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January 2024

London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 8 Additional Submissions (Examination)

8.170 Applicant's Response to Issue Specific Hearing 9 Actions 8, 19 and 20 - Quota Count Noise Controls

Infrastructure Planning (Examination Procedure) Rules 2010

Application Document Ref: TR020001/APP/8.170

The Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

London Luton Airport Expansion Development Consent Order 202x

8.170 Applicant's Response to Issue Specific Hearing 9 Actions 8, 19 and 20: Quota Count Noise Controls

Deadline:	Deadline 7
Planning Inspectorate Scheme Reference:	TR020001
Document Reference:	TR020001/APP/8.170
Author:	Luton Rising

Version	Date	Status of Version
Issue 1	January 2024	Additional Submissions – Deadline 7

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1 INTRODUCTION

1.1.1 This document has been prepared by Luton Rising (a trading name of London Luton Airport Limited) ('the Applicant') for submission to the Examining Authority ('ExA').

1.1.2 The document provides additional information in response to Actions 8, 19 and 20 from the ExA's Action Points **[EV16-009]** following Issue Specific Hearing 9 (ISH9) held on 30 November 2023. The individual actions are addressed throughout the document as set out in Table 1-1.

Table 1-1: Actions addressed in this document

ISH9 Action	Action	Location of response
8	Provide a response on whether the airport could introduce a local rule from the start of DCO operations that would restrict slot allocations to meet the relevant noise contour/ noise quota count point limit. If this is the case, confirm if the Applicant could commit to this.	Section 5
19	Provide indicative quota count point limits to enable a benchmarking exercise against equivalent data (eg Air Traffic Movements (ATM), quota count point limit and contour limits for other similar airports).	Section 2 and Section 3.1
20	Provide information on the spread of travel into the non-summer season (see section 6 of need case [AS-125]). Clarify whether the quota count point limit should be defined for both the summer and winter periods.	Section 3.2

2 BENCHMARKING OF NOISE CONTROLS

2.1.1 **ISH9 Action 19:** Provide indicative quota count point limits to enable a benchmarking exercise against equivalent data (eg Air Traffic Movements (ATM), quota count point limit and contour limits for other similar airports).

2.1.2 As part of the Aviation 2050 consultation, the Civil Aviation Authority in CAP1731 (Ref 1) undertook a review of aircraft noise limits and their pros and cons, informed by a benchmarking exercise of noise controls at major airports, and provided recommendations for noise limit schemes. The conclusion of this exercise was the recommendation of (Applicant's emphasis):

"A locally set absolute Quota Count <u>or</u> noise contour area limit at a particular noise level for both day and night for each airport".

2.1.3 An updated benchmarking exercise has been undertaken for this document and the results of this benchmarking exercise are presented in a table in Appendix 1 to this document. Proposed control measures submitted as part of the application for development consent have been included for ease of comparison.

2.1.4 In line with ISH9 Action 19, the benchmarking exercise considers:

a. noise contour areas;

b. Quota Count (QC) limits; and

c. movement limits.

2.1.5 For the airports considered, the results of the benchmarking exercise show that:

a. where noise contour area Limits are imposed, they are always over the 92-day summer only rather than annual, and there are usually separate limits for day and night;

b. all airports have some form of movement limit, either over the full 24-hour period or the Night Quota Period[1], or a combination of both; and

c. for all airports that have QC Limits, with the exception of London City Airport, the QC Limits apply for the Night Quota Period, and there are no separate QC Limits for shoulder periods or any other period.

2.1.6 It is therefore considered that the contour area Limits, Quota Count Limits and Night Quota Period movement Limits for the Proposed Development are robust, in line with best practice in airport noise control and in line with the CAA recommendations in CAP1731.

