our busiest routes in 2019.

Destination	Number of Movements
Amsterdam	6,145
Bucharest-Otopeni	3,473
Geneva	3,236
Barcelona	3,117
Tel Aviv	3,075
Budapest	2,994
Dublin	2,657
Nice	2,627
Belfast	2,580
Malaga	2,568

New Routes 2019

Destination	Launch	Airline
Krakow	04-Apr-2019	Wizz Air
Thessakiniki	02-May-2019	TUI
Heraklion	02-May-2019	TUI
Enfidha	03-May-2019	TUI
Thessaloniki	01-Jul-2019	Wizz Air
Bergen	01-Jul-2019	Wizz Air
Porto	02-Jul-2019	Wizz Air
Turku	02-Jul-2019	Wizz Air
Kiev	01-Sept-2019	Wizz Air
Stavanger	16-Sept-2019	Wizz Air

Destination	Launch	Airline
Oslo	16-Sept-2019	Wizz Air
Catania	17-Sept-2019	Wizz Air
Sarajevo	24-Sept-2019	Fly Bosnia
Moscow	01-Oct-2019	Wizz Air
St Petersburg	01-Oct-2019	Wizz Air
Krakow	27-Oct-2019	Ryanair
Prague	28-Oct-2019	EasyJet
Seville	09-Nov-2019	Ryanair
Castellon	09-Dec-2019	Wizz Air

Routes Ending 2019

Whilst there were 19 new routes launched from LLA in 2019, 21 routes ended.

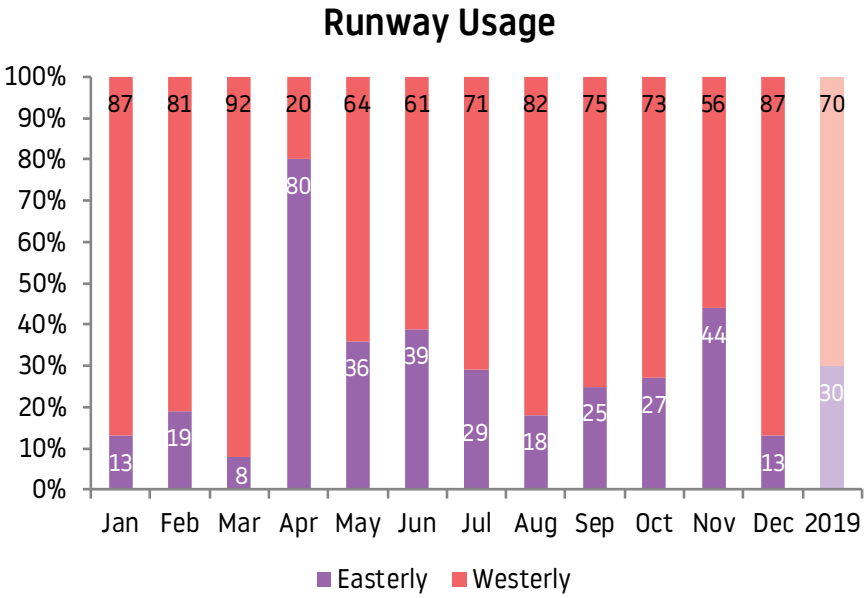
More information about our destinations can be found on the airport's website:http://www.london-luton.co.uk inside-lla/destination-map

Runway usage

Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. South westerly and westerly winds prevail for much of the year, typically around 70 per cent of the time.

Wind speeds and directions recorded at higher altitudes can vary considerably from those recorded at ground level. The position of the wind is under constant review by NATS which is why the operation can change direction more than once in a day. However it is also not unusual for the runway to operate in the same direction for several weeks.

A monthly breakdown is shown, highlighting unusually prolonged spells of westerly operations over the summer and increased levels of easterly operations over Q2 of 2019.



Year	Easterly	Westerly
2019	**30%**	**70%**
2018	37%	63%
2017	21%	79%
2016	30%	70%
2015	28%	72%
Average	**29%**	**71%**

The runway split during 2019 was 30% easterly and 70% westerly (compared to 37% / 63% in 2018). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 29% easterly and 71% westerly.

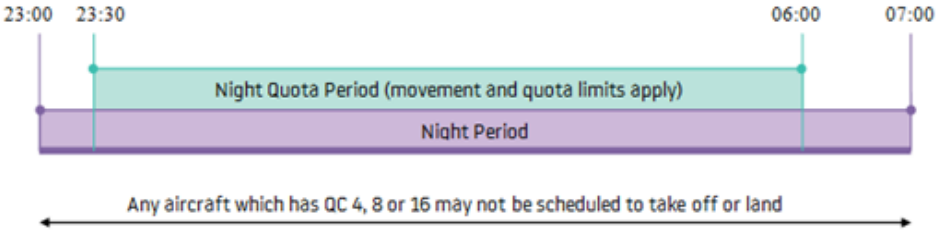
Night Flights

Night Flying Restrictions

As from 1st April 2015 London Luton Airport introduced new night restrictions as part of the planning conditions imposed by Luton Borough Council.

These restrictions have been put in place to limit and mitigate noise disturbance from aircraft operating at night, to prohibit aircraft of certain types from operating, as well as limiting the number of occasions on which aircraft may take off or land.

The night flying restrictions contain a 12 month period aircraft movement limit and a 12 month period quota count limit. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft



The table overleaf records the QC bands identified by the certified noise levels, and gives some typical example aircraft, some of which operate from LLA.

The 'Night Quota Period'
The 'Night Quota Period' is from 23:30 to 06:00 hours local, during which period aircraft movements (take-off or landing) are restricted by a limit on the number of movements with noise quotas as an additional measure.

Aircraft are certificated by the International Civil Aviation Organisation (ICAO) according to the noise they produce during specific certification tests conducted by the manufacturer. They are classified separately for both take off and landing. The points are then allocated to different aircraft types according to how noisy they are.

The 'Early Morning Shoulder Period'
The 'Early Morning Shoulder Period' is 06:00 to 07:00 hours local. During this period aircraft movements (take-off or landing) are restricted by a limit on the number of movements (the same as the Night Quota Period).

Aircraft movement and quota count limits (per 12 month period)

Condition 9(iii) requires that for the Night Quota Period (2330 - 0600) the following limits shall not be exceeded:

- Total annual movements by aircraft per 12 month period shall be limited to 9,650;
- The total annual noise quota in any 12 month period shall be limited to 3,500.

Certificated noise level (EPNdB)	Typical aircraft	Quota Count
96 to 98.9	B732, MD10	QC 4
93 to 95.9	B772, A306, A332	QC 2
90 to 92.9	A320/A321, some B738, B752, B788	QC 1
87 to 89.9	A319/A320, some B734, B738, B788	QC 0.5
84 to 86.9	A319/A320, GLEX, FA7X/F900/F2TH	QC 0.25
Less than 84	Challenger series (eg CL60), ATP, C525/C550 & A320 NEO	QC 0

Condition 9(iv) requires that for the Early Morning Shoulder Period (0600 - 0700) the total annual movements by aircraft in any 12 month period shall be limited to 7,000.

The table below provides total aircraft annual movements and noise quota per 12 month period and compares those against the limits set by planning conditions.

	Night Quota Period (2330 - 0600)		Early Morning Shoulder (0600 - 0700)
	Movements Limited to 9,650	Quota Count Limited to 3,500	Movements Limited to 7,000
Jan 2019	480	194.25	402
Feb 2019	447	180.25	358
Mar 2019	508	183.25	418
Apr 2019	816	266.25	606
May 2019	937	301.25	671
Jun 2019	873	320.75	585
Jul 2019	1,033	398.75	629
Aug 2019	1,003	361.75	575
Sep 2019	834	301.50	516
Oct 2019	896	292.25	516
Nov 2019	449	167.25	335
Dec 2019	568	191.50	357
Total for preceding 12 months	**8,844**	**3,159.00**	**5,968**

There were 53 QC 2 aircraft movements in 2019 during the night time period; 35 were departures by Airbus A300-600 aircraft, 15 were departures by Airbus A330-200 aircraft, 1 was an arrival by an AgustaWestland AW189 helicopter and 2 were departures by Boeing 777-200 aircraft. The two movements by a Boeing 777-200 aircraft were operated by El Al as part of a childrens charity flight.There were no night time aircraft movements with a QC value greater than 2 in 2019.

Marginally Compliant Chapter 3 aircraft

Taking the year as a whole, of the 140,028 movements where Chapter 3 categorisation is applicable, 4 are known to be marginally compliant. These movements were by a Gulfstream IIB and a Gulfstream 3. 2 aircraft movements were by aircraft with unknown classification. These movements were by an Antonov AN-124.

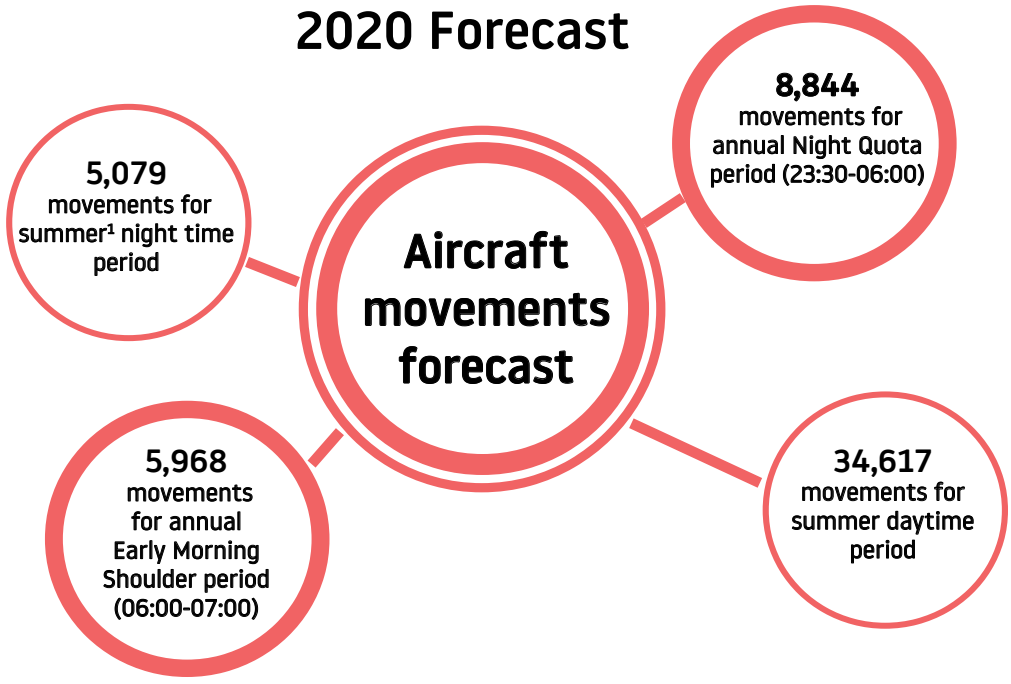
Day/Night ratio of movements

There were 17,175 night movements during 2019 (compared to 16,333 in 2018, a increase of 5%), an average of 47 movements per night (compared to 45 last year). Arriving aircraft accounted for 56% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the airport at night, between 23:00 hrs and midnight. 68% of total night departures took off between 0600 - 0700 in the morning.

The average ratio of total aircraft movements during 2019 was 88% day / 12% night (same as 2018).

2019	Day Movements (0700 - 2259)	Night Movements (2300 - 0659)		
	Day Movements	Night Quota Period (2330 - 0559)	Early Morning Shoulder (0600 - 0659)	Total Night Movements (2300 - 0659)
Departures	63,183	1,996	5,125	7,562
Arrivals	61,123	6,848	843	9,613
TOTAL	**124,306**	**8,844**	**5,968**	**17,175**

The figure below shows forecast aircraft movements for 2020, separated into daytime and night time periods. Please note, this forecast was created before COVID-19 in the UK.



[1] - Summer time covers period from 16th June until 15th September

Departing Aircraft

All propeller-driven aircraft with Maximum Take Off Mass (MTOM) over 5,700kg and all jet aircraft leaving London Luton Airport are required to follow specific departure routes known as Noise Preferential Routes (NPRs). These are established by consultation with the Safety and Airspace Regulatory Group (SARG) at the CAA and the London Luton Airport Consultative Committee, and they are designed to avoid flying over built-up areas wherever possible.

There are four Standard Instrument Departure (SID) routes for each runway – OLNEY, COMPTON, MATCH and DETLING.

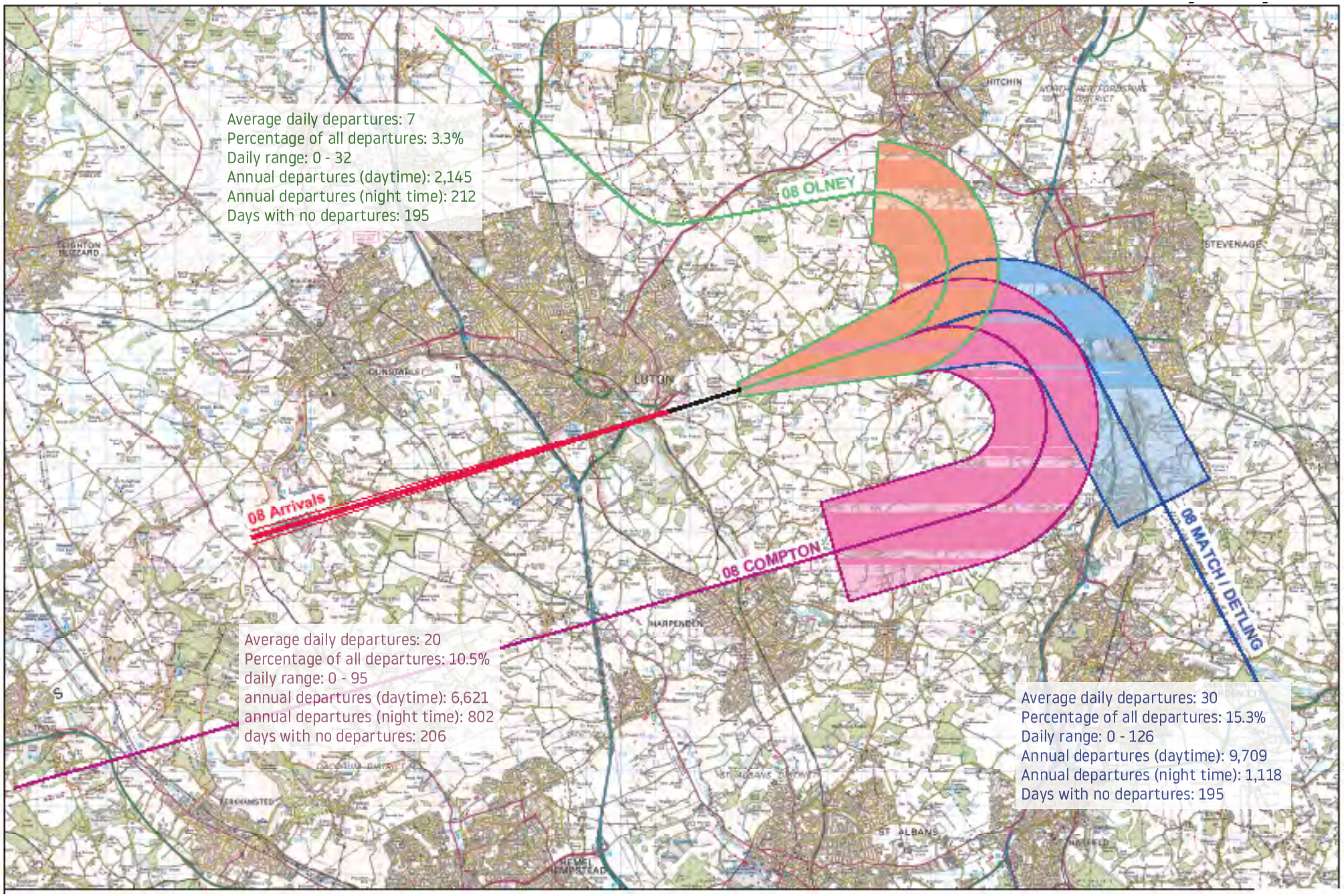
Associated with each NPR is a swathe of airspace extending 1.5km (1km for RNAV) each side of the NPR centre line, within which aircraft concentrate and are considered to be flying on track. Aircraft must follow the NPR controls applicable to the runway in use at that time.

In the UK, the obligations of Noise Preferential Routings for aircraft following conventional SIDs cease when a height of 3,000ft (between 07:00hrs to 22:59hrs local time) and 4,000ft (during night time, 23:00hrs to 06:59hrs local time) has been reached. The obligations of the RNAV NPR ceases when a height of 4,000ft has been reached at all times.

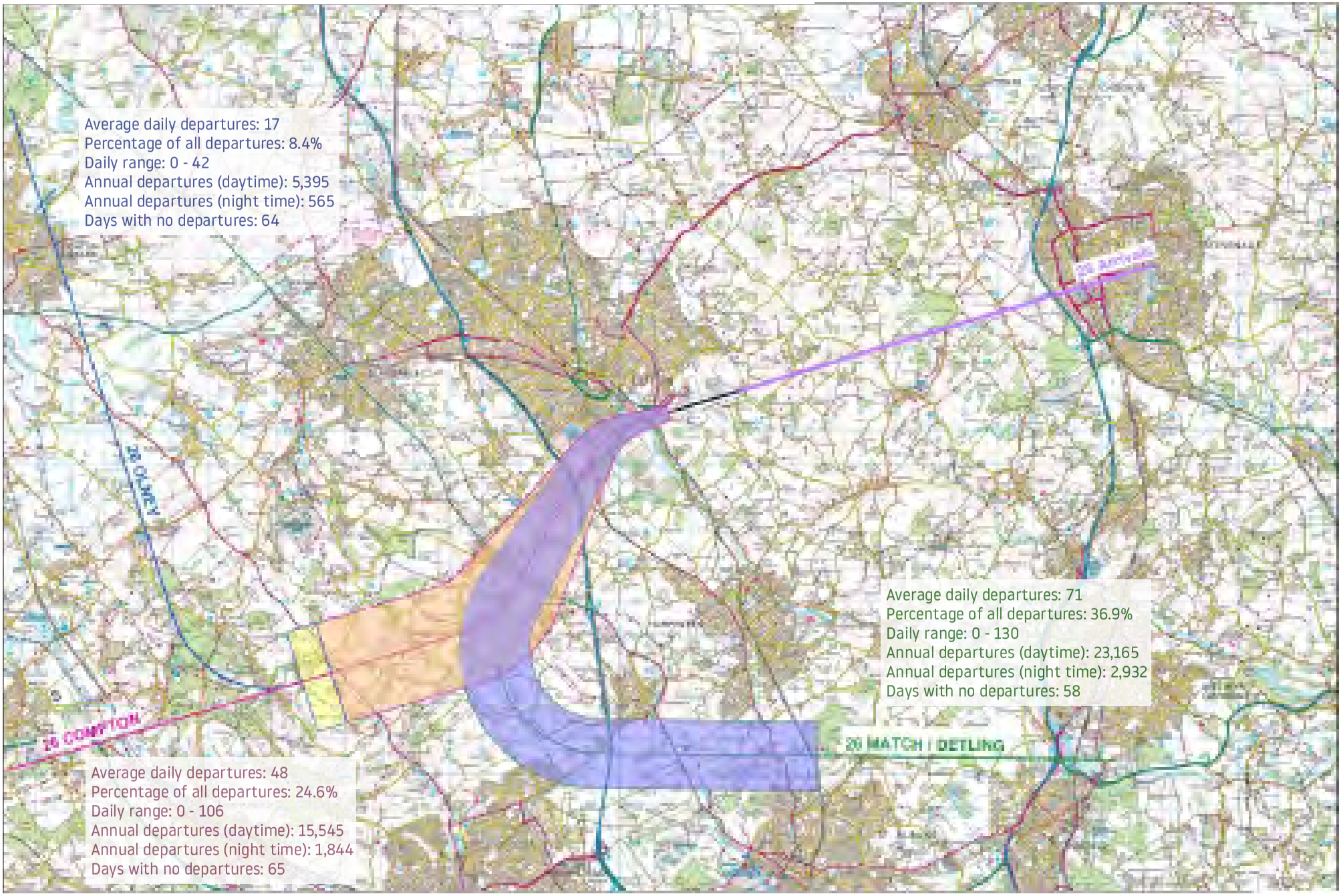
Once aircraft have reached the NPR restricted altitude they will be considered no longer on the Noise Preferential Route. At that stage the aircraft may be directed by Air Traffic Controllers onto a different heading in order to integrate with the overall flow of traffic, this is known as vectoring. However on RNAV Match/Detling SID aircraft should not be vectored before the railway line between St Albans and Harpenden, unless this is required for safe separation from other aircraft or for other safety issues such as avoiding adverse weather.

Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton Airport with detailed information about each departure route.

Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



On Track performance

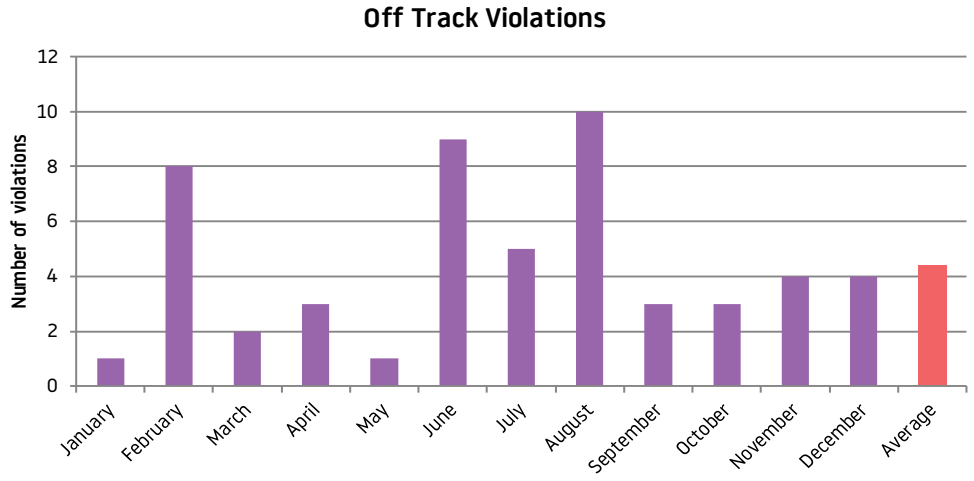
On the 1st April 2015 London Luton Airport implemented a Track Violation Penalty System as part of the noise related planning conditions. Using the airport's Aircraft Noise and Track Monitoring System, the Flight Operations Team evaluates the radar tracks and investigates them with required input from Air Traffic Control (ATC) and airlines. A departure is deemed to have complied with the Noise Preferential Routing if the portion of flight below the appropriate vectoring altitude is flown wholly within the Lateral Swathe (LS). Where the aircraft is clearly flying outside the LS, the aircraft is identified as causing a "possible" track violation and is subject to a nominal fine. This money is transferred to our Community Trust Fund which awards grants to community projects.

