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## Glossary

19mppa application	Application 21/00031/VARCON on the LBC Planning Portal – submitted by LLAOL to LBC to further increase noise contour limits and the passenger cap
2022 inquiry	Planning Inspectorate Inquiry (ref APP/B0230/V/22/3296455) into the called-in decision by LBC to grant the 19mppa application
Airport	London Luton Airport
Airport Operator	London Luton Airport Operations Ltd, currently the concessionaire at the Airport
Applicant	Luton Rising (London Luton Airport Ltd)
Application	This application TR020001 for a Development Consent Order
ATM	Air Transport Movement, hence ATMs is a count of the number of flights
CAP1129	‘Noise Envelopes’, CAP 1129, Civil Aviation Authority, Dec 2013
CAA	Civil Aviation Authority
DART	Direct Access Rail Transit system to the Airport from Luton Airport Parkway station
Early Morning Shoulder	The period between 06:00 and 07:00 in the morning during which there is currently consented an annual movements cap of 7,000
LBC	Luton Borough Council, ultimate owner of and Local Planning Authority for LLA
LLA	London Luton Airport
LLAOL	London Luton Airport Operations Ltd, the operator of LLA
mppa	‘million passengers per annum’: a measure of an airport’s passenger capacity or actual passenger throughput
NEDG	Noise Envelope Design Group
noise contour	An outline on a map enclosing an area in which the 8-hour or 16-hour logarithmic average of aircraft noise for an average day in a defined 92-day summer period equals or exceeds a given value, expressed in terms of LAeq for an 8h or 16h period
Project Curium	Application 12/01400/FUL on the LBC Planning Portal – submitted by LLAOL to LBC in 2012 for development works to increase LLA capacity to 18mppa by 2028

**Table 1: LADACAN’s comments on the Applicant’s REP6-054 submission**

Comments use the same ID numbers as in REP6-054, and may abbreviate the original concern to provide a more manageable format.

I.D	Concerns raised	Luton Rising’s Response	LADACAN further comments
1	<p>Noise &amp; vibration: The final noise envelope design has never been consulted on, either within the stakeholder groups or during consultation on the DCO Application. Limit values were not provided until October 2022.</p>	<p>This is not the case. The Noise Envelope was consulted on in the 2022 Statutory Consultation in the Draft Green Controlled Growth Proposals consultation document. This document included:</p> <ul style="list-style-type: none"> <li>• The principals of Limits and Thresholds (as per the current Noise Envelope Design)</li> <li>• Proposals to base the Limits and Thresholds on the forecasts from the Environmental Statement (as per the current Noise Envelope Design)</li> <li>• Noise contour area limits and thresholds based on the 54dBLAeq,16h and 48dBLAeq,8h contours (as per the current Noise Envelope Design)</li> <li>• Indicative noise contour area Limits and Threshold values that are larger (i.e. more worst-case) than those in the current Noise Envelope Design</li> </ul>	<p>This remains a fundamental point of disagreement in respect of the Application on grounds of impact on the quality of the area and quality of life, for the reasons summarised below:</p> <p>As stated at ISH-9 and evidenced in our post-hearing submission REP6-139, the Noise Envelope adopted for the Application (ie the proposed Controls and associated Parameters or Limits) has never been consulted on.</p> <p>The Noise Envelope Design process did not follow the guidance of CAP1129: in particular the magnitude of the envelope was not agreed with stakeholders.</p> <p>The Applicant conducted the 2022 Statutory Consultation knowing that the Noise Envelope Design was incomplete.</p> <p>The Noise Envelope proposed in the Application was not the Noise Envelope Design recommended by the NEDG: Thresholds were increased and Controls removed. Significant time and effort has been expended during the Examination to seek to redress this.</p> <p>The non-statutory and statutory public consultations were overwhelmingly opposed on noise impact grounds <i>inter alia</i>, by neighbouring Authorities, members of the public and community groups, as is the Application itself.</p>

I.D	Concerns raised	Luton Rising's Response	LADACAN further comments
2	<p>Climate Change:</p> <p>If, as the Applicant indicates, it is confident that the Jet Zero strategy will deliver the required carbon reductions to underpin its emissions forecasts then it should indicate in the greenhouse gas action plan referred to in the dDCO more precisely how this will be achieved, and it would also be appropriate for the GCG document to set carbon caps at the assessment points to underpin confidence in the delivery of that plan.</p>	<p>The Outline Greenhouse Gas Action Plan submitted with the application provides sufficient information to inform the planning process. A further, more detailed, full Greenhouse Gas Action Plan will be prepared as part of Requirement 32 of the draft DCO [REP5-003] and submitted to the relevant planning authority for approval.</p> <p>As outlined in Section 2.2.56 of the Green Controlled Growth Explanatory Note [REP5-020] the Applicant is committed to meeting the Jet Zero Strategy policy ambition for airport operations to be zero emissions from 2040. As outlined in Section 3.4.23 of the Green Controlled Growth Explanatory Note [REP5-020], however, it is proposed to exclude Scope 3 aviation GHG emissions from the GCG Limit in the context of the UK Emissions Trading Scheme (UK ETS) and its 'cap and trade' approach to the management of GHG emissions which includes consideration of aviation emissions on a national level.</p> <p>This is on the basis that the UK ETS already exists in the form an external offsetting mechanism for which compliance is a legal requirement for airlines, involves the consideration of aviation emissions from all airports within the nation and therefore, as confirmed by Government, cannot be considered in isolation from all other aviation</p>	<p>The Applicant justifies excluding Scope 3 emissions from its Greenhouse Gas Action Plan (GGAP) and the Green Controlled Growth (GCG) Limits by arguing that because these emissions are covered by the UK Emissions Trading Scheme (UK ETS) they can be addressed at a national level.</p> <p>This conclusion is inappropriate for two principal reasons:</p> <p>Firstly, while the Government has set a target for UK airports to be zero emissions by 2040, the precise scope of included emissions has not yet been defined. The Government's call for evidence in May 2023 included a question on the extent to which Scope 3 emissions should be included, even if limited to their measurement and reporting. Policy proposals have not yet been issued, so it is premature to assume Scope 3 emissions tracking will be excluded.</p> <p>Secondly, the UK ETS does not apply to all aircraft emissions - it only covers flights within the UK and departures to EEA destinations. While this may cover the majority of commercial flights at LLA today, it does not cover business aviation and the Applicant has also indicated a potential for a larger number of non-EEA destinations to be served commercially in the future (see AS-125 6.3.27-6.3.36 "Long haul overlay forecasts").</p> <p>Since most non-EEA destinations will be medium- and long-haul routes that generate more emissions, there is potential for a significant volume of Scope 3 aircraft emissions associated with LLA to fall outside the UK ETS.</p>

		<p>emissions nationally.</p> <p>Given this, the Applicant does not consider the provision of this offsetting mechanism or the setting of carbon caps as part of the GCG Framework to be appropriate, as it is not the responsibility of a single airport operator to determine how these emissions reductions will be achieved and it has been confirmed in recent case law, <i>Bristol Airport Action Network Coordinating Committee v Secretary of State for Levelling up, Housing and Communities</i> [2023] EWHC 171 (Admin), that these emissions are best dealt with on a national level.</p>	<p>Meanwhile, the Government has yet to decide whether the UK ETS will apply to EEA routes in the future, given that they are also subject to CORSIA offsetting obligations. Unlike the UK ETS, CORSIA is not aligned with Net Zero targets, nor with UK climate ambitions. The Government has consulted on how routes covered by CORSIA and UK ETS could operate in the future, and options include using CORSIA only. Given the current policy uncertainty, it would be reasonable for the GGAP and GCG framework to make precautionary provision for inclusion of Scope 3 aircraft emissions.</p> <p>Use of the Bristol decision (to exclude greenhouse gases from flights from local climate change mitigation plans) as a precedent is questionable. The Government’s statutory advisers on the Climate Change Act have recommended no increases in airport capacity until the Government puts in place a policy framework for managing aviation demand. The Government has not (yet) adopted this advice, arguing that the Jet Zero Strategy allows for airport growth while achieving emissions reductions in aviation. Nevertheless, the precise methodology for achieving the Government’s legal commitments is still unclear.</p> <p>Regardless of future policy decisions, to ensure that the Applicant’s aspirations for Scope 3 emissions reductions will be in line with the Jet Zero trajectory, it is reasonable to include GCG controls to secure such a trajectory, due to the proposed scale of expansion. This approach would not conflict with current policy, nor with the operation of the ETS or CORSIA, but is a reasonable and precautionary measure given the importance of the issue. We hope that the ExA will take a similar view.</p>
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I.D	Concerns raised	Luton Rising's Response	LADACAN further comments
3	<p>Need Case/ economic case: Project Curium had a timeframe to 2028 for its delivery of economic benefits and mitigation The Applicant has not evidenced a specific need for further expansion of capacity at Luton Airport before 2028. Rather than using the windfall generated by the over-rapid growth to relieve poverty it has incurred £200m of DART costs write-off, spent more than £65m on this Application, creating a circa £500m debt on which interest now has to be paid. This self-perpetuating financial demand is being used to justify a need for yet more airport revenue.</p>	<p>The benefits cited in the Project Curium application were linked to growth to 18 mppa. This growth has delivered benefits to Luton and the surrounding area in terms of the creation of jobs and in attracting other activities. These were explained in REP4-075. The Need Case [AS-125] sets out the additional benefits expected from growth to 32 mppa and how these would support broader economic agendas, including the continuing need to 'level up' Luton.</p>	<p>The Applicant has not answered the concern because it has not evidenced the Need for further expansion at this stage, ie prior to the completion of Project Curium and the proven delivery not just of its economic benefits but also its associated mitigations. Such mitigations include:</p> <ul style="list-style-type: none"> <li>• Completion of the installation of noise insulation by way of compensation to residents impacted by the growth to 18mppa</li> <li>• Production and acceptance of the Long Term Noise Reduction Strategy, demonstrating that commitments to fleet modernization adequate to reduce noise to permitted levels at 18mppa (and potentially 19mppa) can be achieved</li> </ul> <p>Luton residents have reported in Representations and Hearings not seeing the benefits of the Project Curium windfall revenue, largely because it has been ploughed back into facilitating developments for yet more growth in Airport capacity, and servicing increasing debt levels.</p> <p>Residents in the local and wider area have already been exposed to premature surface transport loading because of accelerated growth. Passenger numbers in 2019 had been projected by the Airport Operator to be 12.9mppa, not 18mppa (REP1-095, PDF p43, para 31). This is on top of the excessive noise due to condition breaches.</p> <p>A need to "Level Up Luton" cannot reasonably be used to justify degrading quality of life in the wider area.</p>