2.1.7 In addition, the Proposed Development has additional noise controls as listed in the **Air Noise Management Plan [TR020001/APP/8.125]** and set out in the **Comparison of consented and proposed operational noise controls [REP5-014].**

3 QC CONTROLS FOR THE PROPOSED DEVELOPMENT

3.1 Indicative QC budgets

3.1.1 As set out in paragraph 3.1.7 of the **Green Controlled Growth (GCG) Framework [TR020001/APP/7.08]**, the airport operator is required to use QC budgets derived from the noise contour area Limits and Thresholds as part of slot management and capacity declaration. As noted in response to Written Question NO.2.7 **[TR020001/APP/8.156],** QCs are a useful tool for forward planning purposes, but have certain weaknesses which mean that the ultimate compliance with GCG Limits is based on noise contour areas.

3.1.2 QC budgets have been calculated from noise contour limits and thresholds in Table 3.1 of the **Green Controlled Growth Framework [TR020001/APP/7.08]**. Formulas were applied from regression analysis in the **Noise Envelope – Improvements and worked example [REP2-032].** As the daytime regression analysis was undertaken for the historic 57 dB $L_{Aeq,16h}$ noise contours from 2015-2019, the analysis has been repeated using the historic 54 dB $L_{Aeq,16h}$ to align with the daytime noise contour metric of 54 dB $L_{Aeq,16h}$. The updated regression analysis provides a conversion formula of:

[1] Birmingham Airport's movement Limit is over a slightly different time period of 23:00 – 05:00 which whilst different from the Night Quota Period (23:30 – 06:00) is still distinct from the full night period of 23:00 – 07:00

a. QC = (contour_area – 5.1872) / 0.0026

3.1.3 The indicative QC budgets that would be derived from the Noise Envelope Limits and Thresholds are presented in Table 3-1 , rounded to the nearest 10.

3.1.4 It is important to note that these are indicative QC budgets. As noted in the **Applicant's ISH9 Post Hearing Submission [REP6-067]**, the relationship between QC and contour area may change over time so there is a mechanism to review and update that correlation over time to ensure there remains a strong correlation with the contour area Limit (see footnote 1 of paragraph 3.1.7 of the **Green Controlled Growth Framework [TR020001/APP/7.08]**). For example, once Article 44(1) has been triggered and the **Green Controlled Growth** Framework for noise is in place, the actual QC budgets would be derived from a regression analysis of the relationship between scheduled QCs and actual noise contours from the previous five-years of operation relative to that point in time.

Table 3-1 Indicative GCG / noise envelope 92-day summer QC budgets equivalent to noise contour Limits and Thresholds for aircraft noise

Day / Night	Up to 2028	2029 – 2033	2034 – 2038	2039 - 2043[2]	2044 onwards (in 5 year cycles)[2]
Day (07:00 – 23:00): indicative 92-day Quota Count (QC) budget to be used for forward planning purposes as described in 3.1.7 of GCG Framework to avoid breaching Noise Envelope contour area Limits	**QC budget ≡ to contour Limit**				
	10,930	10,620	9,810	10,540	10,540
	QC budget ≡ Level 2 Threshold (95% of limit)				
	10,270	10,010	9,240	9,930	9,930
	QC budget ≡ Level 1 Threshold (85% of Limit)				
	9,010	8,740	8,040	8,660	8,660
Night (23:00 – 07:00): indicative 92-day Quota Count (QC) budget to be used for forward planning purposes as described in 3.1.7 of GCG Framework to avoid breaching Noise Envelope contour area Limits	**QC budget ≡ to contour Limit**				
	2,260	2,170	2,040	2,190	2,190
	QC budget ≡ Level 2 Threshold (95% of limit)				
	2,160	2,070	1,940	2,080	2,080
	QC budget ≡ Level 1 Threshold (85% of Limit)				
	1,940	1,860	1,750	1,870	1,870

3.2 Noise control for the summer and winter season

3.2.1 **ISH9 Action 20:** Provide information on the spread of travel into the non-summer season (see section 6 of **Need Case [AS-125]**). Clarify whether the quota count point limit should be defined for both the summer and winter periods.