From 1st April 2018, the penalty was increased to £1,000 for a daytime violation (07:00-22:59hrs) and £2,000 for a night time violation (23:00-06:59hrs).

As always, safety is paramount and there may be cases which involve vectoring an aircraft sooner than at the NPR height restriction. If ATC identifies any valid justification that could explain the deviation from the track, then the operator causing it will be exempt from the fine. Valid justifications include:

- Safety or operational reasons, i.e ATC vectoring
- Weather avoidance due to thunderstorm activity (as instructed by ATC)
- Emergencies

The diagram below shows off-track violations by month in 2019. The track keeping performance was 99.6%. This calculation excludes deviations for weather, traffic avoidance and those identified as violations.



£58,000 the total of all collected fines transferred to Community Trust Fund

The breakdown of the violations by aircraft type is shown in the tables below.

A/C Type	Total № Violations
GLEX	12
GLF6	6
BE40, C550, C560, C56X, C680, C68A, CL60, CN35, F2TH, FA10, FA7X, GLF4, GLF5, H25B, LJ45, RJ1H, ZLJ4, ZLJ6	25
A319, A320, B734, B737, B738	9
A306	1
TOTAL	**53**

Airspace Change Proposal's

At LLA we are currently working on our next phase of airspace change which involves Performance Based Navigational procedures. In order to change any piece of airspace, the Civil Aviation Authority (CAA) require all airports to follow a regulatory process which is detailed in the CAA's publication CAP 1616. This document can be downloaded from here.

Furthermore, in line with the CAP 1616 process all documentation surrounding an Airspace Change Proposal will be uploaded to the CAA's dedicated portal which can be accessed at https://airspacechange.caa.co.uk/

Swanwick Airspace Improvement Project - Airspace Development 6 (SAIP AD6)

In 2019, LLA started an airspace change proposal with joint sponsors, NATS. The purpose of the airspace change is to reduce the complexity of LLA arrivals (and their interacting relationship with London Stansted Airport arrivals), in turn assuring a safe operation for the future. This involves a new holding stack for Luton arrivals.

In April 2019, LLA and NATS submitted the Stage 1 documentation to the CAA, this included design principles and the purpose of the change. This was after engagement with stakeholders (including community, airlines and general aviation). The CAA approved the work and allowed the airspace change to proceed.

Throughout the summer of 2019, work continued on the airspace design; NATS predominantly investigated the upper airspace (above 7,000ft) and LLA worked on the lower designs (below 7,000ft). These designs were then analysed through an initial options appraisal and design principle evaluation. This documentation was submitted to the CAA in November 2019, whereby the CAA approved LLA/NATS to continue.

This airspace change will continue throughout 2020 with a targeted implementation of May 2021. All updated documentation submitted to the CAA for this airspace change is available on the CAA's airspace change portal here.

Future Airspace Strategy Implementation - South (FASI-S)

As part of a National airspace change programme, as detailed in the Civil Aviation Authority's (CAA) Airspace Modernisation Strategy, London Luton Airport is required to update all of its arrival and departure procedures in a move towards satellite based technology. The programme is known as FASI-S and involves many airports and NATS.

The Future Airspace Strategy Implementation South (FASI South) programme in 2019 was co-ordinated by a new group known as ACOG (Airspace Change Organisation Group). However, each airport is an airspace change sponsor and responsible for their own designs and integrating these routes with other airports and upper airspace.

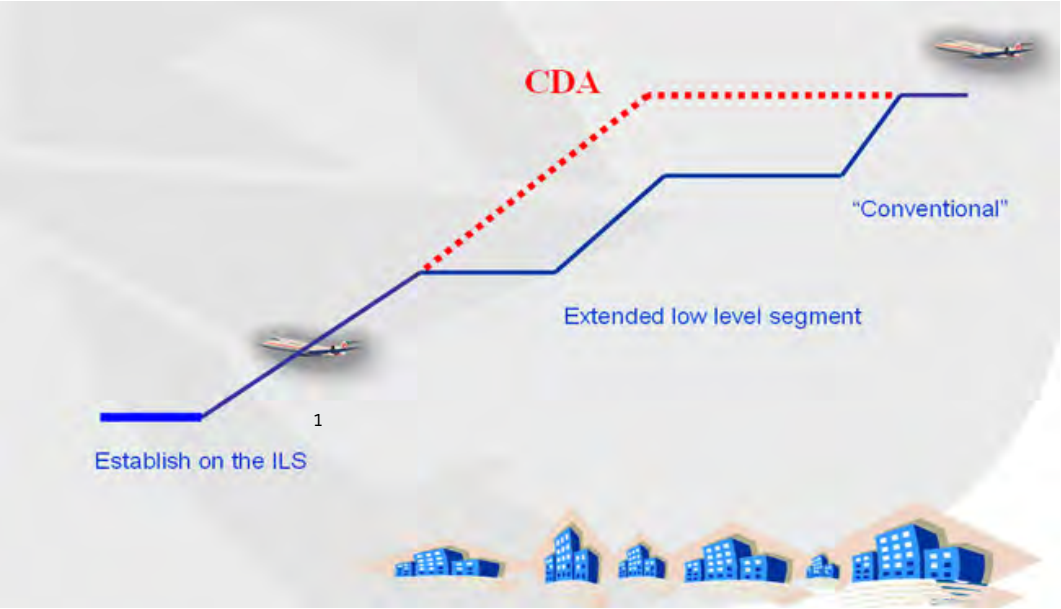
LLA started the FASI-S airspace change in November 2018 and submitted a Statement of Need to the CAA. In the Statement of Need LLA stated that we are using this opportunity to look at options of aircraft reaching higher altitudes sooner on departure and remaining higher for longer on arrival enabling significant environmental benefits.

In the first half of 2019, LLA conducted engagement with stakeholders (this included community, airline and general aviation stakeholders) regarding design principles and the purpose of the airspace change. This documentation was submitted to the CAA in May 2019 as part of the Stage 1 Gateway; this work was subsequently approved by the CAA. During the second half of 2019, work continued on designs based on the design principles submitted in the CAA gateway, this is Stage 2A of the CAP 1616 process working towards a Stage 2 gateway in July 2020.

All updated documentation submitted to the CAA for this airspace change is available on the CAA's airspace change portal here.

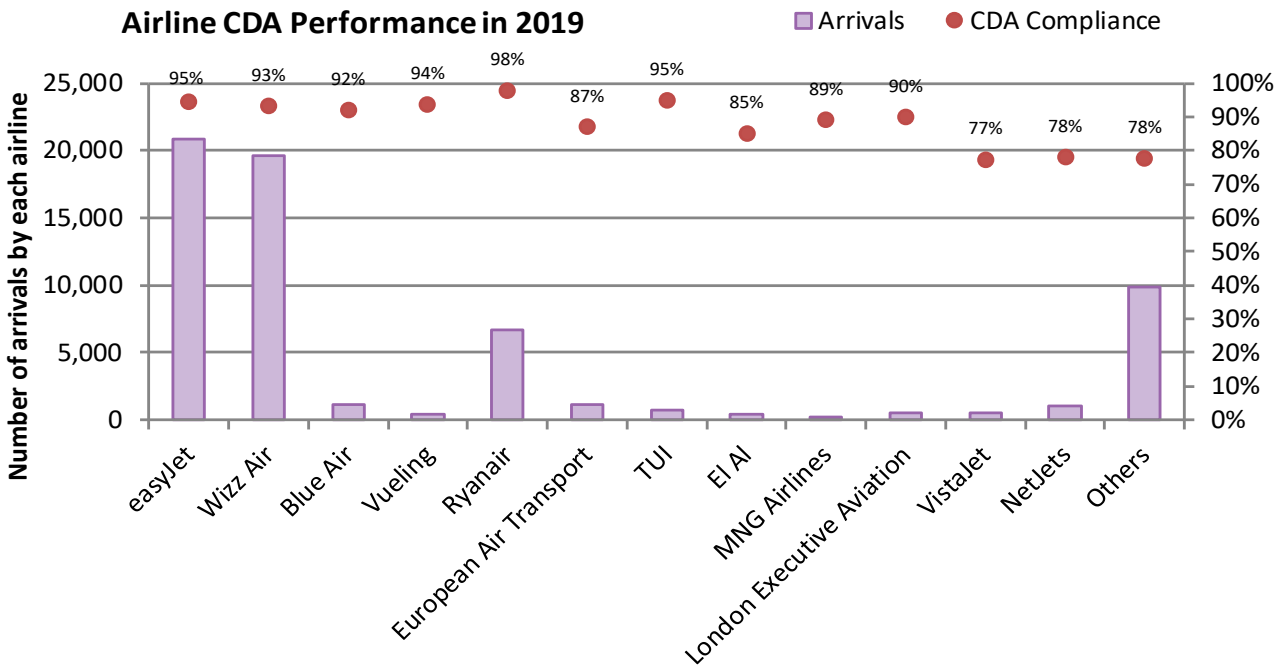
Arriving Aircraft

Although there are no set routes for arriving aircraft there are long established procedures to mitigate the disturbance that can be caused on approach to the airfield. One of the most successful measures is a noise mitigation procedure called Continuous Descent Approach (CDA).



The conventional approach involves descending in steps using engine thrust to level off. In a Continuous Descent Approach, or CDA, an aircraft stays higher for longer and descends at a continuous rate to the runway threshold therefore reducing periods of prolonged level flight at lower altitudes. With CDA less fuel is burnt, less emissions are produced but most importantly it reduces the noise by avoiding the use of engine thrust required for level flight.

The overall CDA achievement was 91% with several major LLA operators achieving higher performance; Ryanair, easyJet and TUI. The chart compares the level of CDA performance by our main airline operators.



[1] - An Instrument Landing System (ILS) is a ground-based instrument approach aid based on two radio beams which together provide lateral and vertical guidance to an aircraft approaching and landing on a runway.

Delayed Landing Gear Deployment

At LLA we always aim to work constructively with our local community in order to reduce the impacts of noise. In 2017, LLA conducted an aviation leading trial to reduce noise by from arriving aircraft. The trial, conducted during the summer, consisted of aircraft delaying the deployment of landing gear.

As an aircraft makes its final approach most noise is caused by the flow of air over the fuselage as drag is created to slow the aircraft down. Noise was measured along the arrivals flightpath to understand what, if any, reduction which could be achieved. Stevenage, Dagnall and Whipsnade were among those communities who saw the greatest benefit of between 2.7db and 3.4db

Following the successful trial, some operators have already changed their operating procedures to make this standard practice. During 2019, LLA continued to work with operators to encourage delayed landing gear deployment.

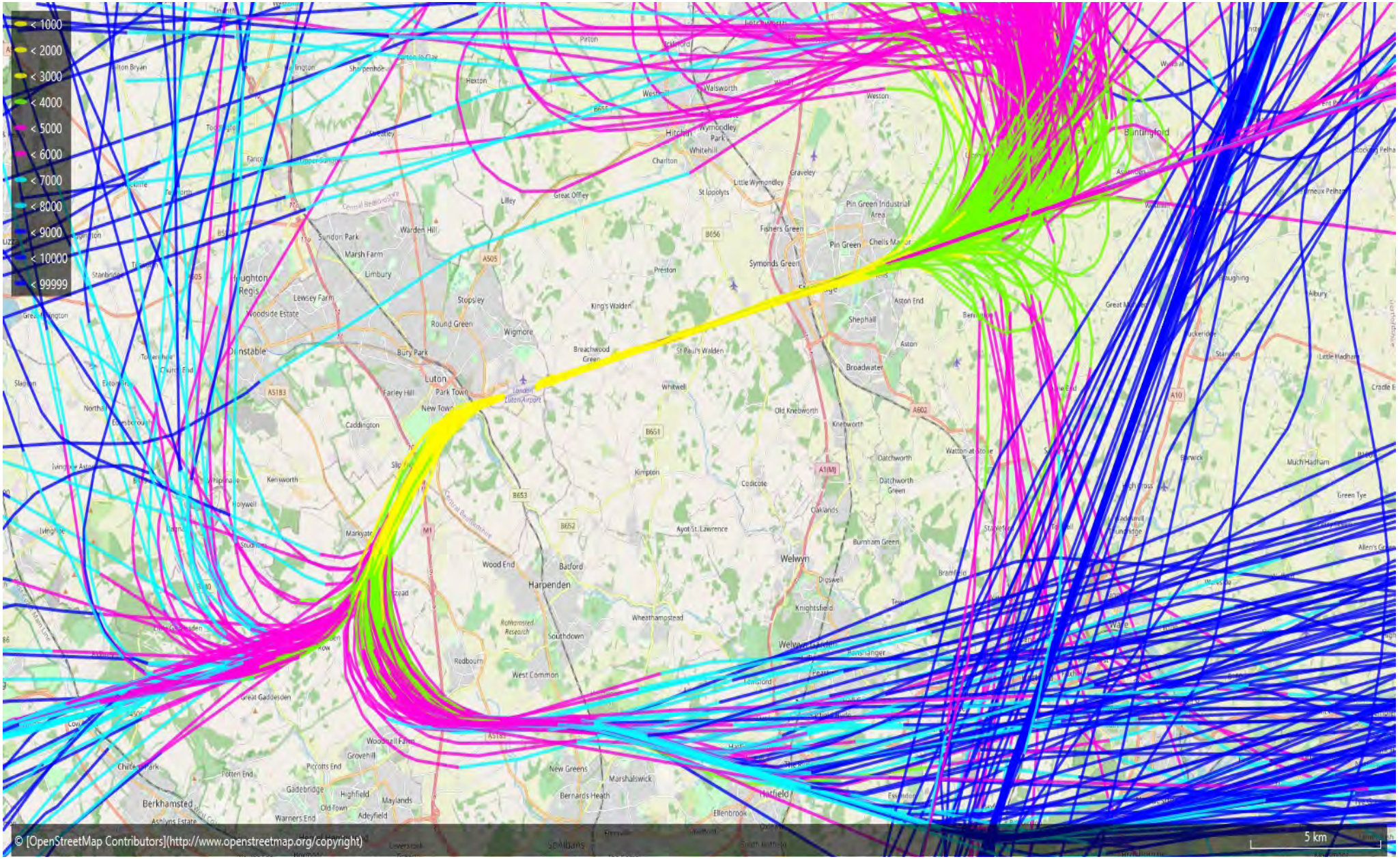
Departure and arrival flight tracks

Maps overleaf display typical 24 hour periods of both westerly and easterly operations. The colour coding from yellow to blue represents different altitude bands up to 10,000ft above mean sea level.

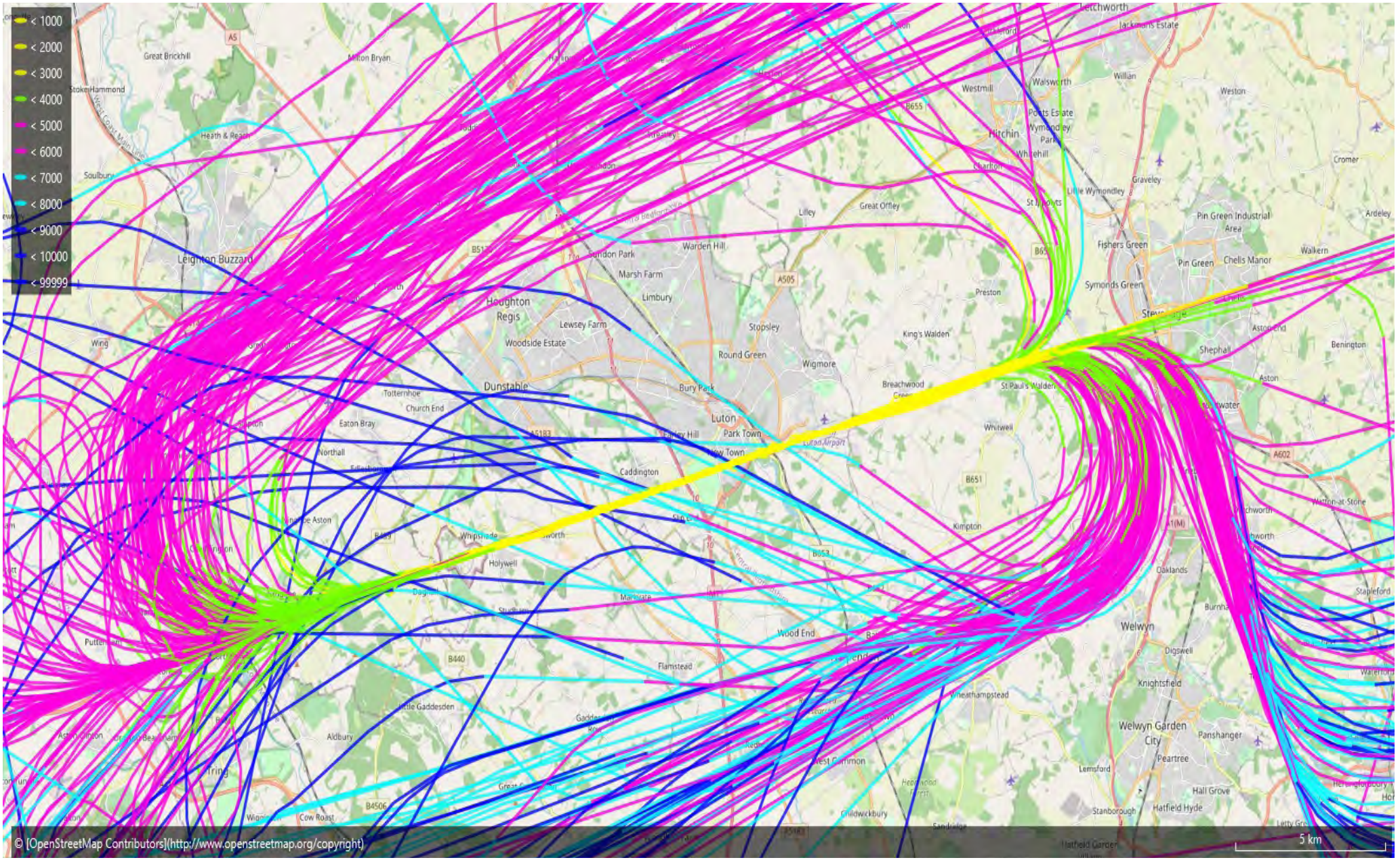
The last two maps display aircraft track density plots for the summer period 16th June - 15th September 2019. A track density plot is a map which displays the pattern of aircraft flight track passing over the region around the airport during a specific period. The system analyses the number of flights passing over each grid element of an array. The colour coding from purple to red represents the range 1 to over 147 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element was less than 1 flight. The red areas represent locations where operations are more densely concentrated.

It should be noted that London Luton Airport's aircraft movements integrate with a traffic network travelling to and from other airports in the region, and the South East is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton Airport and overflights from other airports have been omitted for clarity.