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
4	<p>Funding statement: If the build-out of new capacity is slower, then there would be increased costs and funding risks due to: - effects of inflation on materials and labour costs during the period of delay - costs due to having to reschedule building resources - lower cash-flow due to reduced throughput during the slower growth period</p>	<p>A sensitivity test has been undertaken on slower growth as a reasonable worst case, this is presented in the Need Case [AS-125]. Inflation generally affects revenue as well as costs i.e. higher general inflation typically flows through to revenue via higher aero and other charges, as has been seen in the market recently through price increases resulting in higher prices for consumers. As airport income is greater than costs, then profits can also grow with inflation. Analysis shows that higher inflation and the passage of time can improve the already robust financial viability of the project. In the slower growth scenario income will grow at a slower rate. This means that variable operating costs also grow at a slower rate as many variable costs are directly linked to passenger numbers.</p>	<p>Few economists or civil engineers appear to agree with the contention of the Applicant that higher inflation is better for infrastructure development projects. A view more commonly espoused is that inflation is a challenge. A July 2023 blog on the Institute of Civil Engineers website<sup>1</sup> summarises the issues: <i>"The construction industry keenly feels the impact of inflation.</i>  <i>During periods of inflation, governments and investors must make hard decisions about priorities and affordability.</i>  <i>At a government level, rising inflation means major projects need deferring or rescoping to save money.</i>  <i>Consultants and contractors see profit margins narrow, and smaller suppliers face the threat of insolvency as they struggle with rising costs, growing loan repayments, and remaining competitive."</i>  Document "ICE 2022 Rountable writeup May 2022.pdf" (submitted separately) makes similar points.  This Application is for a £2.7bn construction project – that is what would be challenged by inflation and that is what needs to be demonstrated to be viable, not the future operation of a larger airport. Unless the capital project is financially viable, Compulsory Acquisition and the Phase 1 build on Wigmore Park should not occur.</p>

<sup>1</sup> <https://www.ice.org.uk/news-insight/news-and-blogs/ice-blogs/the-infrastructure-blog/why-does-inflation-affect-infrastructure-delivery>

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
5	<p>Planning, Surface Access:</p> <p>The Applicant has not addressed the points regarding the DART and Airport Access Road being facilitating works decided ahead of the DCO permission and positioned and aligned so as to define the location of Terminal 2 on Wigmore Valley Park thereby precluding any option for a southern Terminal 2. Local people do not regard the process as transparent, nor do they regard it as appropriate for public money to be spent to facilitate the DCO ahead of it being granted, and ahead of Project Curium mitigation being complete.</p>	<p>The Applicant considers that the responses given in Applicant's response to Deadline 2 submissions (Comments from Interested Parties on Deadline 1 submission) Appendix A – LADACAN [REP3-060], page 22, sufficiently address the comments raised.</p> <p>To reiterate, DART was constructed to serve Terminal 1, and whilst it is possible to extend the route to connect with Terminal 2, it is incorrect to state that it is a facilitating work to enable the provision of Terminal 2.</p> <p>Similarly, the assertion that the 'link road' was due to be started before the DCO application is incorrect.</p>	<p>This response does not allay our concerns.</p> <p>Further clarity is likely to be provided were the ExA to request sight of an unredacted copy of the Business Case for the DART. In any case the alignment of the DART is clearly such that it would naturally extend towards Terminal 2, rather than ending more conveniently beside Terminal 1.</p> <p>On the matter of whether the Access Road was due to be started before the DCO Application, the minutes of the pre-application meeting between the Applicant and PINS are clear:</p> <p><i>"The Applicant confirmed that, for the proposed link road for New Century Park, Luton Borough Council had resolved to grant Town and Country Planning Act (TCPA) permission subject to completion of a section 106 agreement. <u>It is anticipated that Phase 1 (western end) of that approval would be under construction at the time of submission of the DCO application.</u>" (our underline)</i></p> <p>(TR020001-Advice-00006-1-190815_TR020001_Project update meeting_FINAL.pdf, page 2, para 2)</p> <p>It appears however that the Planning Permission Notice for the Century Park Access Road is due to expire on 30 Jun 2024, reference 17/02300/EIA on the LBC planning portal.</p>

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
6	<p>Need case: The Planning Inspectorate highlighted the need for a WebTAG analysis in its Scoping Report for the 2022 Statutory Consultation (Appendix 1.3 Planning Inspectorate Scoping Opinion, May 2019) which says: "The ES should ensure that it presents an assessment of the realistic worse-case scenarios for the Proposed Development, including consideration of any airspace change implications for the noise assessment and the introduction of performance based navigation. The assumed Air Traffic Movements (ATM) should be clearly stated for all</p>	<p>The Scoping Opinion comments on WebTAG were raised in the context of assessment and comparison of multiple airspace design options, consistent with its reference to the 2017 Air Navigation Guidance (Ref 2) which only refers to WebTAG in the context of assessing and comparing airspace design options.</p> <p>The Applicant responded to the Scoping Opinion WebTAG comment in Environmental Statement Appendix 1.4 - Environmental Impact Assessment Scoping Opinion Response [APP-047] as follows:</p> <p><i>"As the airspace change process is still ongoing and will provide an assessment of potential noise impacts as part of the separate Airspace Change process, an analysis of noise effects (including a WebTAG analysis of airspace design options) due to airspace change has not been undertaken. The ongoing airspace change is not part of the Proposed Development."</i></p> <p>The Applicant has already made clear that there is no requirement for a full WebTAG appraisal in response to representations by the New Economics Foundation [REP4-096]</p>	<p>It is incorrect and misleading of the Applicant to state that the 2017 Air Navigation Guidance <i>"only refers to WebTAG in the context of assessing and comparing airspace design options"</i>. We have provided a copy of the 2017 Air Navigation Guidance (ANG) separately to assist the ExA.</p> <p>The ANG title page says it provides: <i>"Guidance to the CAA on its environmental objectives when carrying out its air navigation functions, and to the CAA <u>and wider industry on airspace and noise management.</u>"</i></p> <p>ANG paragraph 3.6 explains the purpose of WebTAG: <i>"3.6 <u>The Department for Transport's WebTAG includes a module for valuing the impacts of noise, including those from changes in aircraft noise, on health and quality of life.</u> It is not a comprehensive assessment of noise impacts as it is only currently possible to monetise these specific impacts based on average noise metrics. <u>This approach does however allow decisions on transport schemes to take account of the costs and benefits of different options with regards to average noise contours in a consistent manner.</u> The CAA must ensure that adverse effects of airspace change proposals are estimated in accordance with this methodology."</i></p> <p>This excerpt makes it clear that ANG requires airspace change proposals to be assessed using WebTAG, but not (as the Applicant suggests) that WebTAG is exclusively to be used for that purpose.</p>