Spread of travel into the non-summer season

3.2.2 As noted in paragraph 4.8.9 of the **Applicant's ISH9 Post Hearing Submission [REP6-067]**, given the nature of traffic at London Luton Airport, there is expected to be limited spreading of activity away from the peak summer period. In 2019, the airport handled 10.4% of annual passengers in August compared to 10.6% at Gatwick and 10.2% at Stansted. Although peakier than Heathrow, the airport already operates with a flatter seasonal profile than most regional airports in the UK and there is little evidence, based on the profile at Stansted and Gatwick, there would be a substantial shift in the seasonal profile as the airport grows.

[2] Assumes that next-generation (low carbon) aircraft will be no quieter than the new-generation aircraft (e.g. B737Max and A321Neo). If these Limits were reduced following a Noise Limit Review, the QC budgets would be reduced in line.

3.2.3 Although the number of aircraft movements on the busiest day is not expected to grow as quickly as the total number of aircraft movements, reflecting some spreading of traffic as the airport grows (**Need Case [AS-125]**, paragraph 6.6.29), it expected that the effect will mainly be contained within the 92-day period for which the noise contour area Limits have been defined.

3.2.4 As acknowledged in the **Need Case [AS-125]** (paragraph 6.6.30), it was assumed that there could be some further spreading of traffic outside of the 92-day period into other months of the year and this was reflected in the October day indicative busy day timetable for the purpose of assessing the surface access impacts of the Proposed Development so as to represent a reasonable worst case for assessment purposes.

3.2.5 Similarly, in order to ensure that noise was assessed on a reasonable worst case basis, no further downward adjustment was made to the number of movements expected within the 92-day period to ensure that the noise implications of the Proposed Development were not understated.

3.2.6 Nonetheless, it is important to note that, whilst there may be some spreading of demand away from the absolute peak month, this is expected to be largely contained within the 92 day summer period, which will remain by far the busiest time of the year with over 28% of all aircraft movements, with all other periods of the year having fewer movements. This is consistent with historic trends as between 27.8% and 28.8% of all movements occurred in the 92-day period between 2016 and 2019.

Use of Quota Count budgets and their relation to summer and winter capacity declaration and slot allocation

3.2.7 As set out in paragraph 3.1.7 of the **Green Controlled Growth Framework [TR020001/APP/7.08]**, the airport operator is required to use QC budgets derived from the noise contour area Limits and Thresholds:

a. to inform forward planning of airport operations (both annual and five-year forward plan);

b. to incentivise airlines to operate the quietest aircraft available in response to the opportunity of growth;

c. as part of the bi-annual process[3] of slot management and capacity declaration; and

d. where in the forward plan the Level 2 Threshold Equivalent QC or Limit Equivalent QC is exceeded, to include within the annual Monitoring Report proposals for slot management measures, additional interventions or mitigation to ensure that the Limit will not be exceeded.

3.2.8 As noted in bullet c) of this list, the QC budgets must be used as part of the summer and winter slot management and capacity declaration. As these seasons are distinct from the 92-day summer[4], this will require generating QC

[3] Twice each year, once for winter and once for summer

[4] The summer scheduling season runs from the last Sunday of March to the last Saturday of October and the winter scheduling season runs from the last Sunday of October to the last Saturday of March

budgets for summer and winter seasons, which could be derived from forecast data or historical trends. These summer and winter QC budgets would have to be compatible with the 92-day summer QC budgets and the annual Night Quota Period (23:30 – 06:00) QC Limit.

3.2.9 This mechanism means that as well as the 92-day summer day and night contour area Limits there will be QC budgets and controls in place covering:

a. the 92-day summer (day and night);
b. the summer scheduling season;
c. the winter scheduling season; and
d. the Night Quota Period for the full year.

3.2.10 This combination of Limits and forward planning budgets is considered very robust and it is not therefore considered necessary to separately define QC Limits for the summer and winter periods as queried in ISH9 Action 20.