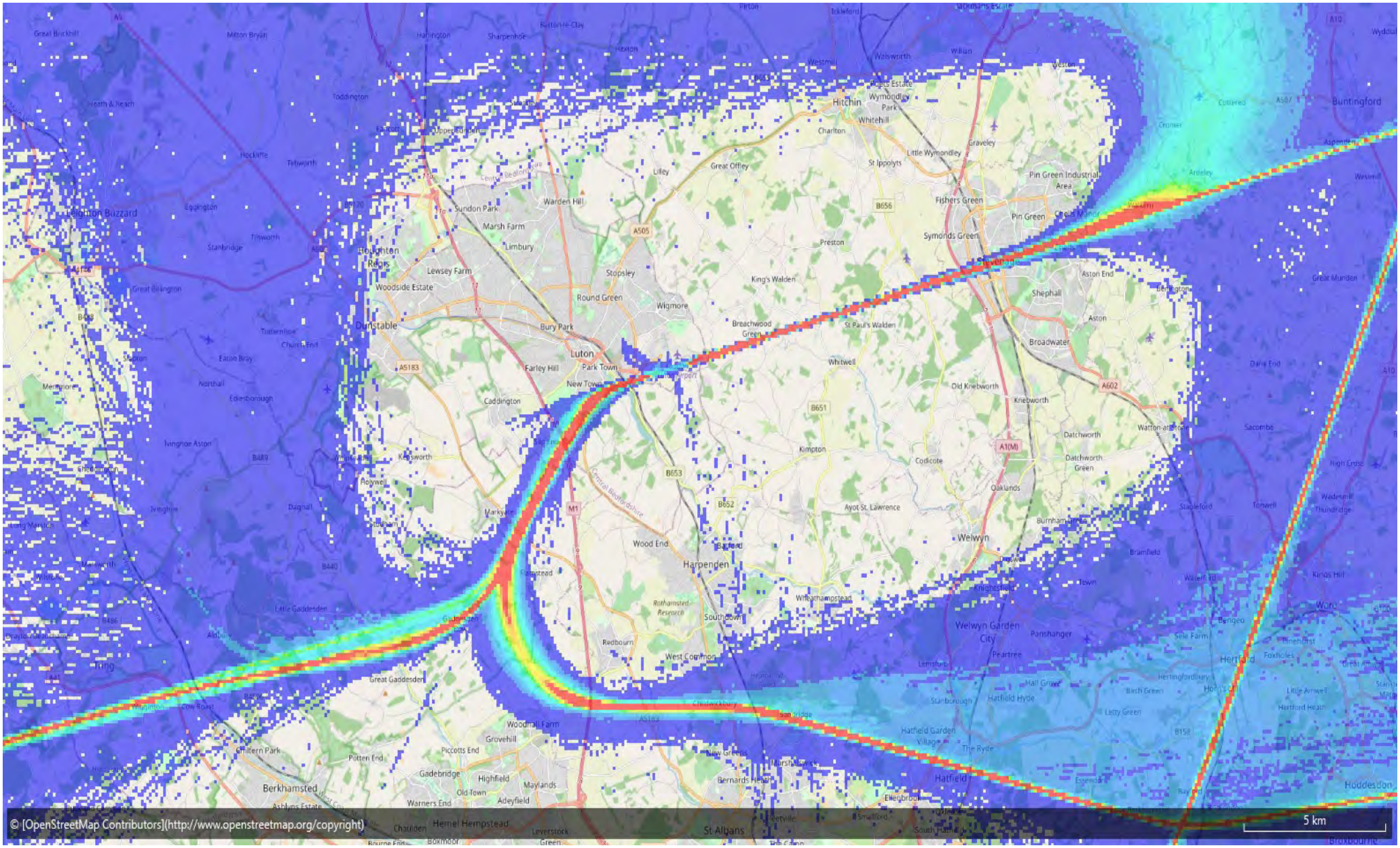
Westerly (26) Flight Routes (24 hour period)



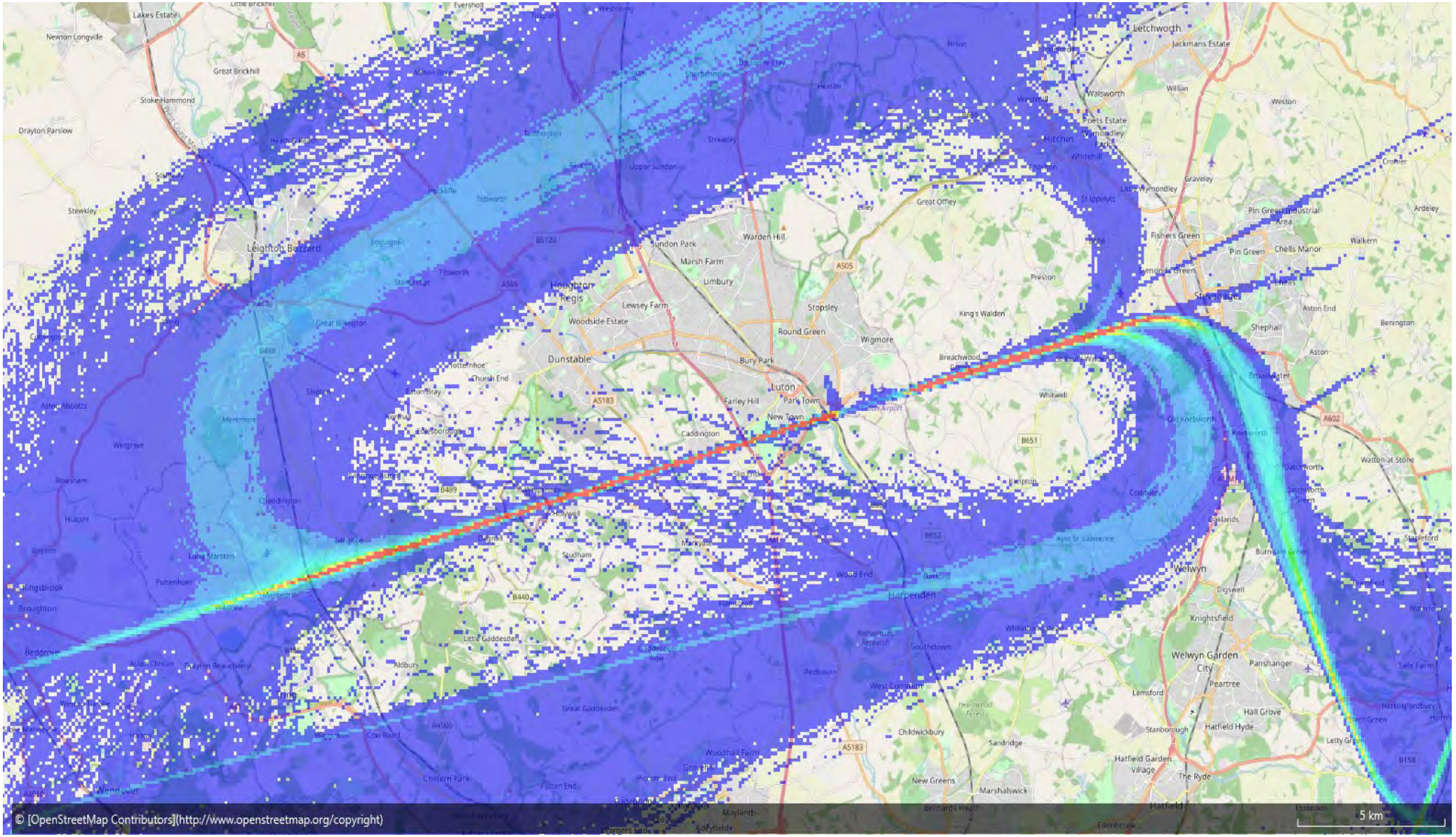
Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2018 - Westerly (26)



Plot Density - 16th June - 15th September 2018 - Easterly (08)



Aircraft Noise

Noise is generally defined as unwanted sound. Although it is recognised that noise perception is very subjective, there are a number of internationally recognised terms to describe and measure aircraft noise. Most airport related noise is created by aircraft approaching, taking-off and taxiing to and from the runway. The management and control of noise continues to be a major element of the airport's policy to constantly seek to minimise and mitigate our environmental impact.

How is noise monitored?

People who live close to airports or under flight paths can often feel strongly about the disturbance to their lives from noise. Effects of noise include general distraction, speech interference and sleep disturbance which can lead to annoyance and complaints.

At LLA we monitor noise and track keeping with a specialised system that is designed to monitor air traffic within a radius around the airport (set at around 25 miles), and generally up to an altitude of 12,000ft. It downloads noise data from three fixed noise monitors located 6.5km from the aircraft start of roll, at either end of the runway within the neighbouring communities. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area. New features and system enhancements continue to improve the functionality and capabilities available to the Flight Operations Department.

LLA has 7 portable noise monitors and 3 fixed noise monitors. During 2019, noise was monitored in 12 locations: Breachwood Green, Caddington, Dagnall, Flamstead, South Harpenden, Kensworth, Leighton Buzzard, Letchworth, South Luton, Markyate, St Alban, Stevenage and Wheathampstead. The Community Noise Report for each location can be found on https://www.london-luton.co.uk/corporate/community/noise/community-noise-reports.

Noise violation levels

The following table identifies daytime and night-time noise levels correlated to departing aircraft at the fixed noise monitoring terminals.

In order for a noise event to be correlated to an aircraft it should reach a detection threshold. The noise monitoring terminals are set at the lowest level to record the maximum number of aircraft noise events. However, a number of smaller aircraft types, such as business jets and propeller aircraft, get very close to but do not reach the detection threshold. Ambient background noise is also an important factor as specific incidents such as loud road traffic, emergency vehicle sirens, lawn mowers, drills etc. can register noise levels louder than an aircraft overhead, which results in not all aircraft movements being correlated to noise events. Generally, the louder noise events have more certainty of being correlated with aircraft movements.

Weather conditions can also effect the number of noise monitoring events recorded in the table; for example, if winds are greater than 10m/s and temperature is either higher than 25°C or below -10°C, results from noise monitors will be invalid and therefore will not be correlated.

	dB (A)	Daytime	NightTime	Total
Number of Correlated Events	<70	6,064	579	6,643
	70	2,007	238	2,245
	71	3,030	353	3,383
	72	5,764	726	6,490
	73	9,964	1,328	11,292
	74	11,353	1,493	12,846
	75	8,700	1.139	9,839
	76	4,685	589	5,274
	77	1,866	302	2,168
	78	745	102	847
	79	243	51	294
	80	123	12	135
	81	50	0	50
	82	37	0	37
	83	0	0	0
	84	0	0	0
	85	0	0	0
	86	0	0	0
	87	0	0	0
	88	0	0	0
	89	0	0	0
	90	0	0	0

During the daytime 99.2% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 85.8% registering below 76dB(A). Throughout the year 453 correlated daytime departures (0.8%) registered maximum noise levels at 79dB(A) or above.

There were no correlated departing aircraft in the daytime which recorded a maximum noise level greater than 83dB.

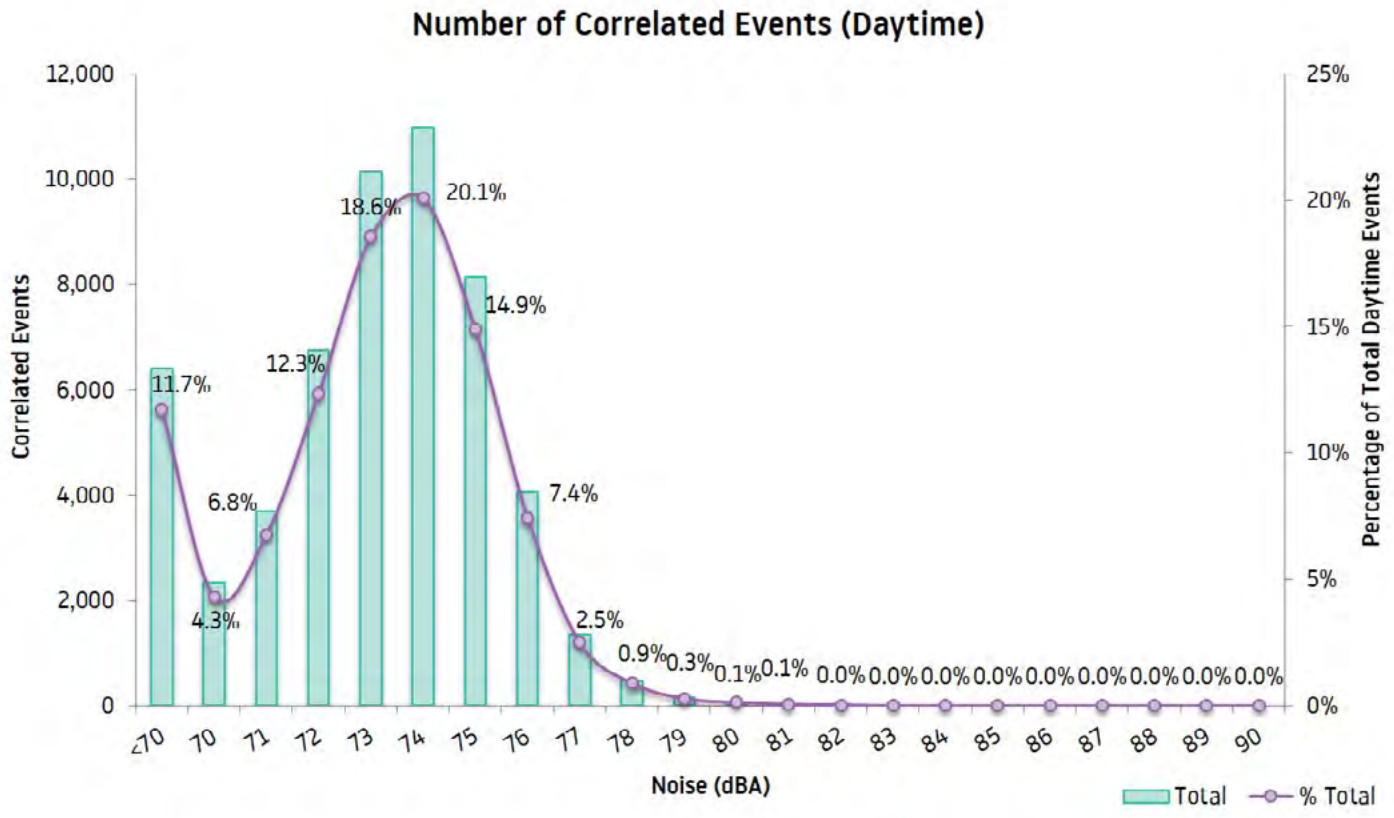
During the night 99.0% of correlated departures recorded maximum noise levels below 79dB(A), with 84.7% below 76dB(A). During the year 63 correlated night departures (0.9%) registered maximum noise levels at or above 79dB(A).

There were no correlated departing aircraft in the night time which recorded a maximum noise level greater than 81dB.

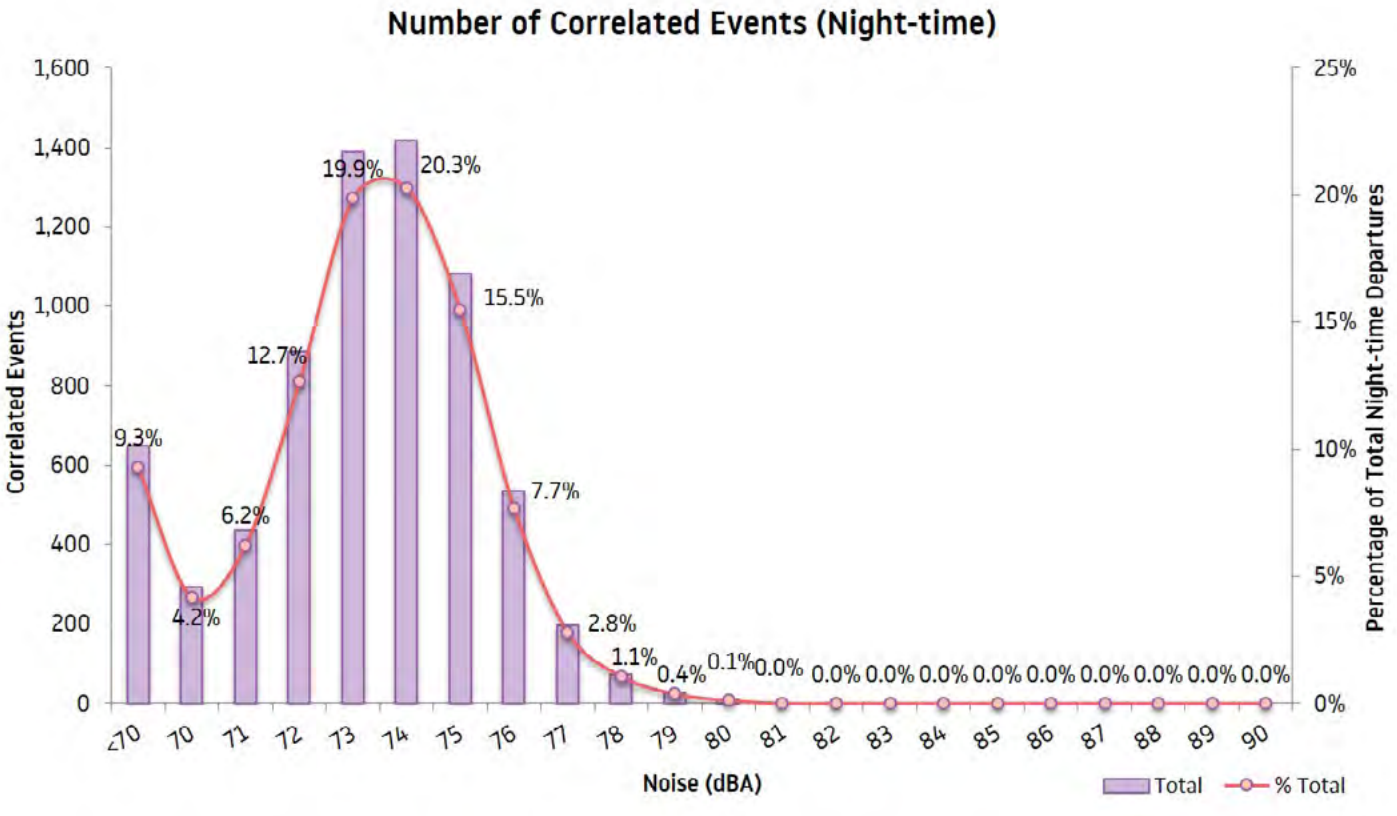
Note: This table comprises of noise measurements from NMT01 and NMT02 fixed monitors only. Readings from NMT03 have been discarded due to system downtime.

Daytime Noise

The following graph shows the number of correlated events during the daytime period (07:00hrs - 22:59hrs) compared to the total percentage of correlated events during the daytime.

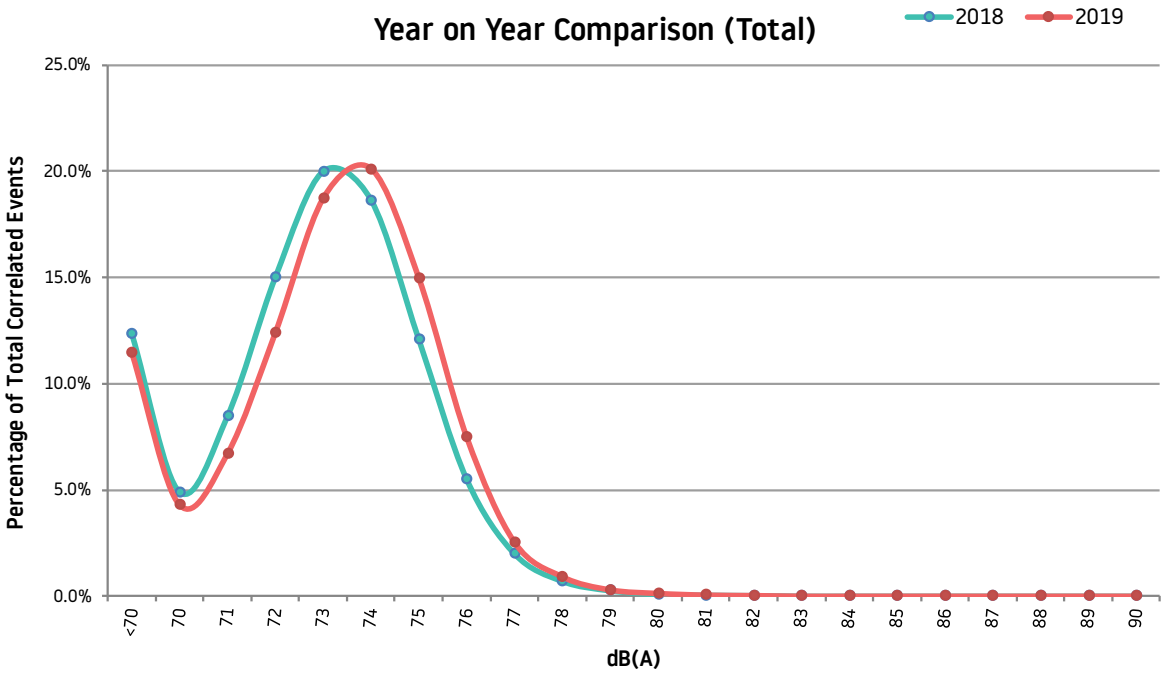


The following graph shows the number of correlated events during the night-time period (23:00hrs - 06:59hrs) compared to the total percentage of correlated events during the night-time.



Annual Comparison

The graph below shows the year on year comparison of the correlated departure noise events. The increase in noise level in 2019 was mainly due to some smaller aricraft have been replaced by larger aircraft, thus creating more aircraft noise to the surrounding area.



Noise violations during 2019

There was no daytime or night time noise violations during 2019. Although, from 1st April 2018 the fine was increased to £1,000 for a daytime noise violation and £2,000 for a night time noise violation. Noise Violation fines are passed to the London Luton airport Community Trust Fund, further details of which can be found at: https://www.london-luton.co.uk/corporate/community/noise/supporting-lla's-community-trust-fund

Noise Insulation Scheme

Our Noise Insultation Scheme is just one element of our noise management plan to reduce the impact of noise on those properties in Hertfordshire and Bedfordshire closest to the airport. The scheme covers both residential and non-residential properties. Depending on any existing insulation in the property, double glazing, secondary glazing and ventilation units can be provided. Rooms eligible for insulation include living rooms, dining rooms, kitchen-diners and bedrooms.

During 2019, works were carried out in properties located in south Luton, 42 properties were contacted and 34 properties accepted the insulation.

Noise Contours

Since 1989 the preferred measure of aircraft noise, recognised by UK Government, has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700-2300 for an average day between the 16th June and 15th September.

When planning permission was given in 2014 for development at London Luton Airport a number of conditions were imposed. Condition 12 requires that daytime and night-time contours are produced on an annual basis for the previous summer period based on actual aircraft movement data and for the following summer period based on predicted aircraft movement data. The areas of these contours are to be compared to the area limits contained in Condition 12.

Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the airport and also the departure routes flown. Changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, determined by the prevailing wind direction.

Methodology

Aircraft movement data for use in the contour production. The 2019 contour production methodology has been updated from that used for the 2018 contours. It retains the inclusion of terrain, and the use of the INM software (Version 7.0d), but the validation has been updated. The validation is now based on measured results in 2018 at the fixed noise monitors.

The exception to this is the Airbus A321neo, which operated in 2019 and is forecast to operate in 2020, but for which there are only limited measured results are available as it didn't operate at Luton in significant numbers in 2018. Therefore modelled noise levels for this new type have been based on its certification noise levels when compared to the Airbus A321ceo, which it is the replacement for, as shown in the table below.