<p>assessment scenarios. Furthermore, a WebTAG analysis to value and compare the noise impact of these options should be provided consistent with the requirements of the Air Navigation Guidance 2017.” (table item 4.5.6, printed page 30)</p> <p>The DCO Application to expand capacity at London Gatwick Airport by developing the northern runway is a commercially funded project, but nevertheless it does include a WebTAG analysis to assess the impacts of harms to health caused by air noise. This document from the Gatwick project refers: TR020005-001002-5.3 ES Appendix 14.9.2 Air Noise Modelling, Section 6 entitled “WebTAG”.</p>		<p>Paragraph 2.6 of ANG confirms that WebTAG is the tool to use for airspace change, without limiting its application elsewhere:</p> <p><i>“2.6 To ensure a consistent and transparent assessment of the options within and across proposals, it is advised that a single appraisal methodology is followed. The CAA will need to provide guidance on the options' appraisal methodology. These options must follow WebTAG which is a series of guides and spreadsheet tools based on up-to-date evidence following the principles of HM Treasury’s Green Book.5 Elements of WebTAG (largely noise, air quality and carbon units) serve as a guide for airspace change options appraisals outside of government.”</i></p> <p>ANG Appendix C again emphasizes the generality of WebTAG:</p> <p><i>“C.2 WebTAG is the Department for Transport’s suite of guidance on assessing the expected impacts of policy proposals and projects. This guidance covers various transport modes including; rail, road, aviation, walking and cycling. <u>Although designed primarily for use by government, the guidance can also be used by transport practitioners as all of WebTAG is publically available.</u> WebTAG includes guidance documents, excel tools, excel data books and excel summary sheets.”</i> (our underline in all the above quotes)</p> <p>Furthermore, as we had indicated, the Gatwick Airport DCO Application includes a WebTAG analysis of noise impacts in any case, and this precedent is relevant.</p>
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<b>I.D</b>	<b>Concern raised</b>	<b>Luton Rising's Response</b>	<b>LADACAN further comments</b>
7	<p>Noise and Vibration: We welcomed the ExA's question on this point, and we have since spoken to the operation manager at the McFarland Park Homes off Half Moon Lane. She advises that around 40% of the homes are older and far less substantial than the more modern homes. We urge the ExA to request a noise survey to be done rather than simply relying on the Applicant's dismissive response to question ExQ1 NO.1.29, since the effects on residents in these homes cannot otherwise be determined.</p>	<p>No significant effects on health and quality of life or adverse likely significant effects are identified for the McFarland Park Homes in Chapter 16 of the Environmental Statement [REP1-003]. The assessment criteria for this assessment are based on external noise levels and are agreed with each Host Authority as recorded in the draft Statements of Common Ground. These properties are exposed to noise levels above the Lowest Observable Adverse Effect Level (LOAEL) but below the Significant Observed Adverse Effect Level (SOAEL) and therefore the policy requirement is to mitigate and minimise (rather than avoid) adverse effects on health and quality of life, in the context of sustainable development.</p> <p>As previously noted, each of the park homes eligible for noise insulation would be surveyed to determine appropriate noise insulation. In the event that insulation is not practicable, this would still be in line with policy as there are no significant effects on health and quality of life to avoid for these properties, and noise mitigation should be applied in the context of sustainable development, i.e. 'as far as reasonably practicable'.</p>	<p>Our concern arises because of the less substantial nature of the older McFarland Park Homes on Half Moon Lane, compared to brick-built houses with slate or tiled roofs.</p> <p>A noise assessment based on a contour model only estimates external noise impacts, whereas the key is an accurate understanding of noise inside the properties, particularly at night. Because the noise attenuation of the mobile homes is likely to be less than that of a permanent brick-built structure, it is reasonable to treat such dwellings as a special case.</p> <p>In other words, if a substantial brick building were to be placed next to an older Park Home on the Half Moon site, would the residents of the Park Home experience higher levels of noise than those inside the house? It is reasonable to suppose that they would.</p> <p>This is why we have requested a noise survey at the site, inside the older properties, to ascertain the actual noise levels to which the residents are exposed when overflown by departing aircraft compared to the noise outside, to assess the attenuation achieved by the structure. This can then be used to assess whether these residents are being or would be subject to noise levels above the SOAEL, either by day or at night or both.</p> <p>Only at that point is it possible to determine whether the noise would need to be avoided, rather than simply mitigated as far as reasonably practicable, for the sake of their health and well-being. The outcome may necessitate extension of the compensation provisions.</p>

<b>I.D</b>	<b>Concern raised</b>	<b>Luton Rising's Response</b>	<b>LADACAN further comments</b>
8	<p>Noise and vibration: As we have stated in REP1-095 para 191, ICCAN best practice noise guidance on noise insulation schemes is that an internal noise survey be performed before and after insulation. The Applicant is ignoring this point and it weighs against its compensation approach since insulation is unlikely to be effective if only tailored to budget and not to need.</p>	<p>The Applicant is not ignoring this point. See paragraphs 6.1.33 to 6.1.35 of Draft Compensation Policies, Measures and Community First [REP4-042] which sets out the expected minimum requirements for a testing policy to be agreed with the Noise Insulation sub Committee of the London Luton Airport Consultative Committee which includes testing of the sound insulation performance before and after completed installation of an insulation package</p>	<p>The Noise Insulation sub Committee of the London Luton Airport Consultative Committee (NISC) has no executive powers, and little even by way of Terms of Reference. Thus far its only role has been to assist in selecting which eligible candidate properties are to be insulated next.</p> <p>The lamentable track-record of noise insulation under Project Curium demonstrates that the NISC has been unable to influence more rapid progress on existing commitments, and without some executive mandate will continue to be powerless.</p> <p>As Mr Reddington's REP6-155 indicates in Appendix A, only some 460 residential properties appear to have received noise insulation since 2016, against some 2,509 total eligible properties identified in the Bickerdike Allen report A11060_02_RP016_1.0 referenced in Note 3 on Appendix A page 2.</p> <p>It appears that this is a travesty which urgently and effectively needs to be addressed before any further increase in noise levels, since the passenger capacity is expected to return to 2019 levels by 2024.</p> <p>Going forward, unless a substantially increased rate of fully effective noise insulation installation can be secured, it is hardly able to be cited as compensation and certainly not as noise mitigation. The Applicant has not yet addressed the reality of this challenge.</p>

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
9	<p>Need case: Reference to “some operations” taking place during the night noise 8-hour period 07:00-23:00 is a misleading understatement of the Applicant’s proposal to enable those operations to increase by 70% and to enable the morning departure wave to start at 5am instead of 6am. A change of this magnitude is not consistent with the Overarching Noise Policy Statement, which requires a “balance [between] the economic and consumer benefits of aviation against their social and health implications.</p>	<p>The Applicant wishes to correct a misconception in the LADACAN response. There is no intention to allow the first wave of departures to commence in the night period at 5 a.m. This may be a reference to some information being presented in coordinated universal time (UTC), which is Greenwich Mean Time, meaning that 6 a.m. local time in UK summer can be expressed as 5 a.m. UTC.</p> <p>The Applicant rejects the contention that the Proposed Development is not consistent with the principles of aviation policy, including the Overarching Aviation Noise Policy. The Applicant considers that the Proposed Development is fully compliant with UK aviation noise policy and emerging policy, as set out in Chapter 16 Noise and Vibration of the Environmental Statement [REP1-003], the Planning Statement [AS-122] and Commentary on the Overarching Aviation Noise Policy Statement (OANPS) [REP1-012].</p>	<p>Figure 6.21 in the Need Case (AS-125) shows the Busy Day early morning departure wave starting at 5am, though the use of smooth lines makes it hard to discern numbers of flights in the hour between 5am and 6am.</p> <p>AS-125 explains Busy Day as <i>“6.6.25 These BDTTs are intended to represent a typical busy day, not the peak day in the year or the busiest hour in the year but a typical busy period relevant to be used for design purposes. This is normally based on <u>the day containing the 30<sup>th</sup> busiest hour in the year.</u>”</i> (our underline)</p> <p>The Indicative Timetable for an August Day in APP-214 (Appendix C PDF p13) schedules 4 departures at 05:55 followed by 32 departures between 06:00 and 06:59.</p> <p>Whilst they count as night movements, these are particularly likely to shorten the “night” for local residents. Based on past performance at LLA we have no confidence that additional flights will not creep into this sensitive time.</p> <p>We suggest that there is a need to add protection for residents during this sensitive period, by defining a “Quiet Period” between midnight and 6am during which there would be no departures.</p> <p>Removal of the Early Morning Shoulder movement cap of 7,000 in the 06:00-07:00 period (REP5-014 PDF p19 item iv) is unacceptable with no equivalent replacement.</p>

<b>I.D</b>	<b>Concern raised</b>	<b>Luton Rising's Response</b>	<b>LADACAN further comments</b>
10	<p>Noise and vibration: The Applicant clearly made a misleading statement in its ES about the ICAO report on Environmental Trends and has drawn a spurious conclusion, (as REP-095 paras 176-178 evidences). The Applicant fails to address this point in its response.</p>	<p>See response to similar comments with regard to the A321neo raised by LADACAN in Written Question Responses - Applicant's Response to Comments by The Harpenden Society, LADACAN and NEF [TR020001/APP/8.132].</p> <p>The Applicant rejects any suggestion that its responses have been misleading. The comment "Ascribing greater benefit to next generation aircraft than is justified by available evidence causes the noise model to under-predict" is not correct – no benefit has been ascribed to next-generation aircraft, except within a single sensitivity test in Appendix 16.1 of the Environmental Statement [AS-096].</p> <p>There is therefore no need to undertake a sensitivity check which 'removes the future noise reduction allowance', as no such allowance is made.</p>	<p>Our contention in REP1-095 paragraphs 176-178, that the Applicant misrepresented the information in the ICAO report on Environmental Trends and has drawn a spurious conclusion from it, still stands.</p> <p>We agree that this spurious information was applied in a sensitivity test to produce Tables 12.32-12.35 of AS-096 and the subsequent contour changes in Tables 12.36 to 12.39.</p> <p>Given that the original presumption (of next generation aircraft being less noisy) is unsubstantiated but on balance unlikely (for the reasons given in paras 179 and 180 of REP1-095), it would have been more appropriate to perform a sensitivity test on an increase in noise from such aircraft to inform the Environmental Assessment.</p> <p>As for the new generation aircraft, the A321neo still performs less well compared to the A321ceo at Luton and elsewhere, than does the A320neo compared to the A320ceo. We are engaging with the Applicant on this point and have an online meeting scheduled for 11 Jan.</p> <p>The modelling of A321neo noise remains an open issue and is of significance due to the increasing proportion of that type in the future fleet – see Chart 1 overleaf. It will influence our comments on REP6-063 responses to items NO.1.11 and NO.1.13 in due course.</p>