3.2.11 As noted in the benchmarking exercise in Section 2 it is considered that this is a robust combination of QC controls and contour area Limits and consistent with best practice.

4 ILLUSTRATIVE EXAMPLE OF QUOTA COUNT BUDGETS AND FIVE-YEAR FORWARD PLANNING

4.1.1 To demonstrate the above process, an illustrative example is provided for how the budgets and controls could work for the period up to 2028 using indicative QC budgets.

4.1.2 On triggering Article 44(1), the Green Controlled Growth Framework for noise would come into force. For this illustrative example, and assuming the article is triggered after the summer period in 2025[5], then the contour area Limits of 33.6 km^2 for the daytime $54dBL_{Aeq,16h}$ contour and 44.8 km^2 for the night-time $48dBL_{Aeq,8h}$ contour would apply. The airport operator would then use these current and future contour area Limits, and the current and future Thresholds below them, to derive QC budgets based on a regression analysis of QC counts and contour areas from 2021-2025 inclusive.

4.1.3 As the requirement is to use the budgets for a five-year forward plan, this forward plan would run to the next Noise Envelope period of 2029 – 2033, and would need to demonstrate that the reduced Limits and QC budgets could be met as the number of aircraft movements grows.

4.1.4 Table 4.1 provides an indication of the 92-day QC budgets that would be used (based on the indicative budgets in Table 3-1) to generate the five-year forward plan of slot management and capacity declaration. The airport operator would need to demonstrate that the five-year forward plan was capable of meeting these budgets by calculating QC counts from the five-year forecast. If those QC counts were to show that the Level 2 Threshold or Limit equivalent QC budgets

[5] Year chosen for illustrative purposes only. The principals of the worked example are relevant for other years.

were to be exceeded (for example if it were to show that the night-time forecast QC could be 2,125 in 2030), then the next Annual Monitoring Report in 2027 would need to include proposals for slot management measures, additional interventions or mitigation to ensure that the contour area Limit will not be exceeded (as per paragraph 3.1.7d of the **Green Controlled Growth Framework [TR020001/APP/7.08]**).

Table 4-1 Indicative QC budgets used in the five-year forward plan

92-day summer period	Indicative QC Budget up to 2028	Indictive QC Budget 2029 - 2033
Daytime Limit equivalent	10,930	10,620
Daytime L2 Threshold equivalent	10,270	10,010
Daytime L1 Threshold equivalent	9,010	8,740
Night-time Limit equivalent	2,260	2,170
Night-time L2 Threshold equivalent	2,160	2,070
Night-time L1 Threshold equivalent	1,940	1,860

4.1.5 As per paragraph 3.1.7c of the **Green Controlled Growth Framework [TR020001/APP/7.08]**, the airport operator would also need to use these QC budgets to inform summer and winter slot management and capacity declaration. An example of what this could look like for the 2027 scheduling season (the first scheduling season for this illustrative example) is provided in Table 4-2, based on the Environmental Statement Forecasts. These scheduling budgets would need to be compatible with the 92-day summer QC budgets, the 92-day summer contour area Limits and Thresholds and the annual Night Quota Period QC Limit.

Table 4-2: Indicative summer and winter scheduling season QC budgets

2027 scheduling period	Daytime QC budget for season	Night-time QC budget for season
Summer season	23,080	4,150
Winter season	13,710	1,730
Total annual	36,790	5,880

4.1.6 Importantly, this means there are annual QC budgets that cover the full night period (23:00 – 07:00) and, combined with the QC Limit for the Night Quota period (23:30 – 06:00), this provides a robust means of controlling the overall night period, including the shoulder periods. Any movements in the shoulder period would be taken from the full night period QC budget and would need to be compatible with the remaining budget left over for the shoulder periods once the Night Quota Period movements have been scheduled. For example, if the annual QC Limit of 3,500 in the Night Quota Period was taken up by movements scheduled in the period, it would leave a QC budget of 2,380 to be applied to movements in the shoulder periods. This also provides an incentive to minimise later running aircraft into the 23:00 – 23:30 period as these late running movements would eat into the QC budget.