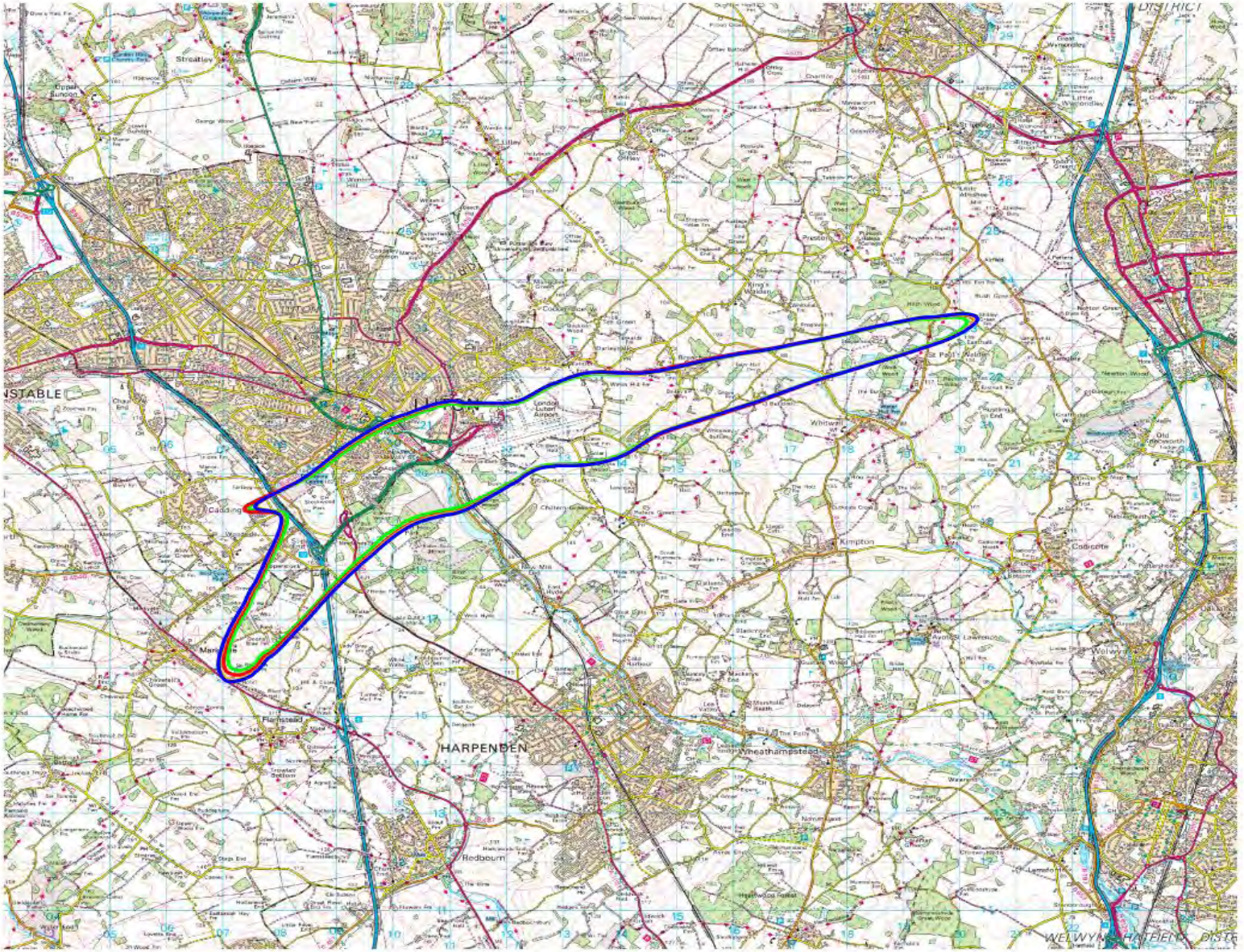
Replacement Aircraft Type	Current Aircraft Type	Noise Level Adjustment (dB)	
		Arrival	Departure
Airbus A321neo	Airbus A321	-1.8	-6.3

The 2020 contours have been produced using a long term (2015-2019) average modal split, which is shown in the table below. 2019 contours have been produced twice, once based on this long term average runway split, and also based on the actual runway usage in 2019. The 2018 contours which are included for comparison are based on the actual runway usage in 2018.

Year	% of Summer Movements	
	Runway 08	Runway 26
2018 Actual	27%	73%
2019 Actual	27%	73%
Long Term Average (2015-2019)	22%	78%

A comparison of the 2018 actual, 2019 actual, 2019 average modal and 2020 forecast daytime 57 dB LAeq,16h and night time 48 dB LAeq,8h contours has been provided. This shows that the 2018 actual, 2019 actual, 2019 average modal and 2020 forecast contours are all similar. The night time 2018 actual and 2019 actual contours are longer at the western end and slightly shorter at the eastern and south western ends compared to the 2019 average modal contours, this is due to the differences in modal split.

Summer Day time Comparison 2018, 2019 and 2020



LEGEND:

57 dB $L_{Aeq,16h}$ Noise Contours,
- 2018 Actual
- 2019 Actual
- 2019 Average Modal
- 2020 Forecast

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London Luton Airport
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Airborne Aircraft Noise Contours
Summer Daytime Comparison
2018, 2019 and 2020

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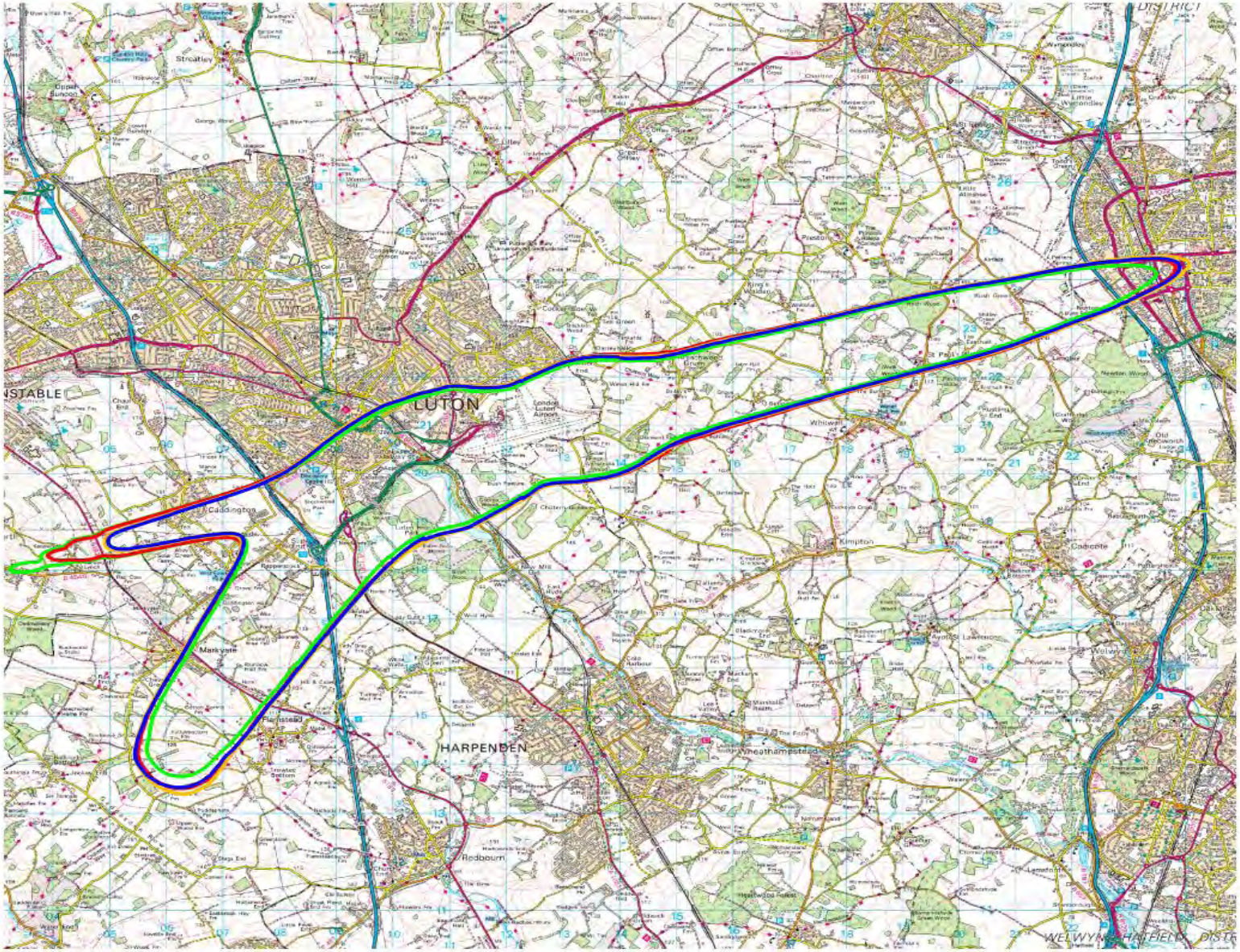
DATE: November 2019 SCALE: 1:100000@A4

FIGURE No:

A11060/N41/07

Summer Night time Comparison 2018, 2019 and 2020



LEGEND:

48 dB $L_{Aeq,8h}$ Noise Contours,
2018 Actual
2019 Actual
2019 Average Modal
2020 Forecast

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Airborne Aircraft Noise Contours
Summer Night time Comparison
2018, 2019 and 2020

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DATE: November 2019 SCALE: 1:100000@A4

FIGURE No:

A11060/N41/08

Annual noise contours summer 2019

The table below shows the annual daytime noise contours for summer 2019 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM software (the Integrated Noise Model) version 7.0d which is the method used by many other airports in the UK.

$L_{Aeq, 16\ hour}$ Daytime	Contour Area (km²)						
	1984	1999	2018 actual	2019 actual	2019 average	Difference 2018-2019 (actual)	2020 (forecast)
>72	1.63	1.5	1.0	1.1	1.1	+0.1	1.2
>69	2.80	2.5	1.7	1.9	1.9	+0.2	1.9
>66	4.86	4.4	3.1	3.6	3.6	+0.5	3.7
>63	9.10	7.3	6.1	6.7	6.7	+0.6	6.9
>60	17.18	11.8	10.6	11.5	11.5	+0.9	11.8
>57	**31.52**	**19.6**	**19.4**	**20.8**	**20.8**	**+1.4**	**21.3**

Considering the 57 dB LAeq,16h daytime noise contour there is an increase in area of approximately 8% when comparing the 2019 actual contour with the 2018 actual contour. This increase caused an exceedance of Condition 12 which relates to the area of the daytime summer noise contour; condition 12 limits the area to 19.4km². This is largely due to the increase in daytime movements. The 2019 contours based on the long term average runway split have the same areas as those based on the actual runway usage in 2019.The 2020 daytime contours are slightly larger than those for 2019, largely due to the forecast increase in daytime movements.

The table below shows the annual night time noise contours for summer 2019 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM software (the Integrated Noise Model) version 7.0d which is the method used by many other airports in the UK.

$L_{Aeq, 8\ hour}$ Night-time							
	1984	1999	2018 actual	2019 actual	2019 average	Difference 2018-2019 (actual)	2020 (forecast)
>69	1.39	1.8	0.7	0.8	0.8	+0.1	0.8
>66	2.42	3.0	1.1	1.3	1.3	+0.2	1.2
>63	4.01	5.2	1.9	2.2	2.2	+0.3	2.1
>60	7.06	8.3	3.7	4.4	4.4	+0.7	4.2
>57	13.05	13.2	6.8	8.0	8.0	+1.2	7.6
>54	24.48	21.6	12.6	14.6	14.6	+2.0	14.0
>51	44.92	36.0	23.0	26.0	26.1	+3.0	25.0
>48	**85.04**	**60.6**	**40.2**	**44.2**	**44.0**	**+4.0**	**42.6**

Considering the 48 dB LAeq,8h night time noise contour there is an increase in area of approximately 10% when comparing the 2019 actual contour with the 2018 actual contour. The 2019 night time contour area also exceeded the limit as detailed in Condition 12 (the limit is 37.2km²). The 2019 contours based on the long term average runway split have very similar areas to those based on the actual runway usage in 2019. The 2020 night time contours are smaller than those for 2019, largely due to the forecast decrease in night time movements.

Contour population counts

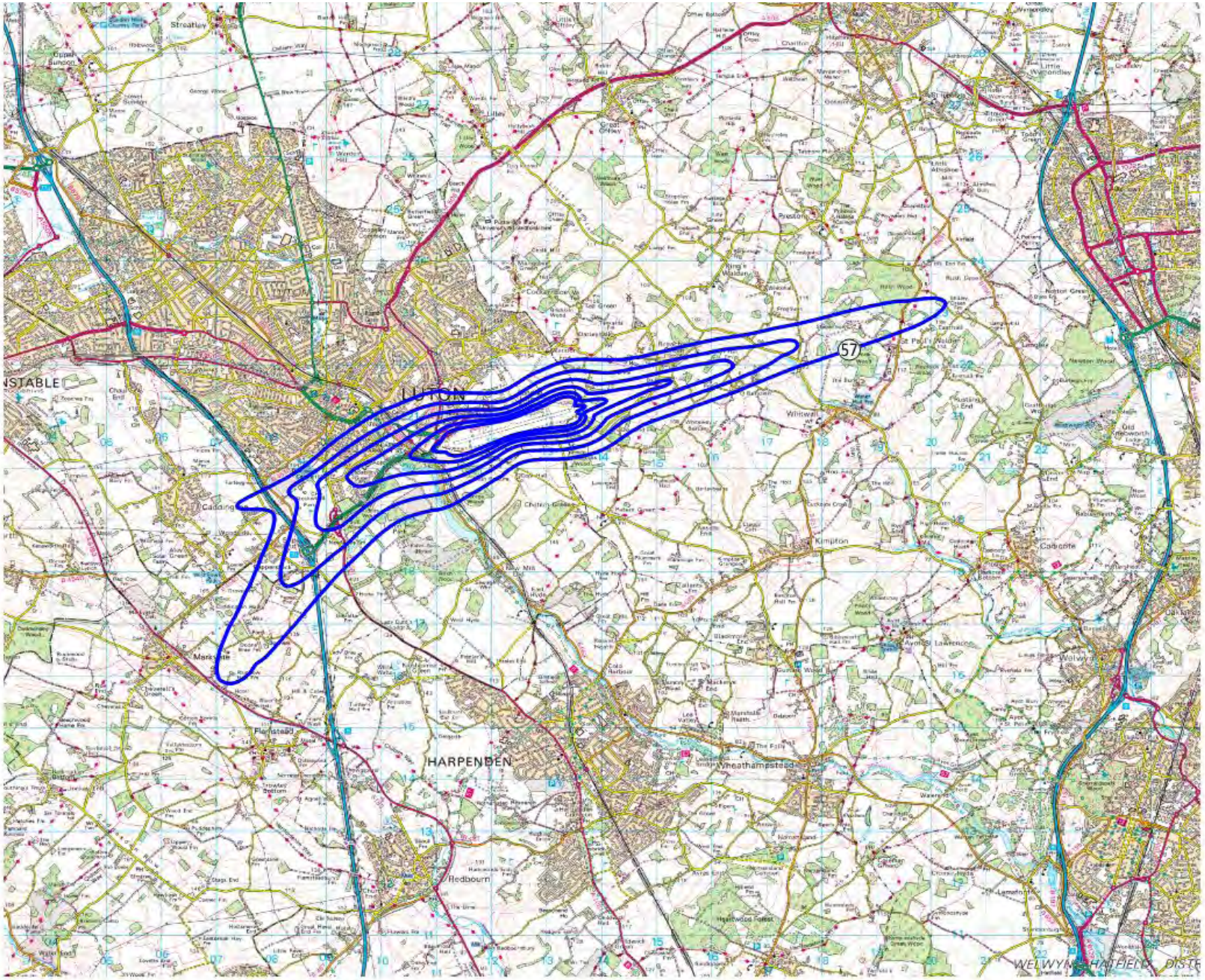
The population counts shown in the tables below were calculated using the CACI Ltd, 2018 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted. Please note, the population and dwellings data has been rounded to the nearest 50.

$L_{Aeq, 16\ hour}$ Daytime	2018 actual		2019 actual	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	9	22	11	27
>63	550	1,400	700	1,950
>60	1,650	4,350	2,050	5,150
>57	**3,950**	**9,100**	**4,550**	**10,550**

$L_{Aeq, 8\ hour}$ Night-time	2018 actual		2019 actual	
	Dwellings	Population	Dwellings	Population
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	150	400	150	450
>57	750	2,050	800	2,150
>54	1,950	5,000	2,450	6,150
>51	4,500	10,300	5,100	11,800
>48	**8,050**	**19,150**	**8,950**	**21,250**

The population and number of dwellings within the contours have increased, in lined with the contour area.

Annual Day Noise Contours Summer 2019 (actual)



LEGEND:

Noise Contours,
57 to 72 dB $L_{Aeq,16h}$ in 3 dB steps

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London Luton Airport
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Airborne Aircraft Noise Contours
2019 Summer Actual Daytime

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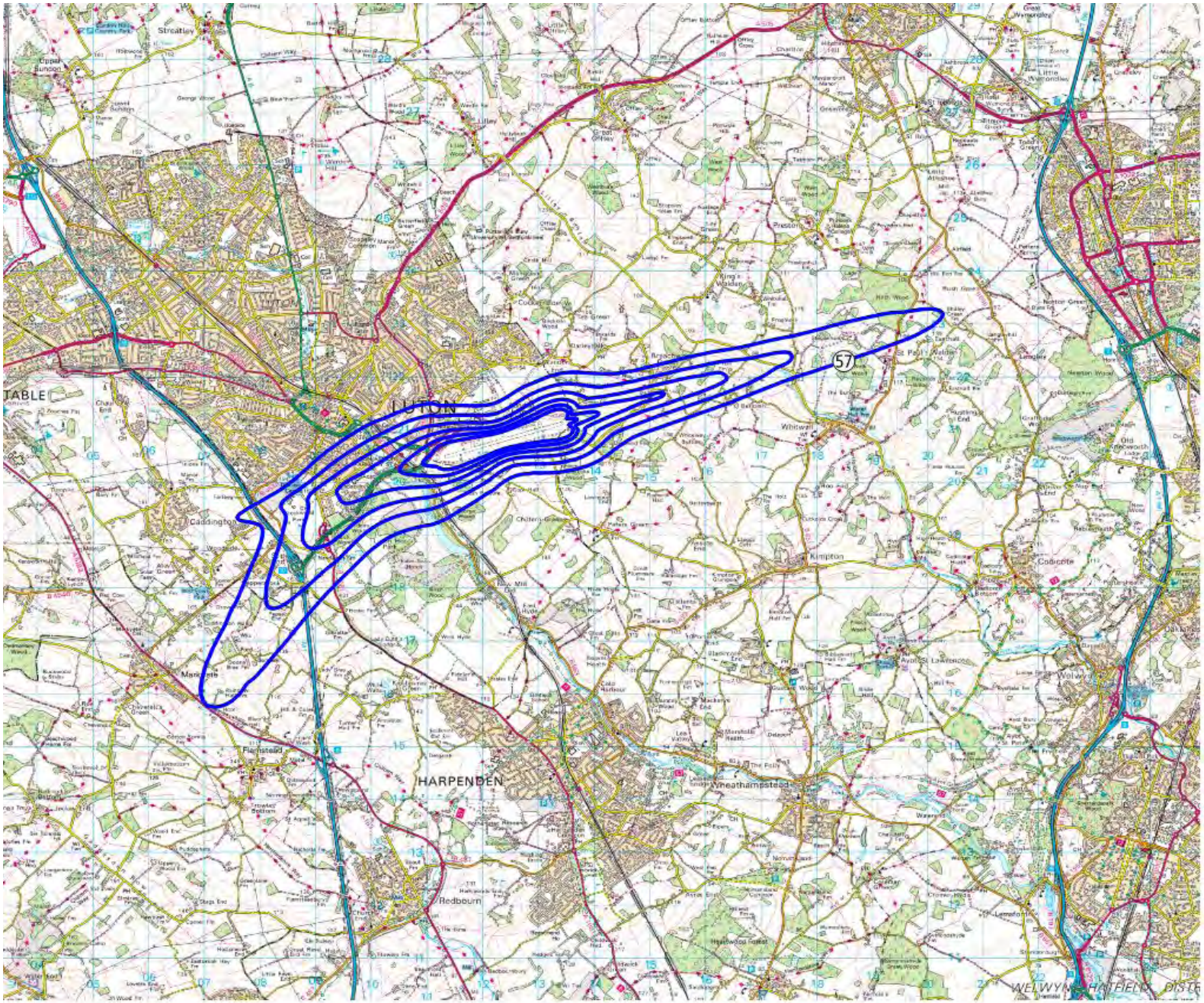
DATE: November 2019 SCALE: 1:100000@A4

FIGURE No:

A11060/N41/0

Annual Day Noise Contours Summer 2019 (average)



LEGEND:

Noise Contours,
57 to 72 dB $L_{Aeq,16h}$ in 3 dB steps

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Airborne Aircraft Noise Contours
2019 Summer Average Modal Daytime

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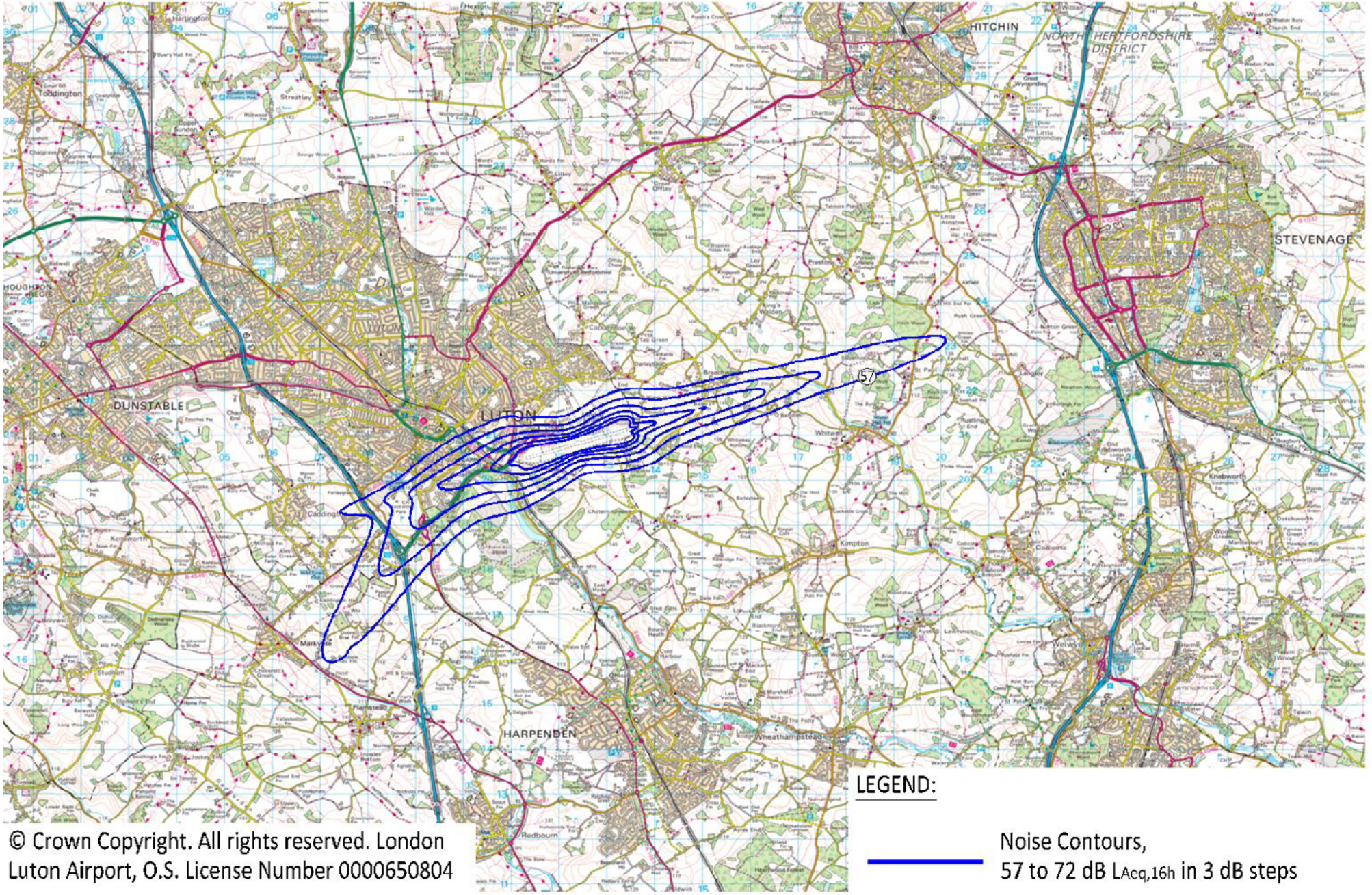
DATE: November 2019
SCALE: 1:100000@A4