**Charts showing the Applicant's projected fleet evolution in terms of aircraft types**

(NB: figures for Boeing 737 and Boeing 737-Max sub-types have in each case been consolidated for clarity)

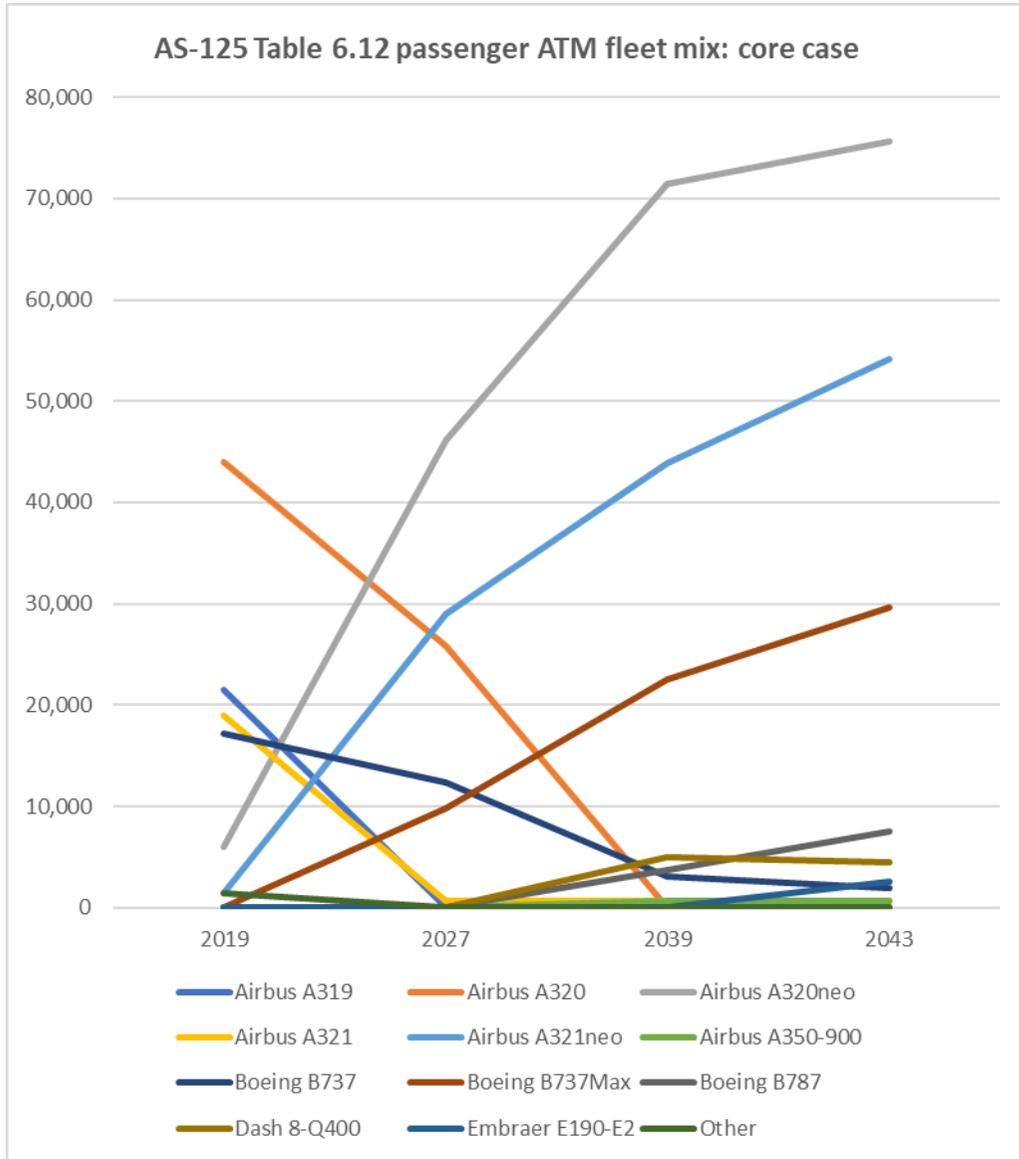


Chart 1: passenger fleet mix, core case

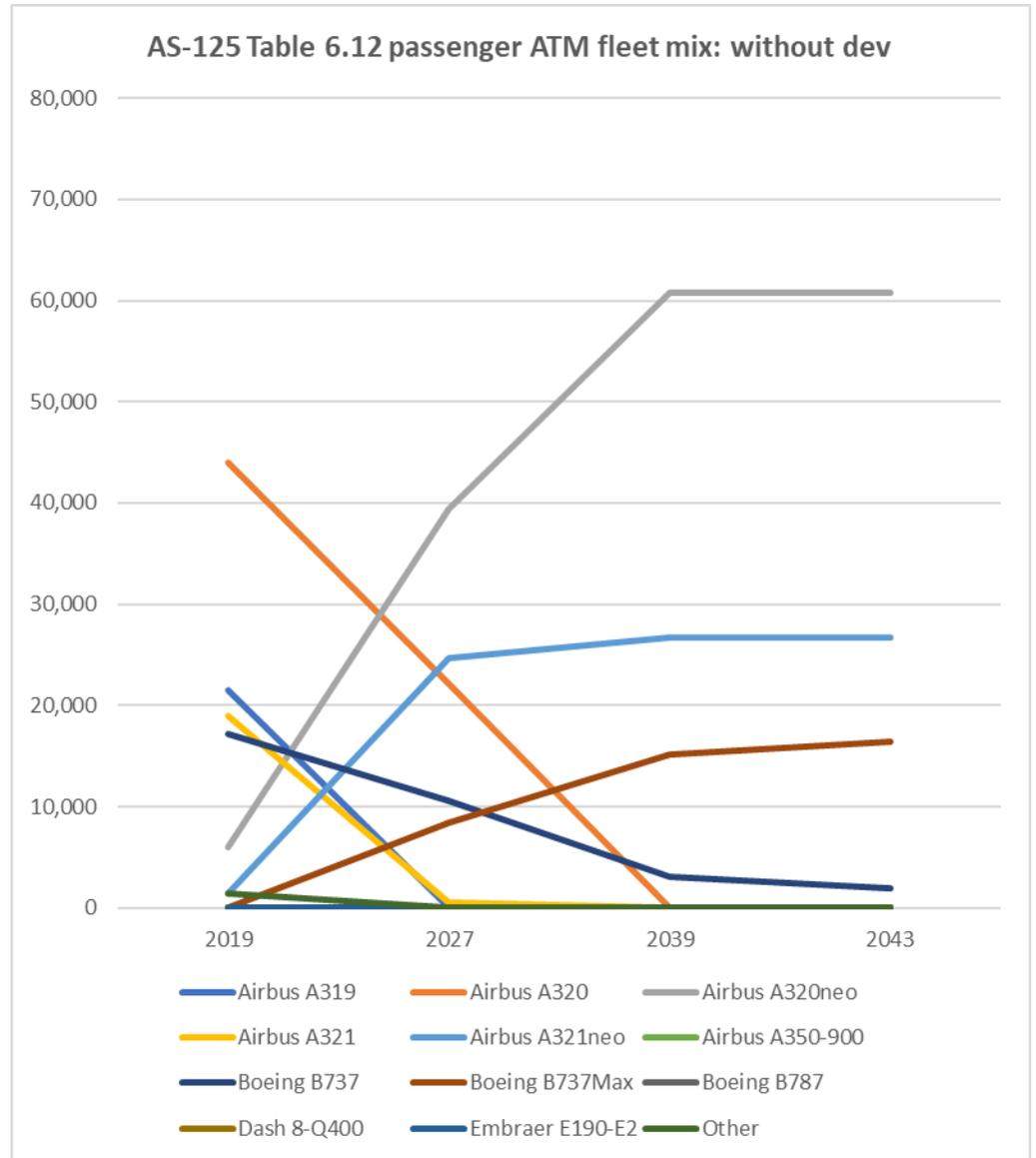


Chart 2: passenger fleet mix, without development case

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
11	<p>Noise and vibration, Carbon: The approach adopted by the Applicant to modelling the consented 2019 baseline is fundamentally flawed, as we stated in REP1-095. Had LLA been operated within its noise contours in 2019, the numbers of flights would have been reduced (as we evidenced in REP1-095 with reference to LLAOL's own statement to the 2022 Inquiry) and therefore numbers of passengers would necessarily also have been reduced. With numbers of flights reduced and a noisier fleet, the noise experience would have been different to that which has been modelled, in terms of reduced numbers of awakenings for example. But – as we have also stated – the carbon emissions and the surface transport impacts would also have been less.</p>	<p>The Applicant's position on the use of the 2019 baseline for the noise assessment is set out in Applicant's Post Hearing Submission - Issue Specific Hearing 3 [REP3-050].</p>	<p>We have reviewed REP3-050, which on this point states:</p> <p><i>"6.2.4 The first method to identify adverse likely significant effects in Environmental Impact Assessment terms (EIA) due to noise change as a result of the Proposed Development. This method identifies noise change by comparing the situation with the Proposed Development (the Do-Something scenario) to the situation without the Proposed Development (the Do-Minimum scenario) in each future assessment year.</i></p> <p><i>The future air noise baseline (the Do-Minimum) is compliant with <u>the airport's current consented long term noise limits in each assessment year</u> and therefore demonstrates a scenario where the airport is operating within its currently consented noise limits. The 2019 baseline does not factor into this assessment."</i></p> <p>As already stated (in REP5-072 under IDs 23, 56 and 58), comparison to a fixed future baseline is inappropriate. CAP1129 makes clear that limits should reduce over time to share the improvements in aircraft technology (which would benefit the DM case):</p> <p><i>"Conversely, if limits based on noise exposure or impact are held at a constant level, the improvements in quiet aircraft technology would most likely be used to permit increased numbers of movements. As such, the greatest benefit would be to industry rather than to local communities."</i> (foot of p40 and on to p41)</p> <p>Therefore comparison to a consented baseline is inadequate: it ought to be comparison to a reducing consented baseline reflecting a fair sharing of the benefits of the fleet modernisation which is projected by the Applicant for the Without Development case (see Chart 2 on preceding page).</p>

<b>I.D</b>	<b>Concern raised</b>	<b>Luton Rising's Response</b>	<b>LADACAN further comments</b>
12	<p>Green Controlled Growth:</p> <p>Our basic point stands: GCG apparently permits Limits to be increased. Our concern is that by this means, and given LBC as the arbiter, salami-slice increases in environmental impact could occur during the period to 2043 for reasons the Airport Operator would claim are not under its control. We ask the ExA to examine the extent to which salami-slice increases could occur, each as a result of LLAOL arguing that the impact would be negligible compared to a no-increase case.</p>	<p>Paragraph 2.3.4 of the Green Controlled Growth Framework [REP5-022] is clear that “There will be no ability to change any of the Level 1, Level 2 Thresholds or Limits to permit materially worse environmental effects than those identified in the Environmental Statement (ES).” It is misleading to state that this could lead to increases in environmental impact.</p>	<p>The Applicant’s response does not address the point.</p> <p>Unless the dDCO and GCG provisions robustly address the need for cumulative scrutiny of any application to increase Limits, there is clearly a risk of salami-slicing.</p> <p>Suppose, as the Applicant suggests, the Airport Operator seeks to increase a Limit, arguing that the change in environmental impacts is not material (as it argued in the case of the 19mppa application). If the impact assessment is limited to the impact of that increase only, permission to increase the Limit may be granted. Such a process could then be repeated...</p> <p>These increases would not be stand-alone, but part of, or a consequence of, the much larger DCO project and so the assessment of any proposed increase in Limits should not be compared to the impacts identified in the ES, but added to those impacts and compared to the original baseline to determine whether it tips it over into SOAEL. In other words, a proper cumulative assessment.</p> <p>Otherwise, this loophole could be exploited to enable a subsequent series of small salami-slice increases, and unless GCG and/or the dDCO effectively prevent this risk, it is hard to see how communities could have any confidence in the Limits and the assessed impacts.</p>

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
14	<p>Noise and vibration:  The 2022 statutory consultation Scoping Report (Appendix 1.3) states: <i>"The Scoping Report proposes that a bespoke noise envelope will be developed to provide a mechanism to manage noise impacts. The relationship between the existing noise envelope and the proposed noise envelope must be set out in the ES and the basis for any departure from the established noise envelope must be fully justified. The ES should explain how the Noise Envelope Design Group provides continuity with existing noise controls at the airport and justify the need for any departures from the conditions of the existing operating consent."</i> (Table item 4.5.15, printed page 32)</p>	<p>In response to LADACAN's note that CAP1129 was available prior to determination of the Project Curium application, the Applicant has said "This is a point of semantics and has no bearing on the fact that the noise controls in Project Curium were not able to take due regard of the guidance in CAP1129 which was the substantive point of the response."</p>	<p>The extract from the 2022 Scoping Report cited in our point of concern has not been addressed in the response by the Applicant.</p>