5 LOCAL RULES

5.1.1 **ISH9 Action 8**: Provide a response on whether the airport could introduce a local rule from the start of DCO operations that would restrict slot allocations to meet the relevant noise contour/ noise quota count point limit. If this is the case, confirm if the Applicant could commit to this.

5.1.2 As noted in the **Applicant's ISH9 Post Hearing Submission [REP6-067]**, and as demonstrated in the worked examples in **Noise Envelope – Improvements and worked example [REP2-032]** and in Section 4 of this document, the GCG Framework and Noise Envelope have been designed around forward planning and the use of QC budgets in slot management and capacity declaration. Whilst Local Rules are also a tool available to the airport operator, it is considered that with appropriate forward planning it should not be necessary to employ Local Rules for the purpose of staying within the GCG contour area Limits. For this reason, it is not necessary nor appropriate to pre-define a local rule from the start of DCO operations as queried in ISH9 Action 8. In any event, the definition of any local rule needs to follow the established process under the slot allocation regulations and would need to be defined in conjunction with the Coordination Committee.

5.1.3 As noted in **Applicant's ISH9 Post Hearing Submission [REP6-067]** in response to ISH9 Action 10, updates have been made to Paragraph 23(11)(a) of Schedule 2 of **Draft Development Consent Order [TR020001/APP/2.01]** and paragraph 2.2.30 of the **Green Controlled Growth Explanatory Note [TR020001/APP/7.08]** to clarify that a Local Rule can be promoted at any point in the process if the airport operator considers it to be appropriate.

APPENDIX 1 – NOISE CONTROL BENCHMARKING

Airport	Noise Contour Limits		QC Limits			Movement Limit		
	Daytime	Night-time	Annual	Summer	Winter	Annual	Summer	Winter
London Luton Airport (**P19 Controls**)	<u>Up to 2027:</u> 57dB$L_{Aeq,16h}$ limit of 21.1km^2 <u>Post 2027:</u> 57dB$L_{Aeq,16h}$ limit of 15.5km^2 <u>Post 2030:</u> 57dB$L_{Aeq,16h}$ limit of 15.1km^2	<u>Up to 2027:</u> 48dB$L_{Aeq,8h}$ limit of 42.1km^2 <u>Post 2027:</u> 48dB$L_{Aeq,8h}$ limit of 35.5km^2 <u>Post 2030:</u> 48dB$L_{Aeq,8h}$ limit of 31.6km^2	<u>Up to 2027:</u> Night quota period QC limit of 3,500 <u>Post 2027:</u> Night quota period QC limit of 2,800	None	None	Night quota period annual movement limit of 9,650 Early morning shoulder period (06:00-07:00) movement limit of 7,000	None	None
London Luton Airport (**Proposed DCO Controls**)	<u>Up to 2028:</u> 54dB$L_{Aeq,16h}$ limit of 33.6km^2 <u>2029-2033:</u> 54dB$L_{Aeq,16h}$ limit of 32.8km^2 <u>2034-2038:</u> 54dB$L_{Aeq,16h}$ limit of 30.7km^2 <u>2039-2043:</u> 54dB$L_{Aeq,16h}$ limit of 32.6km^2 <u>2043 onwards:</u> 54dB$L_{Aeq,16h}$ limit of 32.6km^2	<u>Up to 2028:</u> 48dB$L_{Aeq,8h}$ limit of 44.8km^2 <u>2029-2033:</u> 48dB$L_{Aeq,8h}$ limit of 42.8km^2 <u>2034-2038:</u> 48dB$L_{Aeq,8h}$ limit of 40.1km^2 <u>2039-2043:</u> 48dB$L_{Aeq,8h}$ limit of 43.2km^2 <u>2043 onwards:</u> 48dB$L_{Aeq,8h}$ limit of 43.2km^2	Night quota period QC limit of 3,500 Requirement to employ day and night QC budgets, secured via the **Green Controlled Growth Framework [TR020001/APP/7.08]**	Requirement to employ day and night QC budgets, secured via the **Green Controlled Growth Framework [TR020001/APP/7.08]**	Requirement to employ day and night QC budgets, secured via the **Green Controlled Growth Framework [TR020001/APP/7.08]**	Night quota period annual movement limit of 9,650	None	None
Birmingham Airport	None	None	Night quota period QC limit of 4,000	None	None	877 aircraft between 2300 and 0500 per annum (maximum).	None	None
Heathrow Airport	None	None	None	Night quota period QC limit of 2,735	Night quota period QC limit of 2,415	480,000 annual movement limit Night quota period annual movement limit of 5,800	Night quota period limit of 3,250	Night quota period limit of 2,550
London City Airport	57dB$L_{Aeq,16h}$ limit of 9.1 km^2	None	Annual QC limit of 22,000 with a maximum of 742.5 in any week	None	None	111,000 actual aircraft movements and 120,000 “noise factored” movements per annum	None	None