FIGURE No:

A11060/N41/03

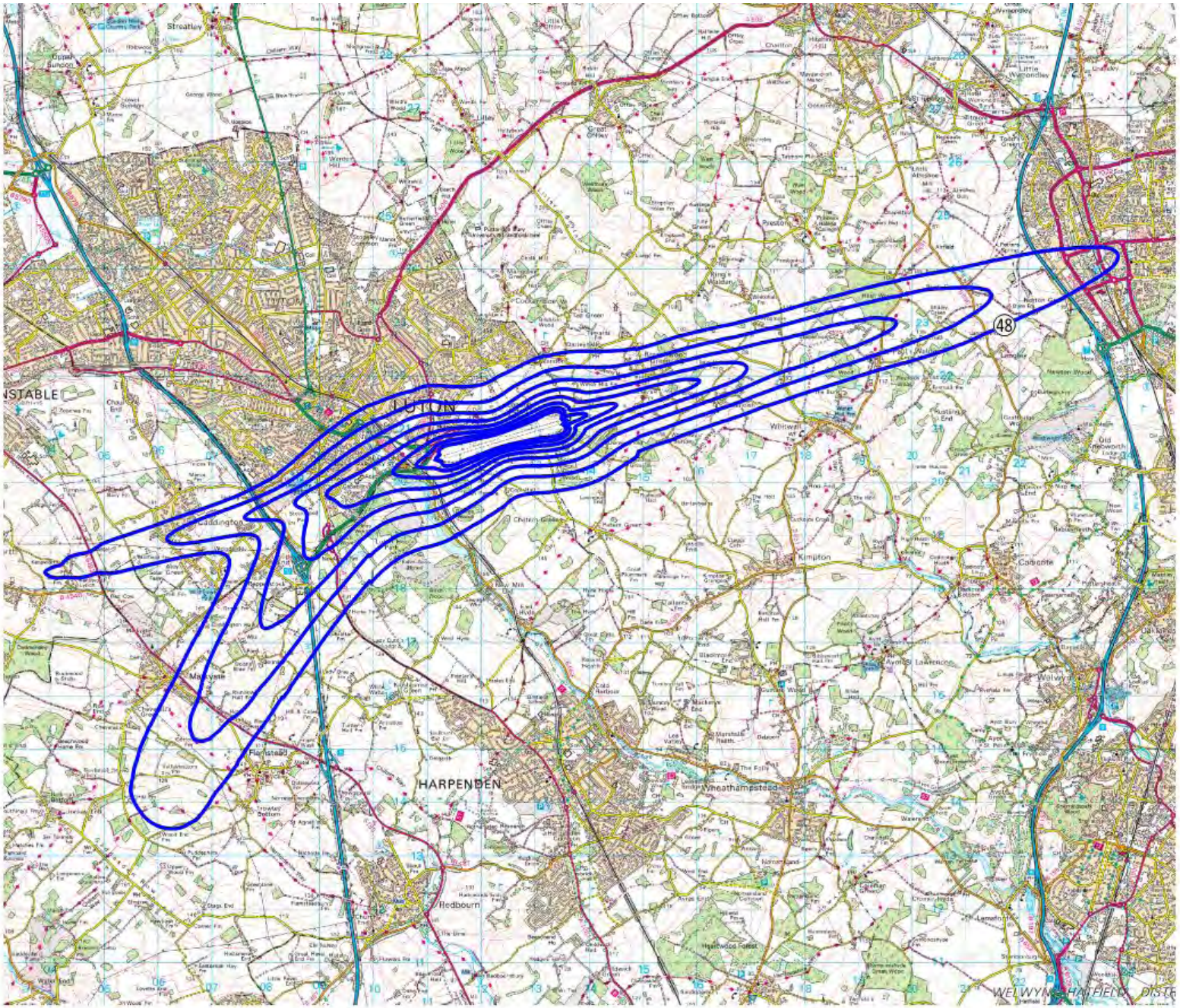
Annual Day Noise Contours Summer 2018



LEGEND:

Noise Contours,
57 to 72 dB $L_{Aeq,16h}$ in 3 dB steps

Annual Night Noise Contours Summer 2019 (actual)



LEGEND:

Noise Contours,
48 to 69 dB $L_{Aeq,8h}$ in 3 dB steps

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London Luton Airport
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Airborne Aircraft Noise Contours
2019 Summer Actual Night time

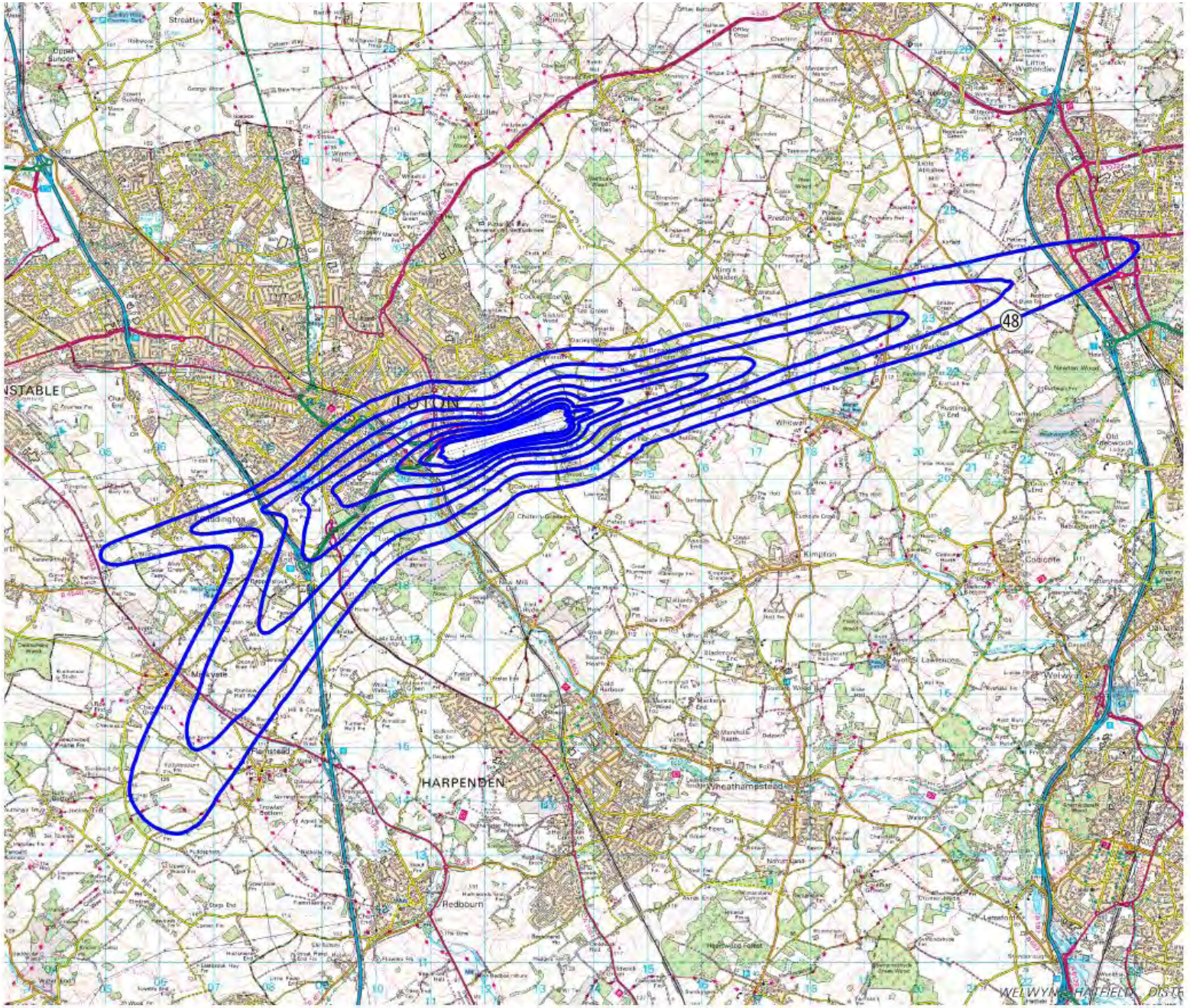
DRAWN: DR CHECKED: DC

DATE: November 2019 SCALE: 1:100000@A4

FIGURE No:

A11060/N41/02

Annual Night Noise Contours Summer 2019 (average)



LEGEND:

Noise Contours,
48 to 69 dB $L_{Aeq,8h}$ in 3 dB steps

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Airborne Aircraft Noise Contours
2019 Summer Average Modal Night time

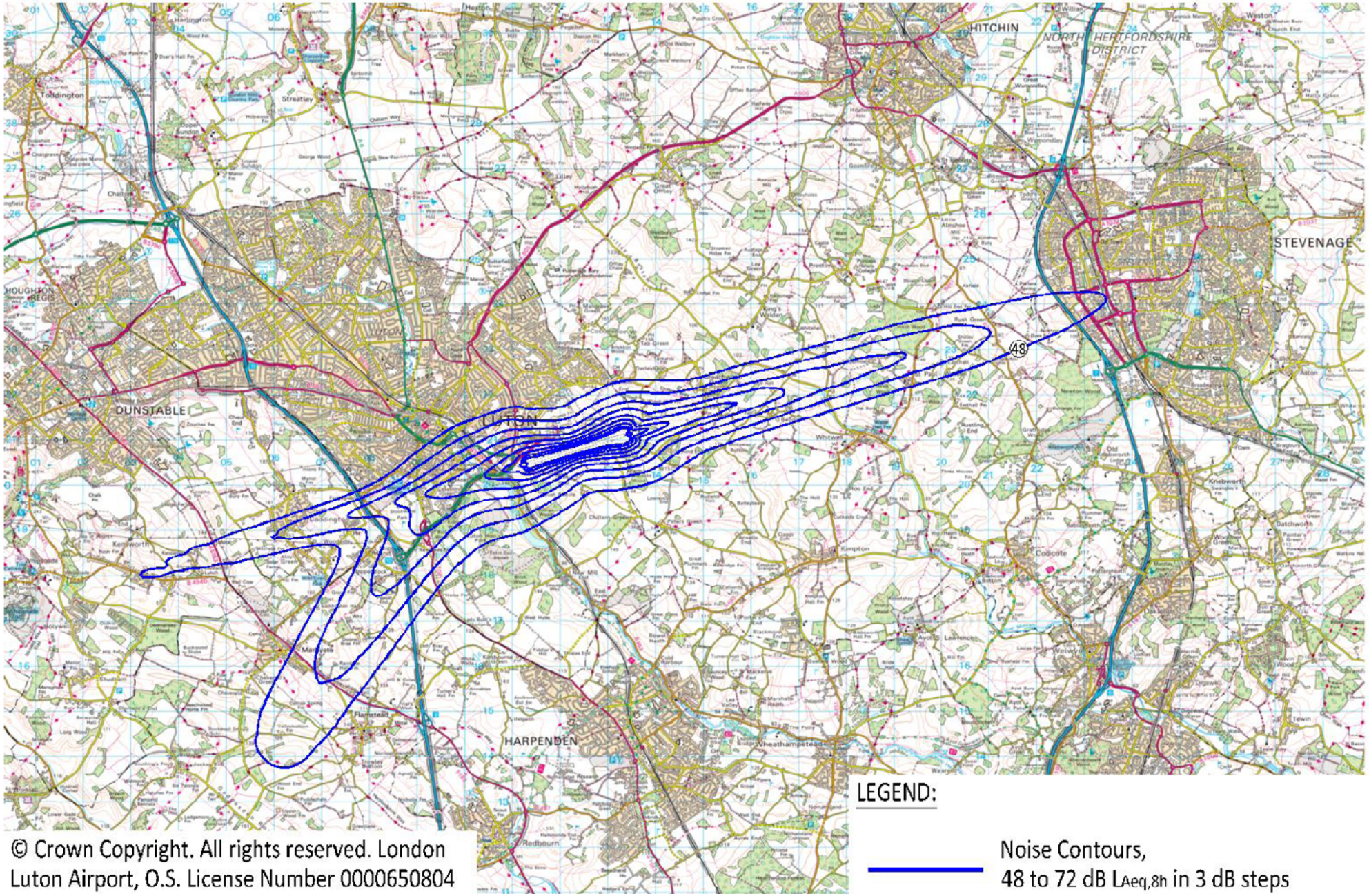
DRAWN: DR CHECKED: DC

DATE: November 2019 SCALE: 1:100000@A4

FIGURE No:

A11060/N41/04

Annual Night Noise Contours Summer 2018



Annual Noise Contours 2019

The annual Lden noise contours for 2019 have been produced in accordance with London Luton Airport's Noise Action Plan. The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Compared to annual summer 2019 noise contours Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2019, with a 10dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2019.

Annual Lden Noise Contour Results

Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2018	2019	2018	2019	2018	2019
>75	0.9	1.0	0	0	0	0
>70	2.1	2.3	0	0	0	0
>65	6.3	7.1	1,500	1,900	550	700
>60	17.0	18.5	7,100	8,300	2,950	3,450
>55	**43.0**	**45.6**	**20,400**	**22,000**	**8,550**	**9,400**

Annual Lnight Noise Contour Results

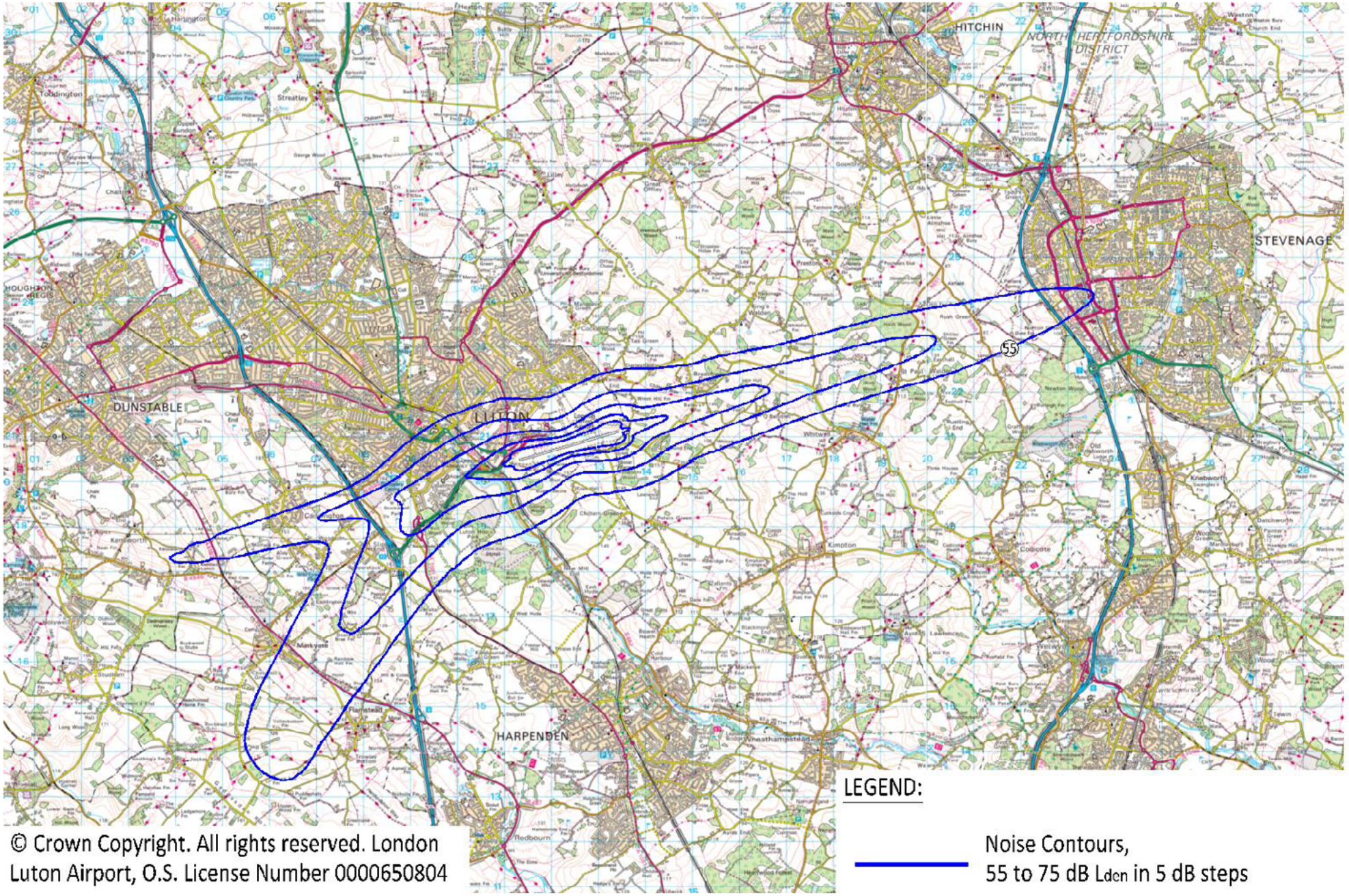
Contour Value (dB(A) L_{night})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2018	2019	2018	2019	2018	2019
>66	1.0	1.1	0	0	0	0
>63	1.6	1.8	0	0	0	0
>60	3.0	3.5	<100	<100	<50	<50
>57	5.6	6.6	1,300	1,500	500	550
>54	10.1	11.7	3,100	4,300	1,150	1,650
>51	18.9	21.3	8,100	9,300	3,450	4,000
>48	**33.7**	**36.9**	**15,000**	**17,300**	**6,350**	**7,300**

As can be seen from the tables above, the areas of the Lden and Lnight contours have increased. The night contours have increased the most in line with what would be expected due to the increase in night passenger jet movements. The Lden contours have increased slightly less due to the slight decrease in evening movements. The population and number of dwellings within the contours have also increased, due to the greater contour areas.

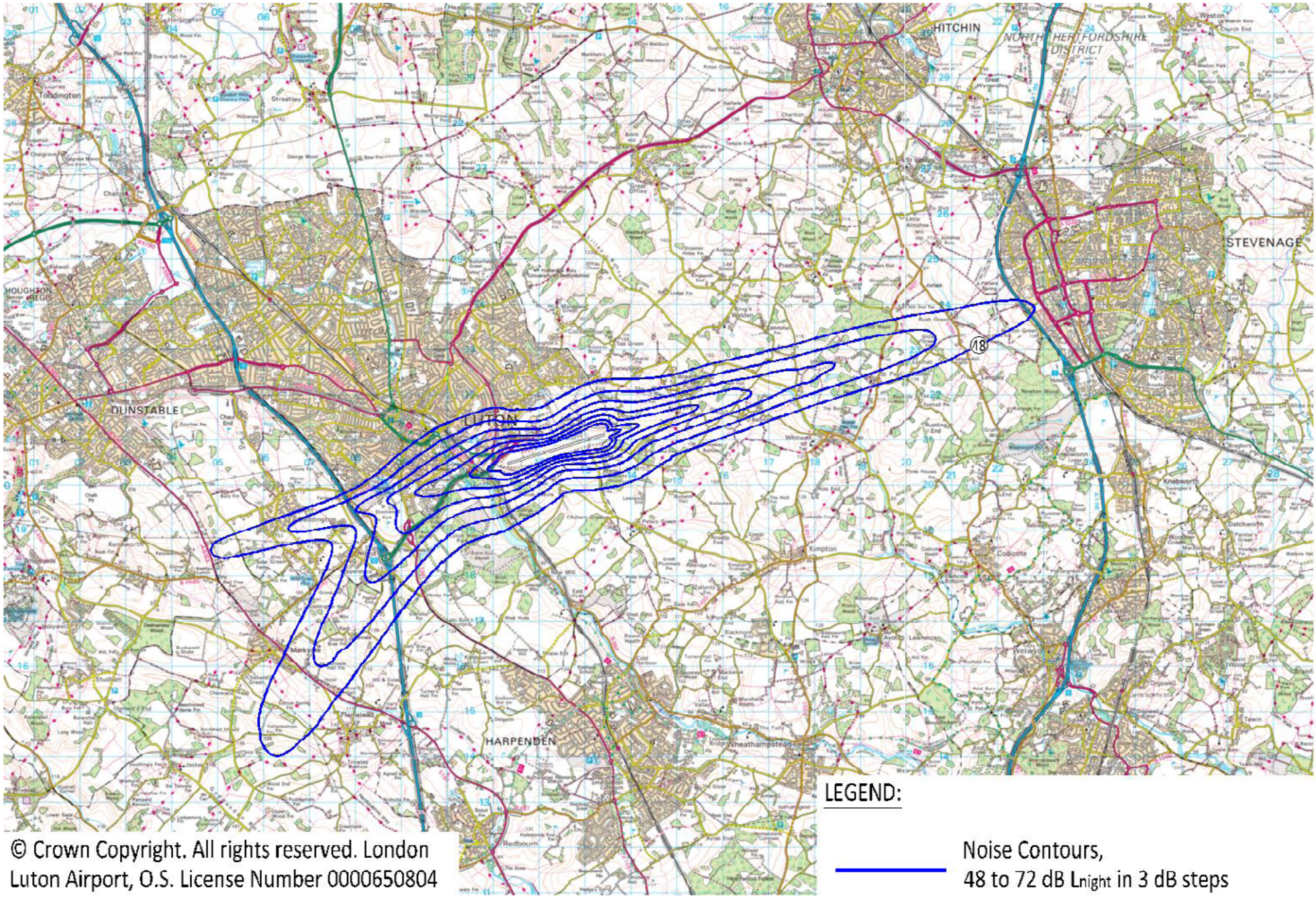
[1] - Population counts rounded to nearest 100

[2] - Dwelling counts rounded to nearest 50

Annual L_{den} Noise Contours 2019



Annual L_{night} Noise Contours 2019



LEGEND:

Noise Contours,
48 to 72 dB L_{night} in 3 dB steps

Correspondence and Complaints

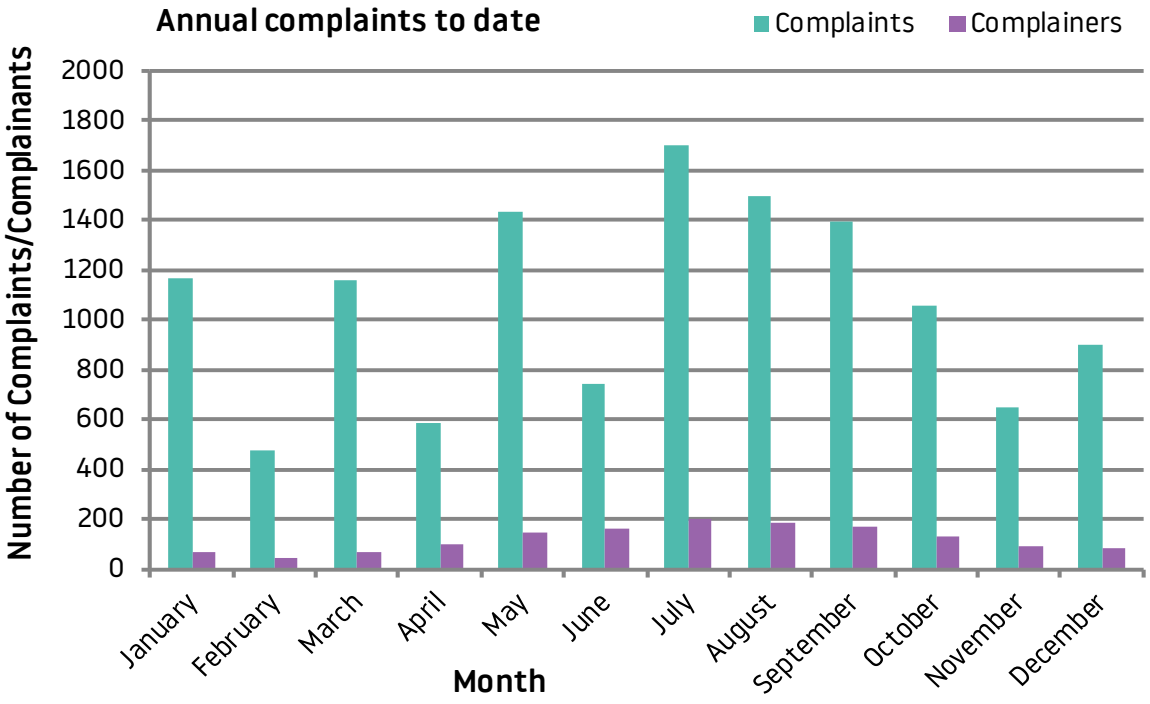
Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

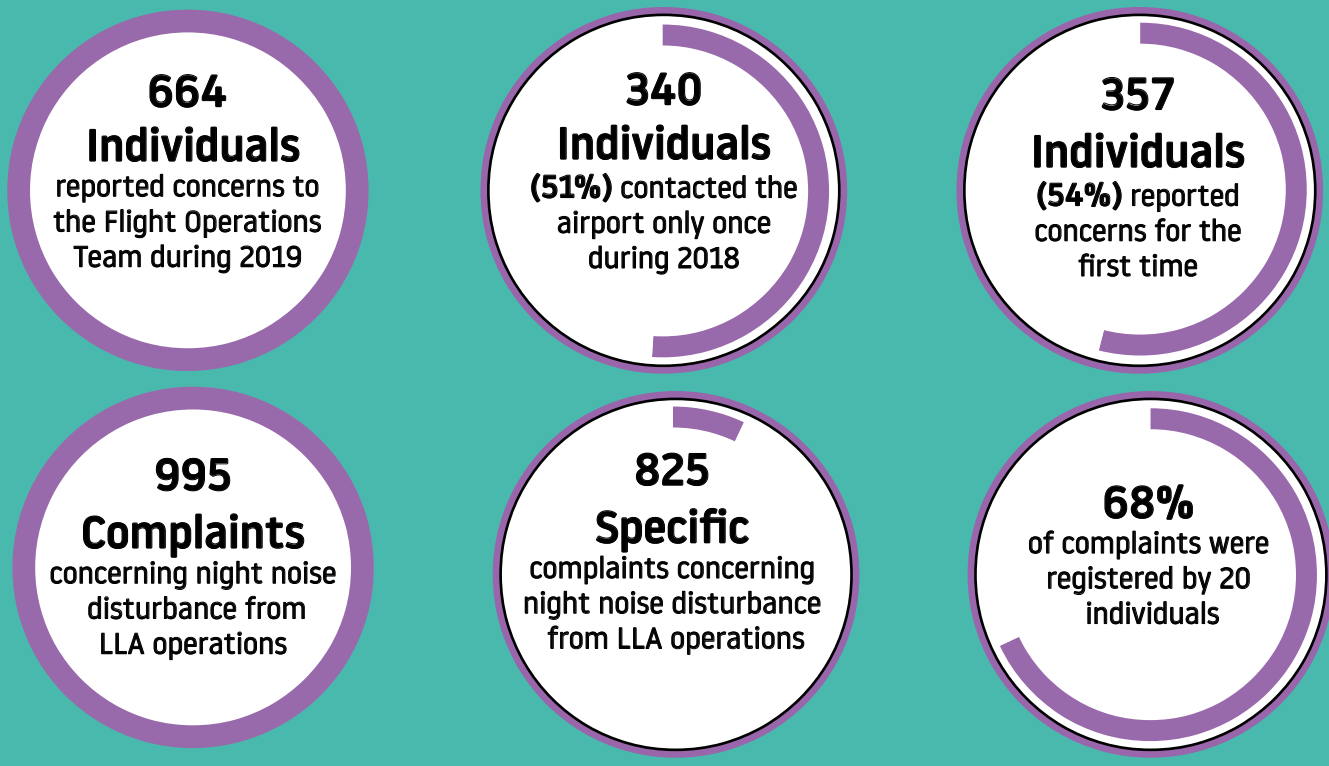
Complaints are reported in two forms – general disturbance and specific disturbance. A general disturbance relates to a complaint that does not specify a time period, examples of this type of complaint includes frequency, air quality and ground noise. A specific complaint relates to a complaint which specifies the time which can be correlated to an aircraft, example complaints of this type include too low, too loud, night flight and off-track. If a single piece of correspondence contains multiple specific disturbances, this will be logged as a general complaint regarding frequency.

Total complaints relating to LLA aircraft operations

	2018	2019	% change
Total No. of Complaints relating to LLA aircraft operations	8,275	12,735	54%
No. of Complainants	691	664	-4%
No. of General Complaints	1,866	1,478	-26%
No. of Specific Complaints	6,409	11,257	76%
Average No. of Complaints per Complainant	12.0	19.1	59%
No. of Aircraft Movements per Complaint	16.5	11.1	-32%

During 2019 a total of 12,735 complaints (on average 34.9 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 8,275 complaints in 2018. Out of the total complaints 68% were registered by the 20 most regular complainants and 40% from just five individuals. A further 187 complaints received were not attributable to LLA traffic. The figure below shows the complaints statistics throughout 2019, more complaints were received in the July and August, correlating with an increase in aircraft activity.



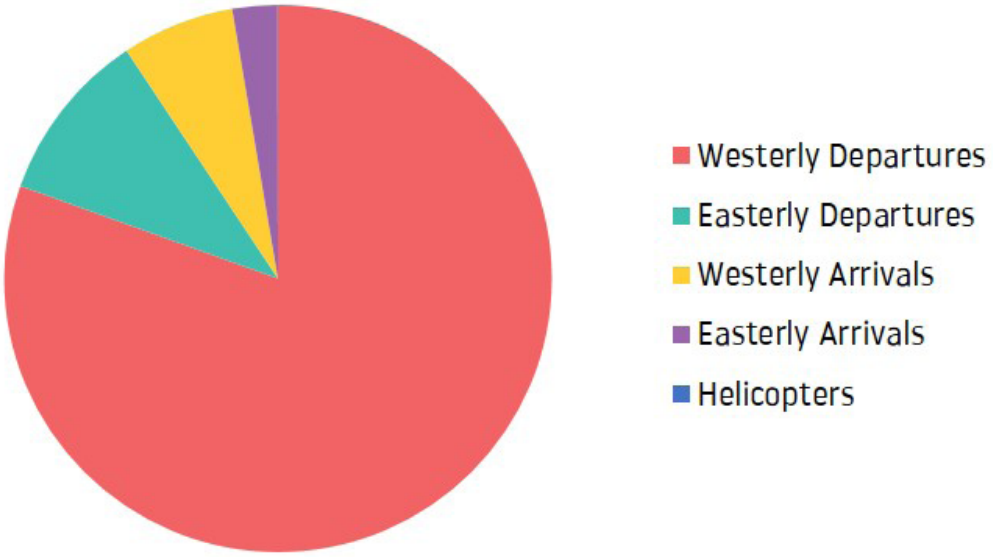


Complaints by aircraft type

Of the 12,735 complaints relating to LLA aircraft operations registered during the year, 10,454 complaints (82%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The table below shows aircraft types generating complaints.

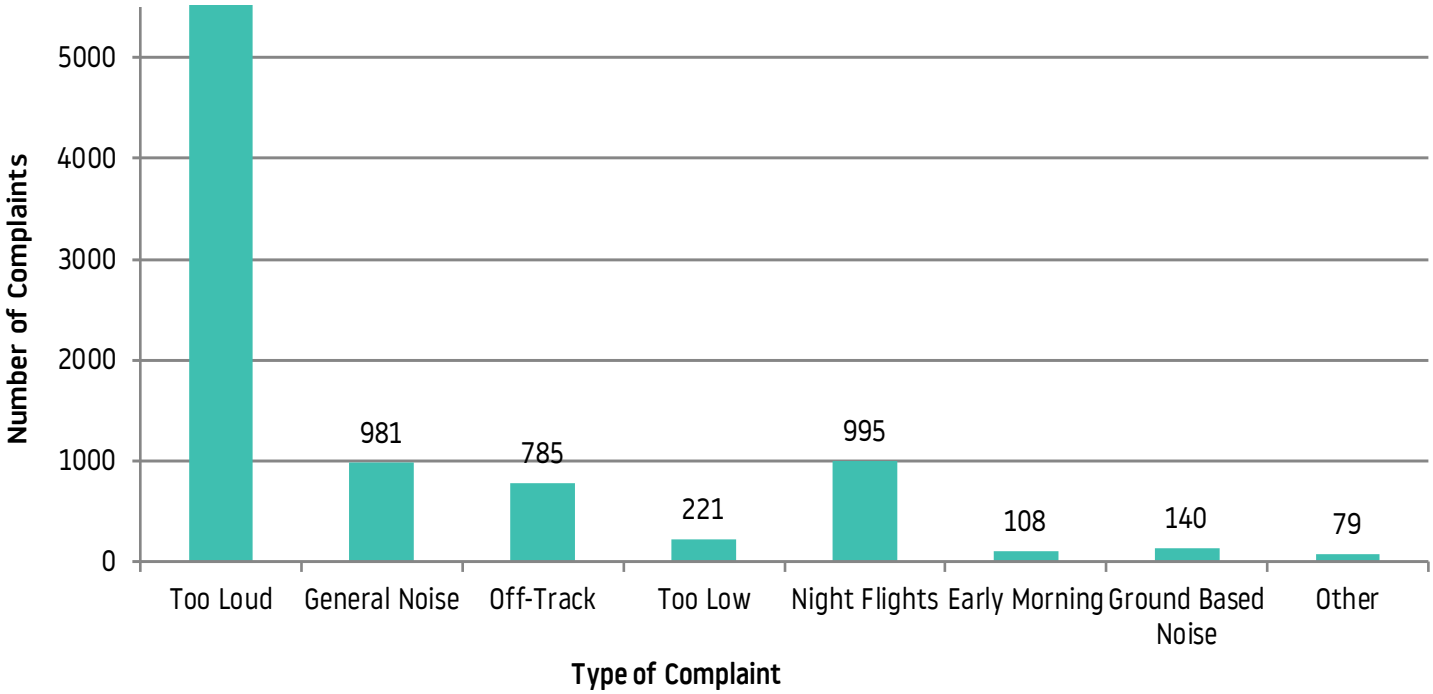
Aircraft Type	No. of Correlated Complaints	% of Correlated Complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per Correlated Complaint
A319	705	6.7%	21,642	31
A320 Neo	206	1.9%	6,013	29
A320	3,065	29.3%	44,074	14
A321	1,713	16.4%	18,922	11
A321 Neo	117	1.1%	1,434	12
B737-800	789	7.6%	16,683	21
A306 (Cargo)	235	2.2%	1,758	7
B737-400	67	0.6%	598	9
GLF4/GLF5/GLF6	82	0.8%	4,380	53
B757 & B767	106	1.0%	1,440	14
B737-300	11	0.1%	152	14
B737-900	73	0.7%	550	8
Helicopter	3	0.03%	578	193
CL30/CL60	68	0.7%	1,913	28
GLEX/GL5T	79	0.8%	3,562	45
Other Aircraft	3,135	30.0%	17,782	6

Nature of Disturbance

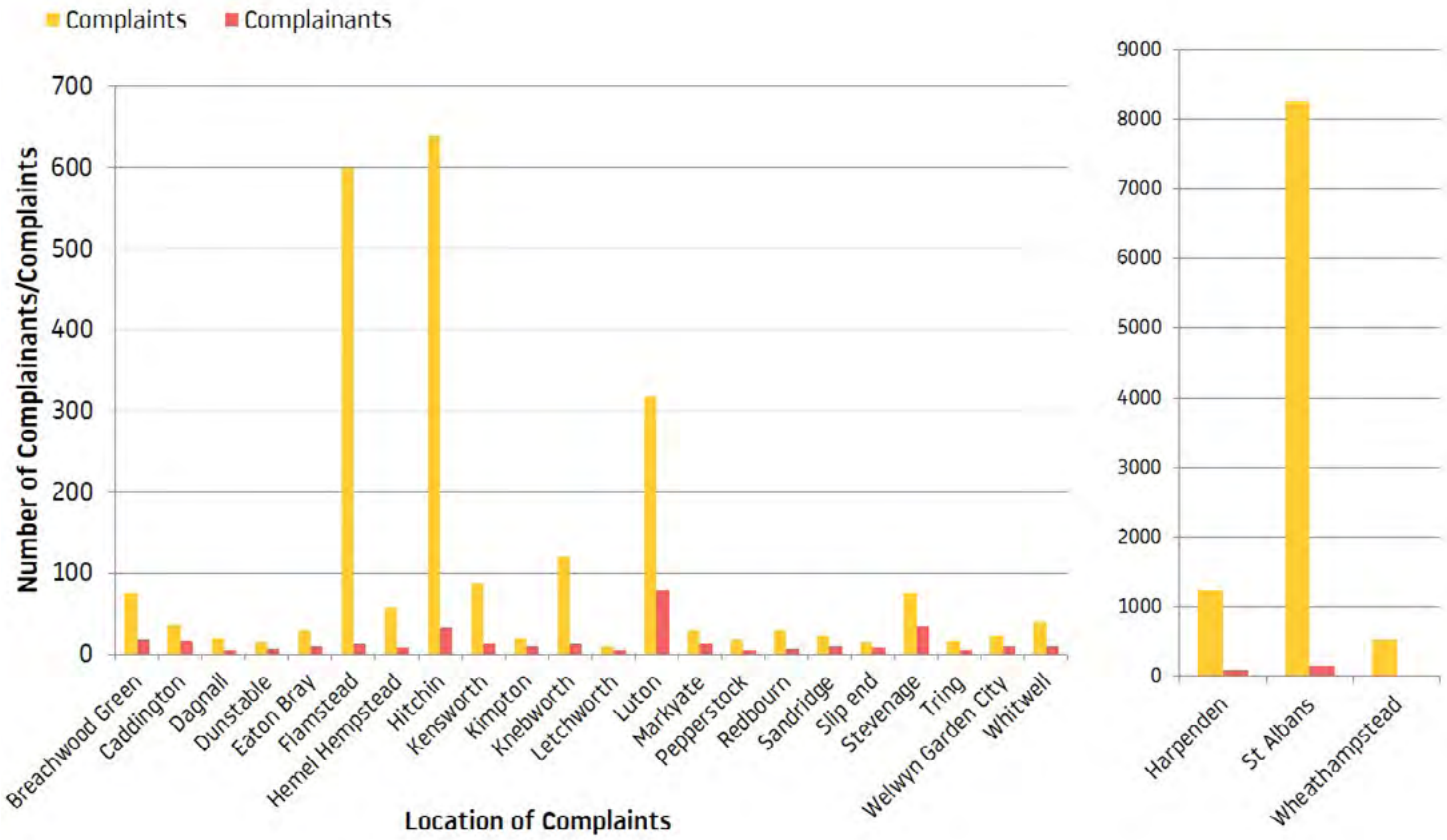


Within the 8,415 specific complaints correlated to aircraft movements concerning westerly departures, 8,155 reported specific aircraft following the Match/Detling route, 172 related to aircraft on the Compton route and 72 related to aircraft following the Olney heading. 16 other complaints involved positioning flights following off-airways flight routes. Of the 1,064 complaints specifically attributed to easterly departures 751 related to aircraft following the Compton heading, 35 related to aircraft on Olney flight route and 270 to aircraft on the Match/Detling heading. A further 8 complaints involved positioning flights following off-airways flight routes.

Out of the total 972 complaints correlated to specific arriving aircraft, 695 related aircraft arriving at the airport during westerly operaitons and and 277 complaints related to easterly arrivals.



Location of Complainants (5+)



Communication method

The following table shows the method of communication used to contact London Luton Airport regarding noise.

Communication Method	% of Total Complaints
TraVis	55%
Email	39%
Telephone	6%
Letter	0%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Flight Operations Team by the following means:

Postal Address **Flight Operations**
London Luton Airport
Percival House
Percival Way
Luton
Beds
LU2 9NU
Direct Telephone **(01582) 395382 (24 hours)**
Direct email **noise.enquiries@ltn.aero**
TraVis **www.travisltn.topsonic.aero**

Complaints analysis

During 2019 there was an increase in complaints and a decrease in complainants compared to 2018.

- A large number of complaints were generated by a small number of people. The 20 most regular complainants in 2019 created 68% of total complaints.
- Out of the specific complaints that were reported, the main reason that was that aircraft were too loud, this reason accounted for 74% of the complaints.
- As winds dictated westerly operations for 70% of the time, the largest percentage of complaints related to aircraft operations during westerlies, this is in line with previous years.
- High numbers of complaints were recorded from specific locations, for example Harpenden, St Albans and Wheathampstead. Complaints from these areas accounted for 79% of total complaints. In these areas there is a heightened awareness of aircraft, particularly in relation to the growth on this route.
- St Albans recorded the highest number of complaints with 8,244 complaints in 2019; of the 8,244 complaints 5,009 (61%) were recorded from 5 individuals.

Community Relations

Through the London Luton Airport Consultative Committee (LLACC), which meets every quarter, London Luton Airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the Consultative Committee including meeting minutes and its representatives can be found at the following link: **http://www.llacc.com/**

In 2019, the Flight Operations Team continued the Public Surgery programme. These drop-in events allow local residents to talk to the team face to face to discuss any concerns regarding the impact of LLA's operations. Over 150 residents attended to the Public Surgeries which were held in Breachwood Green, South Luton, Edlesborough, Stevenage, Harpenden and Leighton Buzzard. These will continue to be scheduled in 2020, details of upcoming surgery events can be viewed here.

The Flight Operations team, held meetings with Kings Walden Parish Council, a member of LADACAN and a member of Bedfordshire Association of Town and Parish Councils. Additionally, members of the team attended meetings in the community with local residents, as well as attending Bedfordshire Association of Town and Parish Councils AGM and St Albans Parish Council Conference. Furthermore, invitations are often extended to local residents and LLACC members to visit the Flight Operations Team for a demonstration of the Aircraft Noise & Track Monitoring System, to discuss specific concerns and to view the specific tracks of LLA aircraft operations in their area.

Responsible Business Strategy

We finalised our Responsible Business Strategy in 2019, setting our commitments on environmental, social and business ethics at the airport.

The strategy concentrates on six key areas, supported by a governance and management structure which provides leadership and resources to manage the material responsible business issues. The six focus areas are:

- Ensure Environmental Responsibility and Efficiency
- Community Engagement: A healthy today and a skilled tomorrow
- A Safe and Secure Airport
- Grow with our People
- Deliver Great Customer Experience
- Sustainable Supply Chain

Community Engagement

Following a review in 2018 of how we engage and support or community, we continue to recognise the critical role of our local community. Our operations are intrinsically linked to the community's wellbeing and future prosperity. The proximity to residential areas means that impacts such as noise, produced by aircraft and airport operations, has the potential to adversely impact the life of people living nearby and under its flight paths. Whilst schemes exist to mitigate noise, it cannot be completely eliminated. Further, we recognise that our futures are intertwined; we prosper together. Our Community Engagement programme therefore aims to ensure those living close by also see the benefits of a successful airport. Thus, our focus for community engagement is promoting a healthy life, and supporting skills development of the local community.

In 2019 the funding for the airport's Community Trust Fund was increased to £150,000, supporting beneficiaries across Hertfordshire, Bedfordshire and Buckinghamshire. We were in our second year of the two-year charity partnership with Macmillan Cancer Support and once again raised more than £45,000 this year, exceeding our year two target of £80k.

Our school engagement programme continued with partnerships with the Prince's Trust and the Launch Group delivering two 'Get into Airports' programmes for unemployed people aged 18-30.

Noise Action Plan

LLA's Noise Action plan is valid from 2019- 2024, the full document can be downloaded here.