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
15	<p>Noise and Vibration, Fleet mix:</p> <p>LLA currently operates a day Noise Violation Limit (NVL) and a night NVL which, if exceeded at the statutory noise monitors 6.5km from start of roll, lead to fines. The NEDG agreed to refine this control as follows: "Noise violation limits to be applied at current locations. Limit values to be graded based on departure QC of aircraft." [REP4-023, PDF p53]</p> <p>This control was removed by the Applicant, and its omission weighs against the Application since there is no transparent incentivisation for modernization.</p>	<p>Noise Violation Limits (NVLs) are now defined in the Air Noise Management Plan [TR020001/APP/125] secured by a Requirement to the DCO.</p> <p>NVLs graded based on Quota Count can have the opposite effect than intended as it can act as a disincentive to airlines replacing their aircraft with quieter aircraft as they would be subject to a lower limit (in effect penalised by being at greater risk of being fined).</p> <p>The airport operator noted in their response to the NEDG Final Report (Annex A of Appendix 16.2 of the ES [REP4-023]) that this was observed in the 2014 planning permission (12/01400/FUL) which had NVLs set according to quota count and this was demonstrated to be inappropriate and subsequently changed to NVLs with a set limit for all aircraft, reducing over time, in the 2017 planning permission (15/00950/VARCON). This has been reflected in the NVLs defined in the Air Noise Management Plan [TR020001/APP/125].</p>	<p>The 2017 planning permission removed the type-specific NVLS at the urging of LLAOL, to benefit its business.</p> <p>At the time, the proposed type-specific levels were not set at appropriate values to incentivize a switch to less noisy types. They could have been modified instead.</p> <p>Whilst inappropriately gauged NVLS based on Quota Count <u>could</u> have the opposite effect than intended, it does not necessarily follow that they <u>would</u> if the NVLS were to be correctly gauged. This is why the majority of the NEDG agreed the proposal for type-specific NVLS.</p> <p>Otherwise, the only current incentive for airlines to move to less noisy aircraft would be differential landing charges. The 2023 LLA Landing Charges<sup>2</sup> have a single cost breakpoint which distinguishes Chapter 14 and non-Chapter 14 types in respect of charges.</p> <p>REP3-015 proposes in paragraph 3.2.15 that when a Level 1 threshold is exceeded, the forward-looking quota-counts will be calculated to inform future planning and <i>"to incentivize airlines to operate the quietest aircraft available in response to the opportunity for growth"</i>.</p> <p>It would be helpful for the Applicant to clarify how this measure would in practice incentivize an individual airline to operate or invest in less noisy aircraft.</p>

<sup>2</sup> Available from <https://www.london-luton.co.uk/LondonLuton/files/bd/bdc9b106-2371-4861-893f-7e9251a2be43.pdf>

I.D	Concern raised	Luton Rising's Response	LADACAN further comments
16	<p>Noise and Vibration: The control and the intended certainty over the noise impacts provided by the noise quota limits, the early morning shoulder limit, the guaranteed reductions in noise contour area, and the reducing noise violation limits, have been removed. Whilst the Applicant may claim that the noise contour limits are the means of noise control, as we have indicated a contour is not an adequate characterization of all the ways in which noise affects people on the ground, particularly at night, and the Airport Operator would be free to pursue its commercial aims regardless.</p>	<p>As set out Comparison of consented and proposed operational noise controls [REP5-014], updated at Deadline 5, the Noise Envelope provides several enhancements to the current consented noise controls. In addition, the majority of the noise controls in the current consent will be retained in the Air Noise Management Plan [TRO20001/APP/125], secured by a Requirement to the DCO.</p>	<p>REP5-014 does not show meaningful enhancements to the limitation and reduction of noise compared to currently consented noise controls. Most of the claimed benefits are just a reiteration of the GCG process which replaces the currently intended scrutiny and oversight by LBC through the Project Curium Section 106 Agreement (ref REP1-095 PDF p46 para 45).</p> <p>A key protection to quality of life in local communities – the Early Morning Shoulder movement cap, currently 7,000 annually, has been removed entirely. This has been done to facilitate a 70% increase in movements in the night period, which is a significant retrograde step.</p> <p>Whilst there was a lack of clarity in the NEDG Final Report on whether the Early Morning Shoulder should be protected by quota or by caps, it was clear that such protection was needed, and at the time of its meetings the precise level of increase of flights in that period was not known.</p> <p>Noise controls are now split between the dDCO, the Air Noise Management Plan and Green Controlled Growth, which is the opposite of what the NEDG recommended when it said: “The Noise Envelope should be a discrete entity, separate from Green Controlled Growth” (NEDG Final report paragraph 40, PDF p95 of REP4-023).</p> <p>We continue to oppose this Application on grounds of the detrimental effects of additional noise impacts on the quality of life and character of the area.</p>

**Table 2: LADACAN’s comments on the Applicant’s REP6-069 submission post OFH3**

Comments use the same ID numbers as in REP6-069, and may abbreviate the original concern to provide a more manageable format.