Airport	Noise Contour Limits		QC Limits			Movement Limit		
	Daytime	Night-time	Annual	Summer	Winter	Annual	Summer	Winter
Manchester Airport	60dB$L_{Aeq,16h}$ limit of 25.6km^2	60dB$L_{Aeq,8h}$ limit of 7.8km^2	None	None	None	No more than 7% of total flights can be scheduled to take off or land between 23:30 and 06:00	Night quota period limit 10,150	Night quota period limit 3,895
London Stansted Airport	Up to 35 mppa: 57dB$L_{Aeq,16h}$ limit of 33.9km^2 Exceeds 35 mppa: 57dB$L_{Aeq,16h}$ limit of 57.4km^2 By end of 2032 or first year at 43 mppa: 57dB$L_{Aeq,16h}$ limit of 51.9km^2	Up to 35 mppa: No night control Exceeds 35 mppa: 48dB$L_{Aeq,8h}$ limit of 74.0km^2 By end of 2032 or first year at 43 mppa: 48dB$L_{Aeq,8h}$ limit of 73.6km^2	None	Night quota period limit QC of 4,650	Night quota period QC limit of 3,130	Annual movement limit of 274,000	Night quota period limit 8,100	Night quota period limit 5,600
Bristol Airport	Up to 10 mppa: 57dB$L_{Aeq,16h}$ limit of 12.42km^2 Above 11 mppa: 57dB$L_{Aeq,16h}$ limit of 11.56km^2 At 12 mppa: 57dB$L_{Aeq,16h}$ limit of 11.56km^2	No night controls	None	Night quota period limit QC of 1,260	Night quota period QC limit of 900	Annual movement limit of 85,990 Annual night quota period limit of 4,000 Annual shoulder period (06:00-07:00 and 23:00-23:30) movement limit of 9,500	None	None
Gatwick Airport	**Proposed DCO controls** First opening year: 51dB$L_{Aeq,16h}$ limit of 146.7km^2 Nine years after opening: 51dB$L_{Aeq,16h}$ limit of 125.7km^2	**Proposed DCO controls** First opening year: 45dB$L_{Aeq,8h}$ limit of 157.4km^2 Nine years after opening: 45dB$L_{Aeq,8h}$ limit of 136.1km^2	None	Night quota period limit QC of 5,150	Night quota period QC limit of 1,785	None	Night quota period limit 11,200	Night quota period limit 3,250

GLOSSARY AND ABBREVIATIONS

Term	Definition
ATM	Air Traffic Movements
DCO	Development Consent Order
ESG	Environmental Scrutiny Group
ExA	Examining Authority
GCG	Green Controlled Growth
ISH9	Issue Specific Hearing 9
L1	Level 1
L2	Level 2
QC	Quota Count

REFERENCES

Ref 1 Civil Aviation Authority (2019), CAP1731: Aviation Strategy: Noise Forecast and Analyses, Version 2