1: Operational Procedures

Ref:	Action	Impact	Timescale	Performance Indicator	Numbers Affected	Target	Progress to date
1.1	Reduce the Maximum Noise Violation Limits (NVL) for departing aircraft and bi-annually review the penalties to ensure it remains effective in seeking to reduce departure noise.	Departure Noise	2020	Reduction of NVL's.	Residents within and beyond 55dB L_{den}	Reduce NVL's to 80dB during the day time and 79dB during the night-time by 2020.	**Ongoing- reduction planned from 1st Jan 2020**
1.2	We will work with our airline partners to improve performance relating to Continuous Descent Approach (CDA) with the aim of reducing the noise impact to the communities below.	Arrival Noise	Ongoing	CDA Compliance.	Residents within and beyond 55dB L_{den}	92% compliance by 2020. 95% compliance by 2022.	**Ongoing - new target from 1st Jan 2020**
1.3	We will identify and act on opportunities to minimise noise through modernisation of the airspace structure working with both community and industry partners.	Departure/ Arrival Noise	Ongoing	Progress through CAP 1616 process.	Residents within and beyond 55dB L_{den}	Submit Airspace Change Proposal to the CAA by 2022.	**Ongoing - Stage 1 of FASI-S change complete in 2019.**
1.4	Work with Air Traffic Control, airlines and local communities stakeholders to explore opportunities to facilitate more continuous climb operations (CCO).	Departure Noise	2019-2023	Evidence of work.	Residents within and beyond 55dB L_{den}	Explore opportunities and make appropriate changes to facilitate more CCO's.	**Ongoing**
1.5	Undertake a review of Noise Abatement Departure Procedures used at London Luton Airport to evaluate their effectiveness and work with our airline partners to identify and implement improvements.	Departure Noise	2019	Evidence of the review.	Residents within 55dB L_{den}	To assess the effectiveness and establish targets for noise reduction.	**Incomplete - new target to be complete by end of 2020.**
1.6	Review and promote the Arrivals Code of Practice and Departures code of Practice and work with our airline partners to set minimum performance criteria and a method for measuring performance.	Arrivals/ Departure/ Ground Noise	2019-2023	Evidence of review and new performance criteria.	Residents within and beyond 55dB L_{den}	Set minimum performance criteria by Q2 2019.	**Incomplete - new target to be complete by end of 2020.**
1.7	Continue to promote and encourage the use of single engine taxi procedures at London Luton Airport.	Ground Noise	Ongoing	Minutes of FLOPC meetings.	Residents within 65dB L_{den}	Increase the number of aircraft using single engine taxi procedures.	**Ongoing**
1.8	Work with our airline partners to promote and encourage the adoption of low power, low drag procedures such as delayed landing gear deployment in order reduce noise from arriving aircraft.	Arrival Noise	Ongoing	% of aircraft using low power, low drag procedures.	Residents within and beyond 55dB L_{den}	Increase the number of operators using low power, low drag procedures.	**Ongoing**
1.9	Working with our partners at Sustainable Aviation we will challenge current operational procedures to ensure continuous improvement to best practice.	Departure/ Arrival Noise	Ongoing	Minutes of Sustainable Aviation meetings.	Residents within and beyond 55dB L_{den}	Annually review and improve the departures and arrivals code of practice.	**Ongoing**

2: Quieter aircraft

Ref:	Action	Impact	Timescale	Performance Indicator	Numbers Affected	Target	Progress to date
2.1	We will work with our Airline Partners to achieve the voluntary phase out of aircraft that are Chapter 3 or below, to encourage the introduction of quieter aircraft.	Departure/ Arrival/ Ground Noise	2019-2023	% of Chapter 4 aircraft.	Residents within and beyond 55dB L_{den}	100% Chapter 3 aircraft by 2020 and 100% Chapter 4 aircraft by 2022.	**Ongoing - 4 marginally compliant Chapter 3 aircraft operated in 2019.**
2.2	We will review our landing charges annually to encourage the use of quieter aircraft at London Luton Airport.	Departure/ Arrival/ Ground Noise	Annually	Publication of Charge's and Conditions of use.	Residents within and beyond 55dB L_{den}	Reduce the size of the noise contours.	**Ongoing**
2.3	Introduce incentives for airlines to adopt the quietest aircraft e.g. Airbus NEO and Boeing Max.	Departure/ Arrival/ Ground Noise	2019	Publication of Charge's and Conditions of use.	Residents within and beyond 65dB L_{den}	Introduce new charges in 2019.	**Complete - new charges implented for 2020-2021.**

3: Operational restrictions

Ref:	Action	Impact	Timescale	Performance Indicator	Numbers Affected	Target	Progress to date
3.1	We will operate within our agreed Total Annual Movement caps.	Night Noise	Ongoing	Movement reports in AMR and QMR.	Residents within and beyond 48dB L_{night}	A maximum of 9,650 movements between 23:00hrs-06:00hrs and a maximum of 7000 movements between 06:00hrs-07:00hrs for a rolling 12-month period.	**Ongoing**
3.2	We will continue to operate within our agreed Total Annual Quota Count (QC) caps.	Night Noise	Ongoing	QC reports in AMR and QMR.	Residents within and beyond 48dB L_{night}	3,500 QC points for a rolling 12-month period between (23:30hrs-06:00hrs).	**Ongoing**
3.3	To review and reduce the Total Annual Quota Count (QC) cap.	Night Noise	2020	Reduction of annual QC cap.	Residents within and beyond 48dB L_{night}	To review the Quota Count (QC) cap in 2020 to minimise night time noise disturbance.	**Ongoing**
3.4	We will operate within our agreed contour area limits.	Arrivals/ Departure/ Ground Noise	Ongoing	Area of noise contours	Residents within 57dB $L_{aeq\ 16\ h}$ and within 48dB L_{night}	57dB(A) Leq16hr (0700-2300) - 19.4 sq km. 48dB(A) Leq8hr (2300- 0700) - 37.2 sq km.	**Incomplete**
3.5	Develop a noise contour reduction strategy to define methods to reduce the area of the noise contours.	Arrivals/ Departure/ Ground Noise	2021	Evidence of work.	Residents within 57dB $L_{aeq\ 16\ hr}$ and within 48dB L_{night}	Submit strategy to Local Planning Authority in 2021.	**Complete - submitted to local planning authority in 2019.**
3.5	In order to minimise ground noise we will monitor and enforce restrictions around the use of Aircraft Auxiliary Power Unit's (APU).	Ground Noise	Ongoing	Minutes of FLOPC meetings.	Residents within 65dB L_{den}	Ensure operators are aware of the APU procedures at Flight Operations Committee meetings.	**Ongoing**
3.6	In order to minimise ground noise, particularly at night, we will restrict the permitted hours for engine testing to daytime periods only.	Ground Noise	Ongoing	Log of engine testing.	Residents within 48dB L_{night}	Restrict engine testing for aircraft in the daytime period only.	**Ongoing**

4: Land-use Planning and Mitigation

Ref:	Action	Impact	Timescale	Performance Indicator	Numbers Affected	Target	Progress to date
4.1	We will install acoustic insulation in eligible properties as part of our residential and non-residential Noise Insulation schemes.	Ground/ Departure/ Arrival Noise	Ongoing	Noise Insulation Scheme update in QMR and AMR.	Residents within 63dB L_{day} or 55dB L_{night} or any property in which airborne noise level in excess of 90dB SEL occurs.	Continue to spend the full NIS budget annually.	**Ongoing - full budget spent in 2019.**
4.2	We will conduct an annual survey of those properties who have received noise insulation to measure the levels of satisfaction with the current Noise Insulation Scheme.	Ground/ Departure/ Arrival Noise	2019- 2023	Annual Survey Results.	N/A	Conduct annual survey of insulated properties by the following February. Report results of survey to Noise and Track Sub-Committee.	**Ongoing**
4.3	We will offer households exposed to levels of noise of 69dB $L_{Aeq\ 16h}$ or more assistance with the cost of moving.	Ground/ Departure/ Arrival Noise	Ongoing	Evidence in AMR.	Residents within 69dB L_{AEQ}	Continue to offer assistance.	**Ongoing - no properties within this contour.**
4.4	We will work with community stakeholders to develop a plan to protect quiet areas as defined by UK government policy.	Ground/ Departure/ Arrival Noise	2020	Evidence of Plan.	Residents within and beyond 55dB L_{den}	Develop a plan by 2020 and ensure this is protecting quiet areas.	**Ongoing**
4.5	Through the Airspace Change Process we will ensure areas identified as 'quiet areas' are preserved as far as possible. 'Quiet Areas' will be defined and assessed as per government legislation.	Ground/ Departure/ Arrival Noise	Ongoing	Stages in CAP 1616 process.	Residents within and beyond 55dB L_{den}	Preserve quiet areas through Airspace Change Process as far as possible.	**Ongoing**
4.6	We will work with local authorities to raise awareness of the impacts of siting new developments that may be affected by aircraft noise.	Ground/ Departure/ Arrival Noise	Ongoing	Local Planning Group meeting minutes.	N/A	Increase awareness for local authorities through our Local Planning Group.	**Ongoing**

5: Working with the Local Community and Industry Partners

Ref:	Action	Impact	Timescale	Performance Indicator	Numbers Affected	Target	Progress to date
5.1	Carry out biennial surveys of local communities to seek feedback on our approach to noise management and our complaints service for continual improvement and to offer the ability for local communities to help shape the future of noise controls.	Community relationship	2019 / 2020	Results of Survey.	N/A	Carry out first survey in 2019 to define baseline and set improvements in 2020.	**Incomplete - new target, to complete survey by end of 2020.**
5.2	We will improve communications through regular updates to our website, noise blog, community newsletters (Inform) and reports.	Community relationship	Ongoing	Evidence of comms. on website.	N/A	Review website annually and publish newsletter bi-monthly.	**Ongoing**
5.3	We will positively respond to requests for meetings with airport representatives regarding aircraft noise, airspace modernisation and expansion plans*.	Community relationship	Ongoing	Minutes of meetings.	N/A	Engage proactively with any visitors to the airport, as well as visiting local residents.	**Ongoing**
5.4	We will regularly organise public drop in sessions in locations surrounding the airport for community members to visit and speak to airport employees about noise management.	Community relationship	Ongoing	Evidence in QMR and AMR.	N/A	Organise and attend at least 6 Public Surgery drop-In events each year.	**Ongoing**
5.5	We will log all enquiries and complaints relating to airport operations and publish complaint statistics in our QMR & AMR.	Community relationship	Ongoing	Evidence in QMR and AMR.	N/A	Regularly publish statistics in monitoring reports on quarterly and annual basis.	**Ongoing**
5.6	We will annually monitor the Noise Action Plan (NAP) actions with LLACC and where we recognise that further improvements can potentially be achieved; we will look to address it.	Community relationship	Ongoing	Evidence in AMR.	N/A	Publish NAP update in the AMR annually.	**Ongoing**
5.7	We will give the public access to our online noise and track monitoring system (TraVis) and work with the supplier to enhance future functionality.	Community relationship	Ongoing	Evidence of TraVis website.	N/A	Maintain and enhance functionality of TraVis system.	**Ongoing**
5.8	We will divert all money raised from noise and track violations penalty schemes into the Community Trust Fund (CTF).	Community relationship	Ongoing	Evidence in annual Community Strategy and AMR.	N/A	Annually publish the amount of money diverted to the CTF.	**Ongoing**

*expansion of the airport is currently being sought by the airport owners, more detail will be provided as and when it becomes available. Any increase in noise will be addressed through this application process.

Ref:	Action	Impact	Timescale	Performance Indicator	Numbers Affected	Target	Progress to date
5.9	We will produce and publish Quarterly Monitoring reports to inform Stakeholders of performance trends and noise management at London Luton Airport.	Community relationship	Ongoing	QMR published on website.	N/A	Publish reports on our website at earliest opportunity each quarter.	**Ongoing**
5.10	We will continue to present summer and annual noise contours within our Annual Monitoring Report.	Community relationship	Ongoing	Evidence in AMR.	N/A	Publish contour statistics in Annual Monitoring Reports.	**Ongoing**
5.11	We will continue to produce and publish an Annual Monitoring Report to inform stakeholders of performance trends and noise management at London Luton Airport.	Community relationship	Ongoing	AMR published on website.	N/A	Publish AMR on our website by 31st May each year.	**Ongoing**
5.12	We will engage proactively with LLACC and NTSC to identify initiatives which will help minimise noise in our local community.	Community relationship	Ongoing	Minutes of Meetings.	N/A	Meet with LLACC and NTSC every 3 months.	**Ongoing**
5.13	We will collaborate with our Flight Operations Committee (FLOPC) to determine new initiatives to reduce noise.	Community relationship	Ongoing	Minutes of FLOPC meetings.	N/A	Engage proactively with FLOPC at meetings held twice a year.	**Ongoing**

Employment

Employment at and surrounding London Luton Airport (LLA) contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the Airport. Thus, any analysis of the Airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the Airport boundary has been conducted, the results of which are summarised below. These figures were calculated from 2019 data produced prior to the COVID-19 lock-down period.

A list of businesses at London Luton Airport was matched with the Inter Departmental Business Register (IDBR). The IDBR dataset produced by the Office for National Statistics (ONS) is a comprehensive list of UK businesses that is used by the government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analysis of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted. (Source: ONS website www.statistics.gov.uk).

An initial list was received from London Luton Airport of companies within their boundary. The listing was matched against the IDBR. Companies outside the airport boundary were identified by the street names/areas as follows:

- Spittlesea Road
- Part of Frank Lester Way
- President Way
- Wigmore House
- Part of airport Way
- Barratt Industrial Park
- Airport Executive Park

A handful of companies which appeared on the list, but not the IDBR, had imputed estimates from analysis of the size of the enterprise and information from the airport.

Total employment in and around the airport

Employment was measured using main section headings from the Standard Industrial Classification 2007 (SIC 2007). Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	500
Administrative and Support Service Activities	2,600
Financial and Insurance Activities	<100*
Manufacturing	800
Professional, Scientific and Technical Activities	<100*
Public Administration & Defence; Compulsory Social Security	300
Real Estate Activities	<100*
Transportation and Storage	5,500
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	700
Grand Total	**11,200**

** - Figures have been suppressed where there are less than three companies in a given Sector and/ or employment in that sector is less than 100 in accordance with the regulations covering the use of IBDR data. Standard Industrial Classification 2007 industrial sector codes have been used.*

Due to confidentiality issues we are bound by ONS protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

The table illustrates that there are an estimated 11,200 employees in and around the Airport. This has increased by 800 since 2018, a rise of 8%. There are 9,500 full time and 1,700 part time employees.

Employment by working pattern

The IDBR provides employment figures by full and part time working patterns. The total number of full time employees was 9,500 which increased by 800 between 2018 and 2019, a growth of 9 per cent. The figure for part time employees was 1,700 which was the same as last year's figure.

The percentage split of full/part time employees found at the Airport compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of LLA	85%	15%
Luton UA	67%	33%

Source for Luton UA Figures: ONS Business Register & Employment Survey 2018, latest data. Figures are percentages of those in employment.

Full and part-time working patterns in the vicinity of the Airport differs from that found within Luton as a whole, with the Airport having a higher proportion of full time workers.

Time series

The following figures from 2012 to 2018 show the estimated employment levels in the vicinity of the Airport.

Source: AMR Employment Surveys 2012- 2019

There was an increase in employment between 2018 and 2019 around Luton Airport with approximately 11,200 employees working in the vicinity of the Airport in 2019. There has been employment growth related to the airport since 2016.

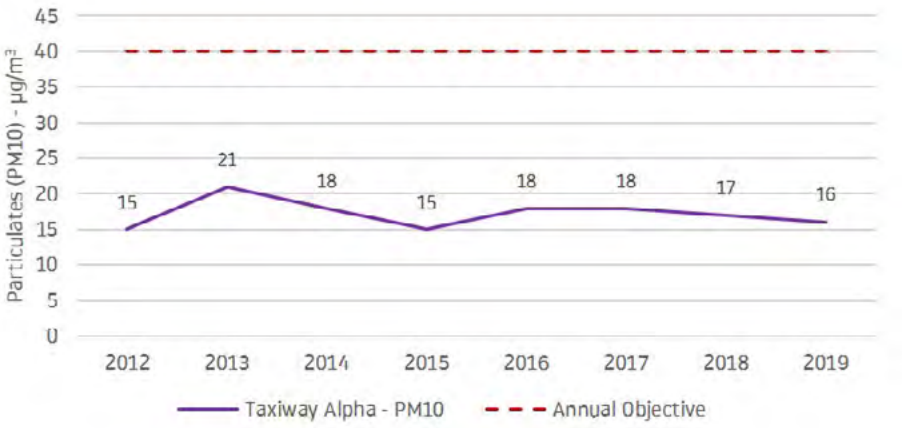
Air Quality

London Luton Airport has been monitoring air quality in and around the Airport environment since 2003. Air quality data collected at LLA is integrated into a monitoring programme incorporating data collected by the surrounding Local Authorities, with a monthly report available to view online at http://www.airqualityengland.co.uk. The parameters measured are PM10 and NO2.

PM_{10} (Particulates measuring 10µm or less)

PM_{10} is one of the main contributors to reduced ambient air quality. Particulate matter is made up of fine particles including dust and soot which are suspended in the air. When you breathe in these particles they can stick to the surface of your lungs, and in areas of high pollution can cause respiratory health problems. Local sources include emissions from vehicles and aircraft engines, wear of brakes, tyres, and construction debris.

PM_{10} is monitored from one location in the middle of the airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg/m³.



Nitrogen Dioxide (NO_2)

NO_2 in high concentrations can cause a wide variety of health and environmental impacts. The gas is produced from the combustion of fuels such as diesel and aviation fuel. NO_2 is currently measured using diffusion tubes, which are a simple air quality assessment tool that give an indication of longer-term average NO_2 concentrations.

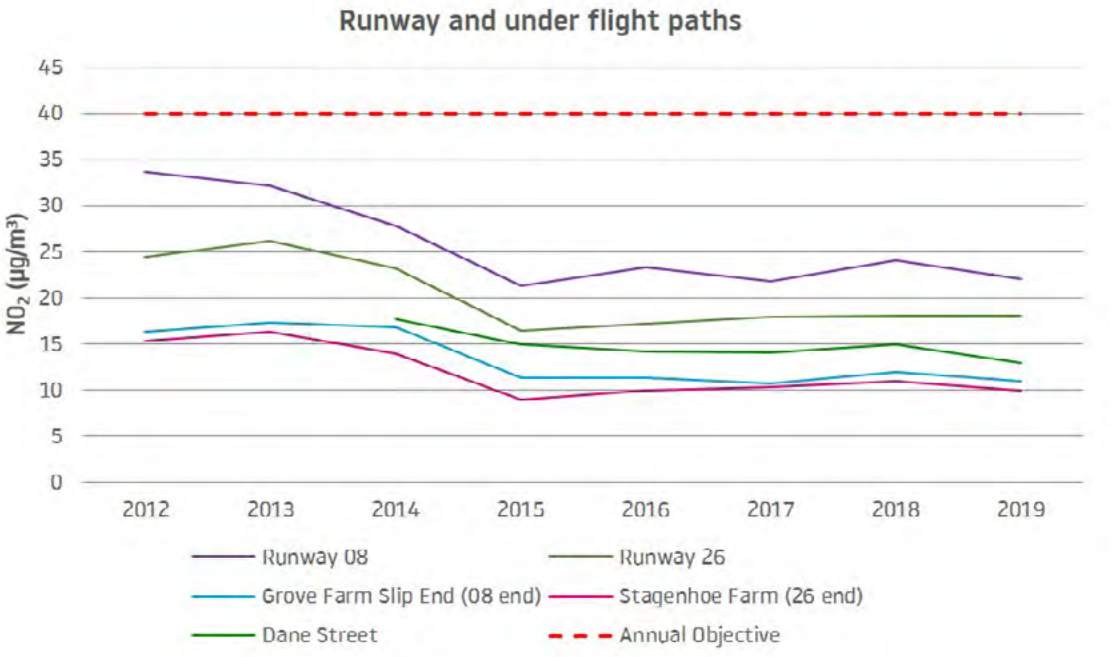
Diffusion tubes are used in 18 locations around LLA and the results provide a monthly average concentration of NO_2. To ensure accuracy of data, we also apply a bias-adjustment factor using national database factors.

• The long term (annual mean) local air quality objective for NO_2 is 40µg/m³.

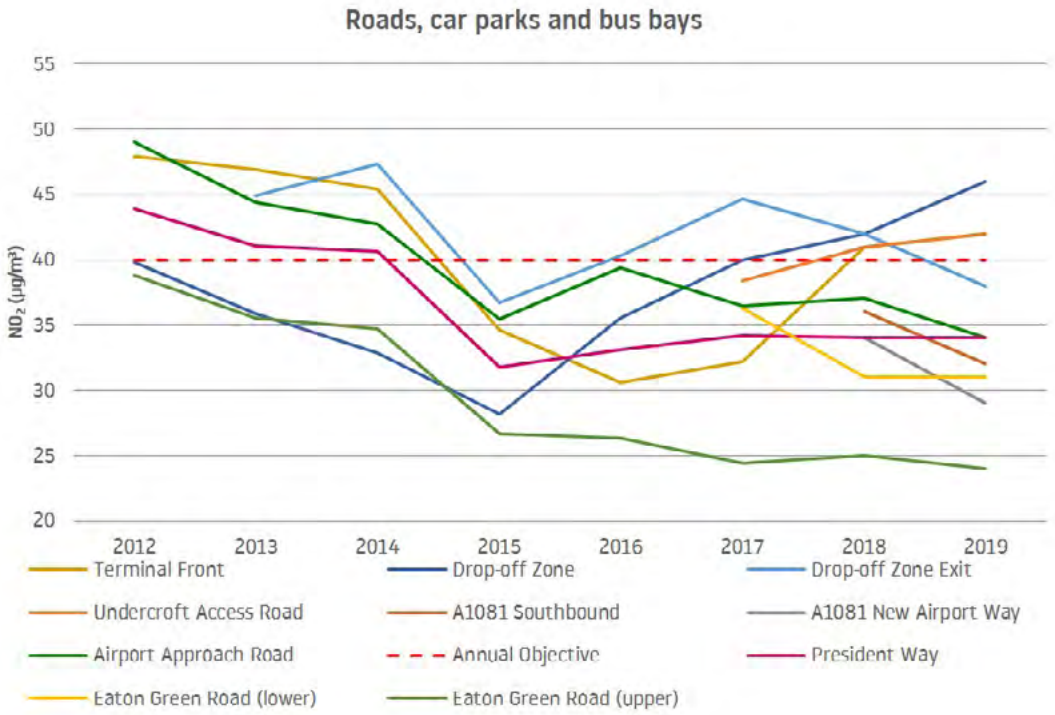
In 2019, we also started a trial of a new monitor that monitors NO_2 concentrations continuously. The monitor is currently located in the drop-off zone (see results on next page).

• The short term (1-hour mean) local air quality objective for NO_2 is 200µg/m³.