I.D	Concerns raised	Luton Rising’s Response	LADACAN further comments
9c	<p>There is no technical solution to the problem of flight paths which cross. The Application is therefore premature.</p>	<p>The Applicant does not believe this comment to be correct as the purpose of airspace modernisation is to use modern navigation techniques, as distinct from the historic patterns of navigation by beacons, to enable such flight path crossings to be resolved by the use of different flight paths and flight levels.</p> <p>The process is explained further in the Civil Aviation Authority’s Airspace Modernisation Strategy 2023-2040 Part 1.</p> <p>The Applicant does not believe that this comment has any relevance to the Application as the environmental assessments are presented on the basis of no changes to the current airspace so any subsequent changes that delivered an environmental benefit would reduce the impacts.</p>	<p>Our comment is correct in the context of the airspace in which at LLA operates, and which is affected by other airports such as London City, Northolt and Heathrow – and also where LLA’s easterly departures conflict with its easterly arrivals.</p> <p>LADACAN’s concern is shared by the Airspace Change Organising Group and recognized by NATS. If flight paths cross (or “intersect”) in lower airspace and this cannot be resolved by using different flight paths or different levels (due to constraints caused by other users of airspace or due to inability to climb aircraft sufficiently rapidly) then currently no technical solution exists. It is possible that Departure Management Systems could be enhanced to ensure timewise avoidance of two aircraft being in the same place at the same time, but such systems are not generally in use in the UK. It was discussed at the LLA Noise and Track Sub-Committee in December 2023.</p> <p>Since these unresolved constraints currently require LLA’s westerly departures and easterly arrivals often to be held low for extended track miles, our point was, and remains, that it would be appropriate for the Applicant to defer substantial increase in flights until the issues can be resolved. Latest estimates are that FASI-South will not be delivered before 2030.</p>

I.D	Concerns raised	Luton Rising's Response	LADACAN further comments
9d	<p>CAP1129 guidance states: 1. Communities are entitled to a properly defined noise envelope. 2. The applicant must address precisely the noise issues, and parameters should be based on an agreement reached between the industry and stakeholders. The magnitude of the Noise Envelope was not agreed through striking a balance, the Noise Envelope Design Group was just informed of the limits in the penultimate meeting. There is disagreement with the Applicant and the Host Authorities over the proper way to handle a noise assessment. Compensation does not assist people who would suffer increasing noise disturbance both day and night.</p>	<p>The Applicant has responded to LADACAN's comments on the Civil Aviation Authority's CAP1129 guidance document on Noise Envelopes (Ref 1) in Applicant's response to Deadline 2 submissions (Comments from Interested Parties on Deadline 1 submission) Appendix A - LADACAN [REP3-060].</p> <p>The disagreement referenced by LADACAN relates only to the use of the 2019 baseline, and the Applicant's position on this is set out in Applicant's Post Hearing Submission - Issue Specific Hearing 3 (ISH3) [REP3- 050].</p> <p>Other than the use of the 2019 baseline, the Host Authorities agree with noise assessment approach including the noise modelling approach, methodologies, assessment threshold values, assessment periods, change criteria and model validation.</p> <p>See the Statements of Common Ground between the Applicant and the Host Authorities submitted at Deadline 6 [TR020001/APP/8.13 to TR020001/APP/8.17]. Compensation is not the only noise mitigation for the Proposed Development. The Noise Envelope secured in the Green Controlled Growth Framework [REP5-022] and other noise mitigation measures secured in the Air Noise Management Plan [TR020001/APP/8.125] will benefit those outside of the eligibility noise contours for the compensation schemes.</p>	<p>Our representations in REP5-071 REP5-072 address the points made in REP3-060 regarding the failure to follow CAP1129, and still stand.</p> <p>We reserve our position on noise model calibration pending engagement with the Applicant, as referenced above (Table 1, ID 10).</p> <p>The Hertfordshire Authorities made clear at ISH9 that additional disagreements remain over noise assessment, and these are set out in REP6-094 (in particular at the foot of p10 and on to p11). We will not reiterate them here.</p>

I.D	Concerns raised	Luton Rising's Response	LADACAN further comments
9e	<p>There is confusion over the halving of the operational carbon emissions between the consulted PEIR and the DCO application.</p>	<p>The Greenhouse Gas (GHG) assessment presented in Chapter 12 Greenhouse Gases of the Preliminary Environmental Information Report published as part of the 2022 statutory consultation was prepared on the basis of the most accurate data that was available at that time. It was further informed by a range of assumptions around mitigation measures that reflected UK Government policy at that time. Since then, the UK Government has published its Jet Zero Strategy that describes a range of mitigation measures aimed at decarbonising the aviation sector.</p> <p>Quantitative parameters relating to these measures, specifically around improvements in efficiency, the introduction of sustainable aviation fuels (SAFs), and the use of zero emission aircraft (ZEA), are set out in Figure 3 of the Jet Zero Illustrative Scenarios and Sensitivities document, which allow emissions reductions from these measures to be incorporated into the GHG assessment presented in Chapter 12 Greenhouse Gases of the ES [REP3-007].</p> <p>As highlighted in Inset 12.4 of Chapter 12 of the ES [REP3-007], these measures collectively reduce aviation emissions by over 72% by 2050. The inclusion of these mitigation measures account for the substantially reduced overall GHG emissions figures presented in the ES compared to those presented in the 2022 PEIR.</p>	<p>Please see our response in Table 1 ID 2 above.</p>

Table 3: Further comments regarding an issue not addressed in REP6-069

I.D	Concerns raised	LADACAN further comments
n/a	<p>LADACAN’s REP6-133 submission post-OFH3 raised concerns about the amount of empty office space already in Luton, and the viability of the Green Horizons Park project:</p> <p><i>“Large amounts of office space currently stands empty in Luton: Green Horizons Park may prove to be superfluous, and along with it the Airport Access Road which Luton Borough Council is supposed to fund.”</i></p> <p>(top of page 4)</p>	<p>The Applicant made no comment in its REP6-069 on this concern, but subsequently we have located a recent Minute of the South East Midlands Local Enterprise Partnership (SEMLEP) Board in which Hazel Simmons, (Leader of Luton Borough Council), reports significant concerns regarding the financial viability of the Green Horizons Park / New Century Park project, as well as the proposed Bartlett Square project:</p> <p><i>“Luton Enterprise Zone update - Cllr HS provided an update:</i></p> <ul style="list-style-type: none"> <li><i>• Need to rethink plans for remainder of Bartlett Square due to changes in working practices since Covid-19. It is not right time to pursue new office developments, however interests have been made for the potential of a hotel development on the site. In the meantime, it is being used a car park for HART and Morton House.</i></li> <li><i>• Century Park – there have been difficulties in securing funding. Will also need to rethink plans due to a lack of demand for office space. Remain opposed to using the site only for logistics as it generates relatively few jobs and is not an ambitious use of the prime site adjacent to the countries firth largest airport. Have been working with a range of partners to create a concept called Green Horizons Park and working with a range of organisations including venture companies and finances to create a development based around: aviation, automation, advanced manufacturing and green technologies. Engagement is at a very early stage but has been productive but it is too early to go into detail at the moment.</i></li> <li><i>• There have been questions around the continuing value of the Enterprise Zone and time has now expired for the benefits to businesses.</i></li> <li><i>• The benefit of retained business rates continues until 2041 but cannot be evaluated at the moment due to the scale, scope and type of development being as yet undecided.”</i></li> </ul> <p>(page 7 of separately submitted SEMLEP_20230222WebReadyConfirmedBoardMinutes.pdf)</p> <p>Clearly, if the Green Horizons Park project does not proceed, the Airport Access Road is not required for that project, and there would also be financial implications in relation to the borrowing and investments incurred, which could impact DCO project funding or justification: the ExA may wish to request further information.</p>



Department  
for Transport

# Air Navigation Guidance 2017

Guidance to the CAA on its environmental objectives when carrying out its air navigation functions, and to the CAA and wider industry on airspace and noise management.

Moving Britain Ahead

October 2017

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# Air Navigation Guidance 2017

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# Introduction

Section 70(2) of the Transport Act 2000 requires the Civil Aviation Authority (CAA) to take account of any guidance on environmental objectives given to it by the Secretary of State (SofS) when carrying out its air navigation functions. These functions are set out in the SofS's Air Navigation Directions, made under sections 66(1) and 68 of the Transport Act 2000.

In January 2002, the then Department for Transport, Local Government and the Regions issued guidance to the CAA which has subsequently formed the basis of how the CAA interprets its environmental duties in respect of carrying out its air navigation functions including approving changes to the UK's airspace design. This document has become known as the Air Navigation Guidance.