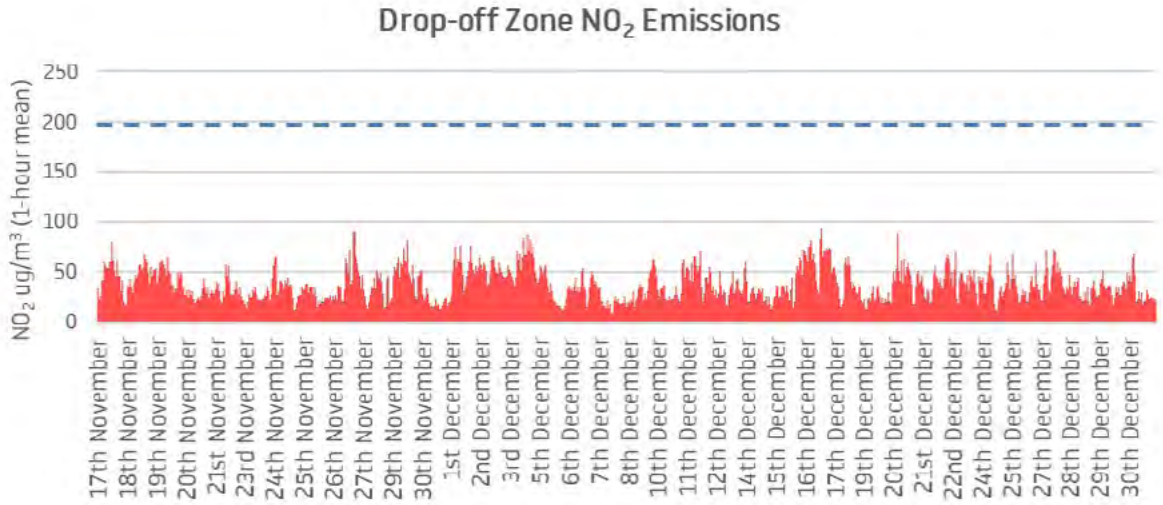
NO_2 levels at the closest residential receptors to the airport, and also along the aircraft flight paths have all seen a slight reduction compared to 2018 results and are significantly below the objective level laid out in the Air Quality (England) Regulations 2000 (as amended).



Levels monitored by the roads around the airport and in the car parks & bus bays are a little higher (graph on next page), with the locations at the drop-off zone, undercroft access road and the terminal front slightly exceeding the annual mean objective of 40 µg/m³ (that said, the objective is only strictly applicable in locations where public can be 24 hours a day such as residential locations).



Towards the end of 2019, we opened a new drop-off zone which is located on the ground floor of the Terminal Car Park 2. To assess the air quality within the drop-off zone, we installed a new monitor that continuously measures NO_2 emissions. The results were assessed against the UK 1-hour mean objective of 200ug/m³ – the below charts demonstrates that there were no exceedances of the 1-hour mean objective for NO_2.



Surface Access

LLA aims to improve access to the terminal, particularly by public transport in order to reduce the contribution that journeys make to total airport-related CO2 emissions and also to air pollution. The previous Airport Surface Access Strategy (ASAS) expired in July 2017 and has since been replaced by the 2018–2022 ASAS, comprising a summary document and a fuller supporting technical report. The 2018-2022 ASAS was reissued in 2019, to provide an update on the projects and steps taken towards LLA's sustainable travel targets. The objectives of the ASAS are to:

1. Promote and encourage sustainable surface transport options for employees and passengers;
2. Reduce the impact of surface access to the airport on the local community.

These targets are being monitored regularly, as part of the wider Local Transport Plan 3 (LTP) monitoring framework. The LTP was published in March 2011 and includes a long-term strategy for the period up to 2026. The LTP long-term vision involves providing an integrated, safe, accessible and more sustainable transport system which supports economic regeneration, prosperity and planned growth in the Luton conurbation. LLA's Surface Access Targets fully support the LTP's vision for an increased focus on the delivery of high quality, high capacity public transport.

Modes of Transport

LLA is well-placed in relation to many areas of the UK, and benefits from excellent accessibility by road and rail. It is located close to the M1 Motorway, linking London with the East Midlands and North East. It is also situated close to Luton Airport Parkway Railway Station, with local, regional and long-distance services calling at this station, including frequent direct services to Central London and the South-East. The bus and coach interchange at the airport provides extensive local, regional and long-distance journeys, with a range of operators providing services. Major changes are currently underway both at the airport and in the vicinity, to improve surface access modes. For example, work continues on the DART system, which will connect LLA with Luton Airport Parkway Railway Station in less than four minutes from circa Q3 of 2021.

Passenger mode share

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLA uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table below shows the weighted CAA data for 2012-2019. The CAA statistics suggest that 38% of airport passengers chose to use the public transport methods of rail, bus or coach in 2019.

%	2012	2013	2014	2015	2016	2017	2018	2019
Drop Off	27	28	25	27	28	43	45	45
Car Park	23	23	28	27	23	20	17	16
Rail	17	16	14	16	16	17	17	21
Bus/Coach	16	16	15	15	16	16	16	17

Whilst the figures have remained fairly static for the last few years, LLA continues to work to promote the use of sustainable transport, examples of which are given below.

The Bus and Coach Station adjacent to the terminal has been significantly improved. Coach and bus services are now closer in proximity to the terminal than other transport options, to encourage growth in sustainable surface access modes. Sufficient bays are available to accommodate anticipated growth in bus and coach use. A new canopy was installed in Q1 2019, providing cover to passengers waiting for onward travel services within the Central Terminal Area, and further improvements to the canopy are expected in 2020. Enhancements to the bay signage has recently facilitated optimal operational use of the area, and to further this development, digital information totems will soon be installed at each of the 18 bays, providing frequency information and enhanced wayfinding.

In the realm of rail, Luton Council's airport company, London Luton Airport Ltd (LLAL), is building the DART, a state-of-the-art, £225m fast transit system that will link London Luton Airport with Luton Airport Parkway station in under four minutes. The aim of the project is to support a seamless journey from St Pancras to the UK's fifth biggest airport in just 30 minutes, and to achieve a reduction in the number of passengers travelling to and from the airport by private car. The DART is intended to be brought into operation in 2021.

LLA recognises that access via private car, and the use of car rental services, is required for passengers that need increased flexibility beyond the offering of public transport options. To reduce carbon emissions associated with these modes, electric charging points are in use across both staff and passenger car parks, alongside an "Electric Vehicle Tariff," allowing for 30 minutes access for a significantly reduced rate versus the standard access fee. LLA is committed to working closely with the on-site car hire suppliers to introduce environmentally friendly transport initiatives, such as hybrid or electric vehicles.

Staff mode share

LLA aims to reduce the proportion of staff travelling alone by car to and from London Luton Airport. Whilst employee travel does not generate as many trips as passengers, it remains an important consideration, due to the frequency of a commute. Staff travel surveys are undertaken once every 2 years, the results for which are presented below.

%	2010	2012	2014	2016	2018
Drive alone	66	66	62	68	59
Car share	12	8	11	7	8
Taxi	1	1	0	1	1
Motorcycle	1	1	1	1	1
Rail	5	5	10	7	8
Bus/Coach	7	9	8	9	16
Cycle	2	2	2	2	2
Walk	5	6	7	5	6

Staff Travel – Progress vs. Airport Surface Access Strategy

The Airports Surface Access Stragey (ASAS) also involves reducing Single Occupancy Vehicles (SOV) use and carbon emissions while enhancing the environment and improving the community's health and quality of life.

The strategy has a target to directly contribute to a reduction in SOV travel by employees to and from LLA. Employee single occupancy vehicle (SOV) travel has achieved the 2016 and 2019 targets, achieving 59.4% mode share in the latest 2019 Staff Travel Survey versus a target of 66%. This is seen in the table below.

	2016	2019	2022
Target	68%	66%	64%
Result	68%	59%	

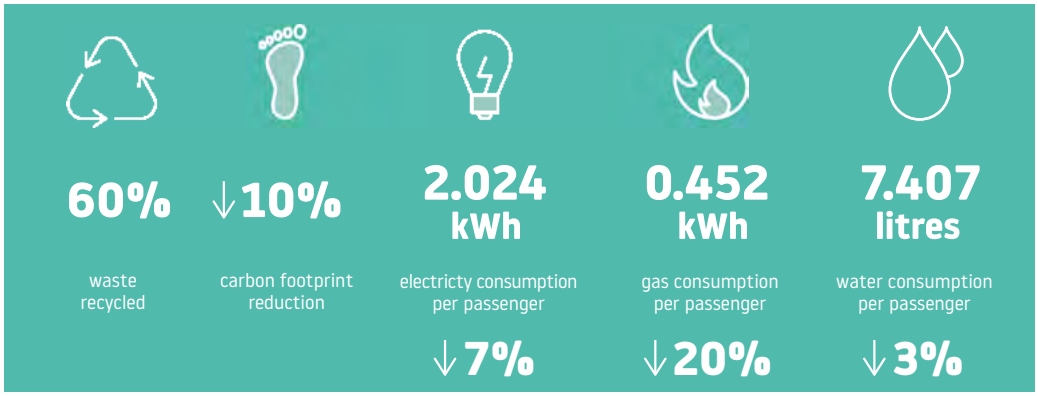
More information on the Airport Surface Access Strategy can be found at: https://www.london-luton.co.uk/corporate/lla-publications/surface-access-strategy

Sustainability

London Luton Airport is committed to operating in a way that maximises the socio-economic benefits for the local and regional area whilst minimising the environmental impacts. To ensure this vision is shared and supported, we work closely with airlines, stakeholders and business partners to promote this approach across the airport, ensuring that the full benefits that London Luton Airport can bring to the region are realised.

LLAOL aims to continuously improve on environmental performance in key areas across the airport.

Our key achievements in 2019 include:
Accreditation with **Airport Carbon Accreditation Scheme**
10% reduction in carbon footprint Equivalent to around 16 trips around the planet Earth in an average diesel car
Winner of Energy Awards 2019 (Energy Champion of the Year category)
60% of waste recycled
20% reduction in gas usage per passenger
7% reduction in electricity usage per passenger
3% reduction in water usage per passenger
Maintained the ISO14001 and ISO50001 international accreditation standards for Environmental and Energy Management Systems.



Waste Reduction and Recycling

We've continued to work closely with our teams, concessionaires and other 3rd parties to reduce waste at source and segregate recyclable waste such as glass, food, carboard and mixed recycling. We've also continued to work with our waste provider to ensure waste operatives carry out additional waste sorting to increase the amount of waste that's recycled before it leaves the airport. Despite significant changes in the global recycling market, we achieved 60% recycling rate.

In 2019, we also introduced a new scheme whereby confiscated items collected from passengers at airport security, that would otherwise be disposed of as waste, are now donated to Luton Food Bank. So far, over 100,000 items have been donated in turn reducing our volumes of waste.

Energy and Carbon

Over the last year, we've focused on taking a 'deep dive' into our energy and fuel usage data to identify and understand significant opportunities where usage can be reduced through operational controls and our building management system. We've also improved the way we use the data by installing minimum / maximum tolerances, which allows for early identification and investigation of peaks in consumption.

As part of the upgrades to the main terminal building and the wider airport, we've gradually replaced lighting with LED equivalents as well as reduced the number of lights – throughout 2019, we've upgraded lighting in domestic and international arrivals as well as the central search and the onward travel centre.

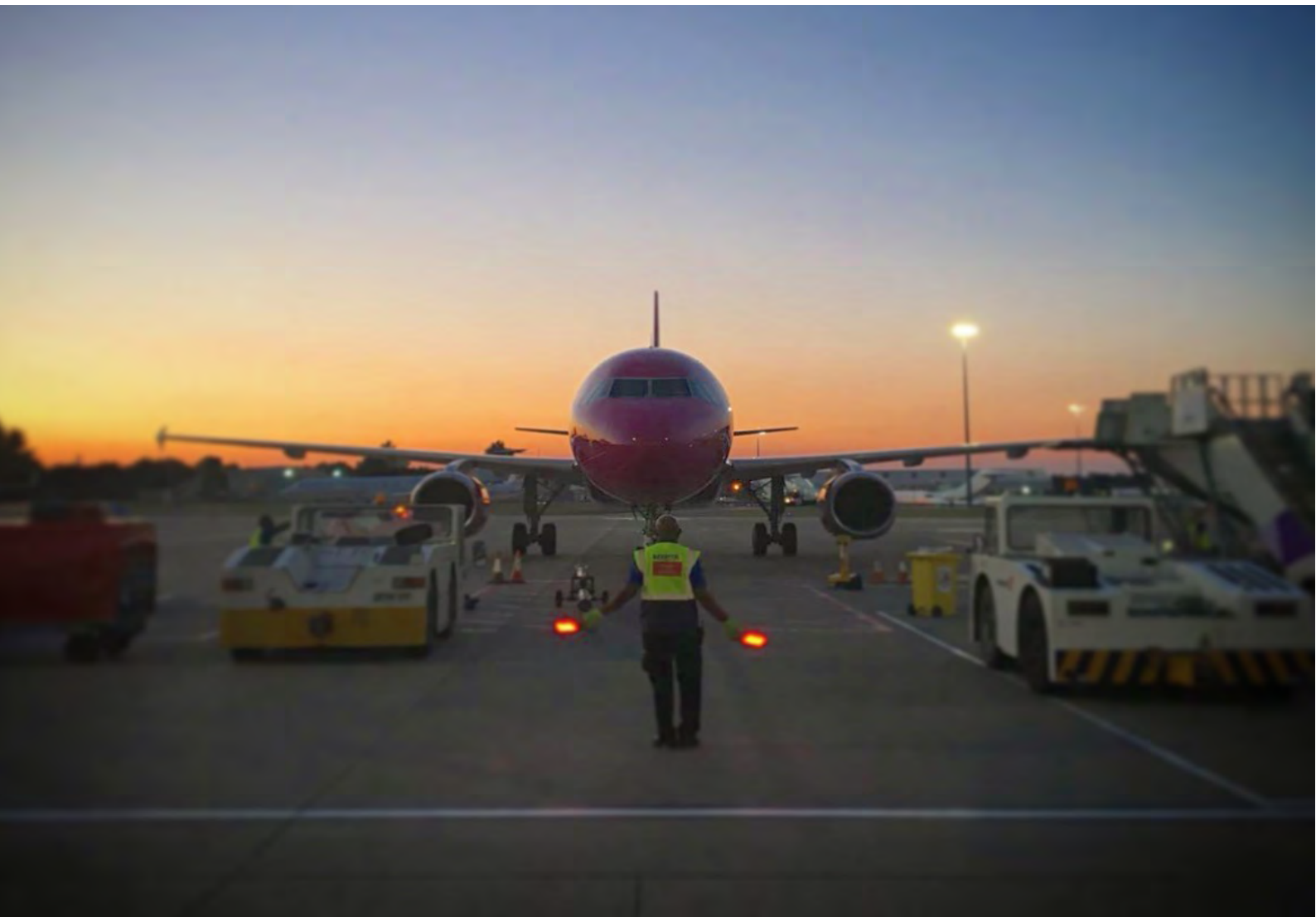
To reduce our gas consumption, we've started an airport wide boiler upgrades to more efficient boilers. This work started with upgrading Cargo and Fire Station boilers, which was completed in 2018. We continued this work in 2019 which saw upgrades to the four boilers heating our main terminal building. This resulted in notable gas consumption savings – compared to 2018, our gas consumption has reduced by over 16% in total which is equivalent to 0.45kWh per passenger.

Our continued focus to identify opportunities to reduce energy consumption have resulted in a saving of 1294 tonnes of CO2e; this is a 10% reduction compared to 2018.

We've also achieved accreditation with the Airport Carbon Accreditation Scheme.

Water

As part of our continuous maintenance and upgrades to washroom facilities, we've ensured that all facilities have been installed with water efficient fixtures.



Planning and Development

Through its Local Plan, Luton Borough Council (the Council) sets out local planning policies and identifies how land is used, determining what will be built where. The Council also is responsible for the Local Transport Plan (LTP) providing policies, strategies and schemes primarily for Luton, though the LTP does refer to strategic transport and infrastructure and other cross boundary matters for the whole conurbation (Dunstable and the Houghton Regis area).

Local Plan

The Luton Local Plan (2011-2031) was adopted in November 2017. The adopted Local Pan is a strategic document setting out the vision, objectives and spatial planning strategy for the whole of Luton Borough Council's area for the period up to 2031.
It comprises the following document and accompanying plans:

- Luton Local Plan (2011-31), November 2017
- policies map
- town centre inset

These can be viewed by visiting the following page on the Council's website:
https://www.luton.gov.uk/Environment/Planning/Regional%20and%20local%20planning/Pages/Local%20Plan%202011%20-%202031.aspx

Policy LLP6 of the Local Plan covers the London Luton Airport strategic allocation, an area of 325 hectares, identified on the policies map, including land within the airport boundary, Century Park and Wigmore Valley Park.

Planning Applications

The permission to expand the airport to allow an increase to up to 18 million passengers per annum (mppa), granted in 2014 (Council reference 12/01400/FUL), has been fully implemented.

Work commenced on the construction of the Direct Air Rail Transit (Luton DART) system in April 2018, with the 'gateway' bridge over the A1081 being placed in position in December 2019 following its construction adjacent to the Airport Way roundabout at the entrance to the airport (ref: 18/01049/FUL). It is anticipated that the DART linking Luton Airport Parkway station and the airport terminal will be open in 2021.

In March 2019 the Development Control Committee resolved to grant planning permission for the New Century Park development (ref: 17/02300/EIA), with the Secretary of State confirming in July that the application was not to be called in, but rather the local planning authority could grant planning permission. The legal agreement associated with this proposal has yet to be signed.

Separately, in February 2019 the airport owner, London Luton Airport Limited (LLAL), put forward its preferred option for the expansion of the airport. This would be a Nationally Significant Infrastructure Project (NSIP) as defined by the Planning Act 2008, with the proposal requiring an application for a Development Consent Order and determination by the Secretary of State. In May 2019 the Planning Inspectorate (PINS) issued its scoping opinion following a scoping request from LLAL in March. In October 2019 LLAL began a consultation on its expansion proposals, producing a Preliminary Environmental Impact Report, and holding exhibitions in 34 separate locations. The consultation concluded on 16 December 2019, with the results of the consultation due to be published in 2020.

Hotel developments

The Luton hotel market is very much dominated by airport related demand, from passengers and crew, with the Luton Hotel Study (July 2015) indicating that demand was likely to continue to grow.

The following hotel developments have been granted planning permission, are being implemented, or are still under consideration, since the table in the 2016 AMR was produced –

Site address	Current status of application	Number of bedrooms
Bartlett Square	Planning permission for 172 bedroom hotel recommended for approval subject to the signing of a legal agreement in November 2018 (still pending in 2019)	172
Napier Gateway (part of the Napier Park site)	Mixed development including 209 bedroom hotel (still to be built)	209
Power Court (Town Centre)	Outline permission for football stadium and associated infrastructure granted planning permission September 2019 (yet to be implemented)	150
Land adjoining junction 10 to junction 10A of M1	Outline application for mixed use development including a hotel granted planning permission September 2019 (yet to be implemented)	350
Former Honda Garage, Cumberland Street (Town Centre)	Five to seven storey hotel (resubmission) granted planning permission in March 2018 (still to be implemented)	235
Phoenix House (Town Centre)	Change of use to hotel granted planning permission August 2017 (development still to be completed)	78
Prudence Place, Proctor Way	Demolition of existing buildings and erection of four storey hotel with undercroft parking granted permission in July 2018 (still to be implemented)	92
New Century Park	Planning permission for 145 bedroom hotel recommended for approval subject to the signing of a legal agreement in March 2019 (still pending in 2019)	145
15-23 Manchester Street (Town Centre)	Planning permission was granted for the change of use of the upper floors to 39 bedroom hotel in January 2019 (yet to be implemented)	39

National Aviation Policy

The Aviation Policy Framework (APF) published by the Coalition Government in March 2013 set out the Government's policy on aviation. The APF focuses on the benefits of aviation to the UK economy as well as its environmental impacts.

The 'Airports National Policy Statement: new runway capacity and infrastructure at airports in the south-east of England' (the Airports NPS) was designated on 26 June 2018. The Airports NPS provides the primary basis for decision making in relation to the Development Consent Order (DCO) for a new runway at Heathrow, whilst also being an important and relevant consideration in respect of applications for new runway capacity in London and the south east of England.

The Airports NPS sets out:
• The Government's policy on the need for new airport capacity in the South East of England;
• The Government's preferred location and scheme to deliver new capacity (the Heathrow Northwest Runway); and
• Particular considerations relevant to a development consent application to which the Airports NPS relates.

The Airports NPS includes policies that will be important and relevant for any nationally significant infrastructure project (NSIP) related to airports in the south east of England.

It should be noted that five applications for judicial review of the Airports NPS were dismissed by the High Court in May 2019 – though permission was granted to apply for a judicial review to the Court of Appeal (these were heard in October 2019 with further written submissions in November and judgement scheduled to be handed down in 2020).

Between December 2018 and April 2019 the Government sought feedback on its proposed new aviation strategy: 'Aviation 2050: The Future of UK Aviation'. The strategy is to focus on: balancing growth from passenger demand with action to reduce environmental and community impacts; improving the passenger experience; and building on the UK's success of establishing new routes and greater choice.

Local Transport Plan (LTP)

The current LTP is the third local transport plan produced by the Council in April 2011, which sets out how the Council will deal with transport matters in and around Luton. It comprises three parts, namely:

• A long term Transport Strategy up to 2026. With regard to the transport affecting the, airport this sets out anticipated passenger numbers of between 15.5mppa and 18mppa by 2026, together with an additional 3,000 employees;
• A series of Transport Policies, setting out how those will be implemented; and
• An Implementation Plan covering the five year period from the date of the LTP, which is reviewed annually. This includes a number of key elements that are relevant to the airport, such as: a focus on smarter choices and travel by more sustainable modes; implementation of a new entrance from the north to Luton Airport Parkway Station; and an extension of Airport Way to serve planned employment sites to the east of the airport.

The Luton DART was not specifically mentioned in the LTP, but it will serve to improve access from Luton Airport Parkway Station to the airport as well as encouraging a modal shift away from the use of private cars to public transport.

The LTP strategy also refers to the role of the Airport Surface Access Strategy (ASAS) in promoting sustainable travel to the airport for both passengers and employees, and the Council will work with