In January 2014, the Department for Transport published a revision to the Air Navigation Guidance which took account of the latest developments on UK airspace, including the establishment of the CAA led Future Airspace Strategy (FAS). However, the Air Navigation Guidance 2014 did not reflect a significant reappraisal of the government's airspace and noise policies. Soon after publication, a number of operational trials across the UK and changes to procedures used by air traffic controllers, led to various calls for a significant reappraisal of the government's airspace and noise policies. The government's response was the UK Airspace Policy consultation which the Department published on 2nd February 2017.

The Air Navigation Guidance 2017 is the result of this review of the government's airspace and noise policy. In addition to being statutory guidance to the CAA on environmental objectives in respect of its air navigation functions, the revised guidance also includes details on the SofS's role in the airspace change process.

Unlike the Air Navigation Guidance 2014, which this version of the guidance now replaces, the new guidance is aimed not just at the CAA but we also expect that it will be taken into consideration by the aviation industry. It also acknowledges the important role which local communities have in the airspace change process.

Please note the terms used throughout this document have the same meaning as those given in The Civil Aviation Authority (Air Navigation) Directions 2017 unless otherwise noted.

## Objectives of the Guidance

Underpinning this new guidance are a number of key overall objectives. These include to:

- provide guidance to the CAA under section 70(2) of the Transport Act 2000 and which the aviation industry should take account of;

- ensure that aviation can continue to make its important contribution to the UK economy and at the same time seek to improve the sustainable development and efficiency of our airspace network;
- strengthen the UK's airspace change process and its transparency, particularly with respect to how local communities are involved within it; and
- emphasise that the environmental impact of aviation must be mitigated as much as is practicable and realistic to do so.

The government recognises the degree of challenge which can exist in satisfying the expectations of local communities, those impacted by aviation, and the aviation industry's aspiration to further develop the efficiency of the UK airspace network. However, we are confident that by following this revised guidance the aviation industry and the CAA will ensure an appropriate balance is achieved as the UK embarks on a major programme of airspace modernisation. This guidance aims to help set the overall expectations on stakeholders in this respect whilst providing transparency as to the basis upon which airspace change decisions, particularly those relating to low-level airspace, are made and how the government's airspace and noise policies should be followed.

## Purpose and applicability of the Guidance

The purpose of this guidance is to give the CAA guidance on environmental objectives, as well as guidance to other stakeholders. The guidance is not just concerned about the process of making formal airspace design changes in the UK, but also extends to all the CAA's air navigation functions. However, we note that when considering changes to airspace design there are other legitimate operational objectives, such as the overriding need to maintain a high standard of safety, the desire for sustainable development<sup>1</sup>, and the need to enhance the overall efficiency of the UK airspace network, which the CAA and others are required to take into account and consider alongside these environmental objectives. Where relevant, we look to the CAA to determine the most appropriate balance between these competing characteristics as set out in section 70 of the Transport Act 2000.

**This document, excluding section 6**, is statutory guidance to the CAA on environmental objectives relating to CAA's air navigation functions in accordance with section 70(2) of the Transport Act 2000 and the Air Navigation Directions issued under sections 66(1) and 68 of that Act. This information should also be noted and taken into consideration by the aviation industry.

**Section 6 of this document** is guidance to the CAA and the aviation industry and relates to the role of the SofS in the UK's airspace change process.

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<sup>1</sup> Sustainable development has both environmental and economic connotations, and includes the need to enable aviation to grow sustainably if the UK economy is to remain competitive and achieve its objective for growth and employment.

# 1. The government's environmental objectives

## Introduction

- 1.1 This document contains the SofS's guidance to the CAA on its environmental objectives when carrying out its air navigation functions set out in the Air Navigation Directions 2017<sup>2</sup> issued under sections 66(1) and 68 of the Transport Act 2000 pursuant to section 70(2)(d) of that Act. This guidance should also be noted and taken into consideration by the aviation industry.

## The government's key environmental objectives

- 1.2 The environmental objectives with respect to air navigation are chosen to facilitate the government's overall environmental policies. These environmental objectives are designed to minimise the environmental impact of aviation within the context of supporting a strong and sustainable aviation sector. These objectives are, in support of sustainable development, to:
- a. limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise<sup>3</sup>;
  - b. ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions<sup>4</sup>; and
  - c. minimise local air quality emissions and in particular ensure that the UK complies with its international obligations on air quality.
- 1.3 In order to deliver this policy, decisions which affect how aircraft noise is best distributed should be informed by local circumstances and consideration of different options. Options, and appraisal of the pros and cons, may include concentrating traffic on single routes, which normally reduce the number of people overflown, versus the use of multiple routes which can potentially provide relief or respite from noise if routes can be sufficiently separated.
- 1.4 The guidance in this document is intended to guide the CAA and industry on how the decisions they make can best give effect to the government's Key Environmental Objectives.

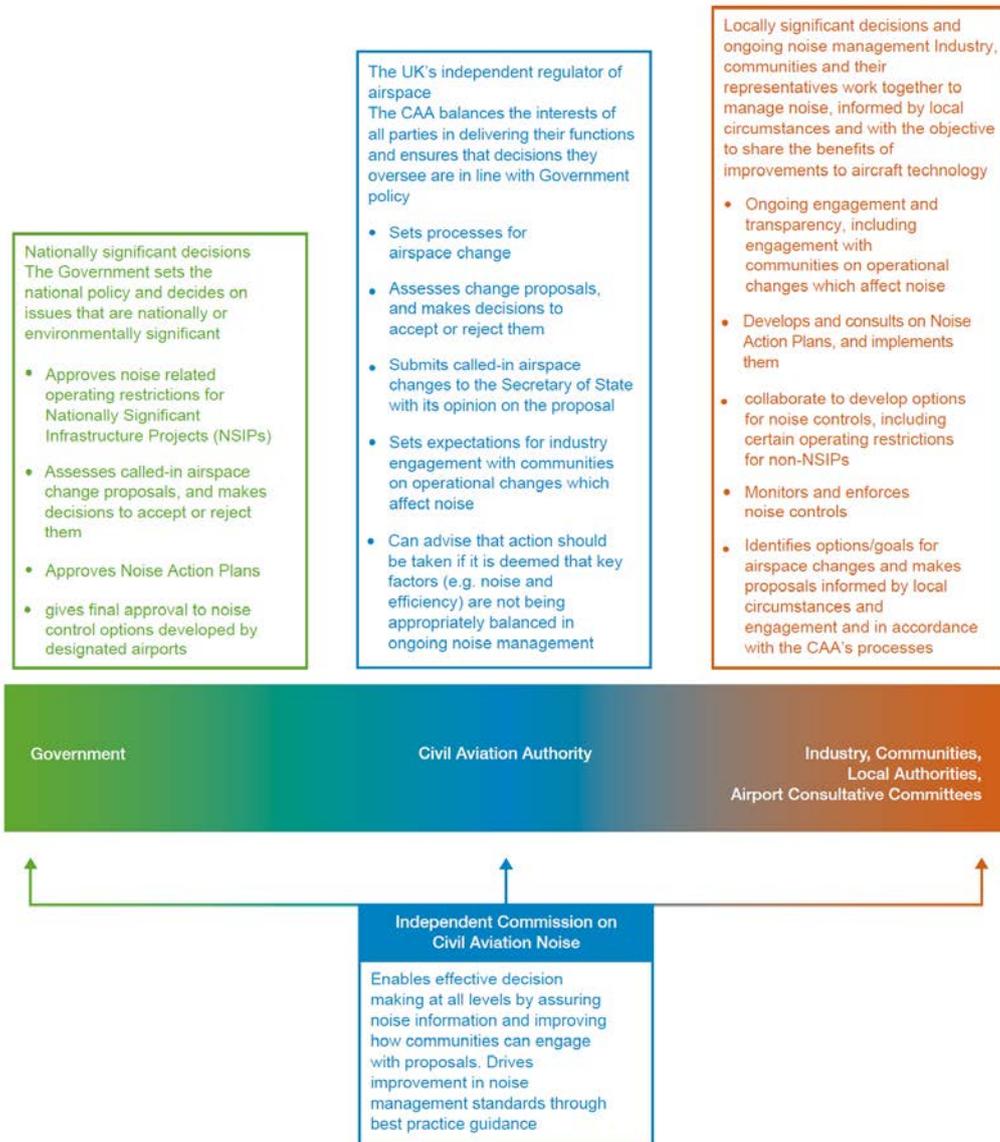
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<sup>2</sup> The Civil Aviation Authority (Air Navigation) Directions 2017. A copy of which can be found at Annex D of this document.

<sup>3</sup> Further guidance on the methodology for assessing this objective is provided in sections 3.5 to 3.6 of this guidance.

<sup>4</sup> Aviation Policy Framework, Department for Transport, March 2013. This is expected to be replaced by a new aviation strategy in 2019.

# Roles and Responsibilities



## The decision making system

The various roles and responsibilities of relevance to the way that airspace is managed and updated are:

- **Department for Transport** – is the lead government department for civil aviation and sets the UK's overall policy on aviation. The SofS gives the CAA its air navigation functions in the Air Navigation Directions which are subject to a range of duties set out in section 70 of the Transport Act 2000. The SofS also gives the CAA guidance on its environmental objectives in relation to the CAA's air navigation functions. The SofS makes the final decision on airspace change proposals that are called in.
- **Civil Aviation Authority** – is the UK's independent aviation regulator and acts as the national supervisory authority responsible for the planning and regulation of national airspace. It sets the UK's airspace change process, including how environmental impacts are taken into account, and makes decisions on proposals made by sponsors to change the notified UK airspace design. With the Ministry of Defence and NATS it also develops the FAS and provides technical advice to the DfT on noise and other air navigation related matters.
- **UK airports** – these are responsible for providing air navigation services in the airspace closest to the airport and for their standard instrument departure and arrival routes. Airports therefore often act as the sponsor of a proposal to change airspace design which is directly linked to their own airport operations. They are also responsible for ensuring compliance by airlines with any noise abatement procedures at the airport, as well as for active engagement with their local communities and for ensuring that they mitigate noise disturbance as much as is practicable, for example, through noise penalty schemes.
- **NATS** – is the UK's national en route provider of air traffic services. It is responsible for ensuring the safety and efficiency of much of the UK's controlled airspace and acts as the principal sponsor for airspace change proposals in both the upper airspace as well as lower airspace down to c7,000 feet. It also carries out airport approach services at a number of UK airports.
- **Airlines** – these are responsible for considering the environmental performance of aircraft when deciding their fleet mix, setting certain operating procedures for their pilots to follow when taking-off and arriving e.g. ascent profile, and for ensuring that their pilots follow the relevant noise abatement procedures at airports.
- **Local authorities** – these set local planning policies and ensure that noise impacts are properly considered during the planning process and that unacceptable adverse impacts are avoided. They can also require conditions through planning agreements to set noise controls and operating restrictions. Local authorities are also responsible for land-use planning and ensure that inappropriate development does not occur near airports and that development meets certain standards of noise insulation where appropriate.
- **Independent Commission on Civil Aviation Noise (ICCAN)** – this is responsible for publishing best practice on the management of civil aviation noise and advising government in this area.

## Definition of altitude in this guidance

- 1.5 Throughout this guidance, all altitude figures in feet are expressed in feet above mean sea level (amsl) in order to provide a common datum. However, the CAA should ensure that the aviation industry takes account of the elevation (height) of the specific surface level involved when developing its airspace design proposals. This is particularly the case when such proposals may affect airspace at an altitude lower than 7,000 feet (amsl) and in circumstances where the actual height of the land directly beneath may be hundreds of feet above sea level.

## 2. Airspace Change

### Introduction

- 2.1 The Directions give the CAA the power and duty to carry out air navigation functions as the UK's independent airspace regulator. This includes a direction that the CAA must develop and publish procedures, and guidance on such procedures, for sponsors to follow in the development of a proposal, and to decide whether to approve such a proposal for a:
- a. **permanent change to airspace design:** a permanent change to the notified UK airspace design, which includes the structures of UK airspace and the flight procedures within it;
  - b. **temporary change to airspace design:** a change to UK airspace design, to last for a fixed period that is not usually to be for more than 90 days after which the airspace will revert back to its original form. In exceptional circumstances the CAA may extend a temporary change; and
  - c. **airspace trial:** changes to airspace design, or air traffic control (ATC) operational procedures, for the purposes of investigating the feasibility of, or validating proposals for, innovative airspace design, technology or ATC operational procedures. As with temporary changes this must be for a fixed period, usually not more than 6 months, which the CAA has discretion to extend.
- 2.2 Subject to taking account of this guidance and any other relevant government policy, the Air Navigation Directions 2017 allow the CAA flexibility to determine a proportionate and appropriate process to be followed in the exercise of the functions outlined in section 2.1 above.
- 2.3 In exercising these functions, the CAA must also take account of any best practice guidance which ICCAN may publish on aspects of aviation noise.

### CAA Environmental Statement for permanent changes to airspace design

- 2.4 As there is no ideal solution that will apply to every airspace change, and what is preferable in a particular instance will depend on local circumstances and what is possible, there is no hard formula for how different factors should be balanced against one another. The government considers, however, that ensuring decisions on airspace changes are transparent is the best way to guarantee that the balance has

been appropriate. The CAA is therefore expected to produce an environmental statement when approving an airspace change. This statement should verify that all environmental factors have been considered in line with relevant government policy reflected in this guidance.

## The need for options appraisals for permanent airspace design changes by sponsors

- 2.5 When proposing an airspace change, sponsors will have their own objectives and must be required by the CAA to develop and consider options to meet these objectives. As part of this consideration, the sponsor must proportionately appraise the expected impacts of the different options. It is therefore expected that a sponsor must carry out the appraisal and the CAA, as regulator, ensure that this options appraisal is undertaken appropriately and in line with government policy.
- 2.6 To ensure a consistent and transparent assessment of the options within and across proposals, it is advised that a single appraisal methodology is followed. The CAA will need to provide guidance on the options' appraisal methodology. These options must follow WebTAG which is a series of guides and spreadsheet tools based on up-to-date evidence following the principles of HM Treasury's Green Book.<sup>5</sup> Elements of WebTAG (largely noise, air quality and carbon units) serve as a guide for airspace change options appraisals outside of government.
- 2.7 The purpose of using a consistent methodology to appraise the expected impact of a proposal is to aid objective decision making. It is not intended, nor is it possible that all impacts are monetised; some will be quantified and some will be qualitatively described. This "level" of options appraisal should be proportionate to the impacts and available evidence. This approach should help to make and communicate decisions effectively. It is considered that there is a growing need for this approach as available UK airspace becomes increasingly scarce and so decisions on the use of airspace become increasingly important.

## The need for engagement for permanent airspace design changes by sponsors

- 2.8 In addition to an options appraisal, the CAA must ensure appropriate engagement has been carried out, prior to approving any permanent airspace design changes. The level of engagement, up to and including formal consultation, required by the CAA to be carried out by the sponsor should take account of the scale and impact of the change, as determined by the options appraisal. It should also take account of the potential stakeholders who may have a legitimate interest, as well as their ability to contribute either directly or through a representative body.
- 2.9 Where consultation with local people is required, the minimum consultation requirements to be placed on sponsors should, insofar as relevant, meet the principles set out in the Cabinet Office Guidance on Consultation principles.<sup>6</sup> The

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<sup>5</sup> Further information on the Green Book can be found at: <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

<sup>6</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/492132/20160111\\_Consultation\\_principles\\_final.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492132/20160111_Consultation_principles_final.pdf)

method, form and extent of the consultation will vary depending on the circumstances and expected impacts of each case taking account of this guidance document, and in particular the altitude-based priorities presented in section 3.2 to 3.3 of this guidance. Some airspace changes are of a technical nature and have no significant environmental impact, such as a change to airspace classifications which does not affect airspace usage, and therefore might require little or no consultation with stakeholders. In all cases, however, the CAA should determine the appropriate level of consultation required of a sponsor for a given change, and scale its processes accordingly. The expectation is that where there is potential for a significant impact on the likely level of noise disturbance, for example a proposal to move a low-level route and its associated impacts to a different geographical location or concentrate it within a particular region, the consultation process should be extensive and include:

- the manager of the relevant aerodrome and its principle users (where the changes relate to a particular aerodrome);
- other principal users of the airspace (which may be done through representative bodies);
- local authorities, other organisations and individuals who may represent the interests of people living in the neighbourhood of the aerodrome that are likely to be affected by the proposed change below 7,000 feet. Changes at or above 7,000 feet will usually not have a noticeable impact so consultation is unlikely to be necessary. In determining which local authorities to consult, sponsors are also encouraged to consider the impact of overflight<sup>7</sup>;
- any national or local environmental bodies that are considered by the CAA to have a specific interest in the impacts of the proposed airspace change;
- the relevant airport consultative committee where one exists; and
- it should be considered as best practice that the sponsor consults and informs the communities it may be significantly affecting, through the use of means such as social media, newspaper adverts, and leaflets as the CAA considers appropriate.

2.10 Consultation with environmental stakeholders will usually only be necessary where the proposed changes concern controlled airspace below an altitude of 7,000 feet or could have considerable knock-on effects on how air traffic uses adjoining uncontrolled airspace below the same altitude. However, the CAA should exercise its judgement when considering the need or scope of the consultation where proposed change(s) would result in an overall improvement in noise levels for all those affected since environmental consultation may not be considered necessary in such cases.

- 2.11 If the need for a consultation is deemed appropriate, the CAA should check that the consultation:
- a. includes an assessment of effects based on traffic levels expected at the time of implementation, and forecast traffic levels for future periods (where appropriate);
  - b. is conducted in line with any best practice guidance published by ICCAN; and
  - c. is robust and sufficient in order to enable the CAA to make an independent assessment of the proposal.

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<sup>7</sup> The CAA has published CAP 1378 "Performance-Based Navigation – Airspace Design Guidance", March 2016. Annex B provides a discussion on overflight which sponsors are encouraged to consider. <https://publicapps.caa.co.uk/docs/33/CAP%201378%20APR16.pdf>

## Arrangements for temporary changes to airspace design

- 2.12 The temporary airspace arrangement will usually apply for a period of no longer than 90 days and the airspace will then revert back to its original state at the end of the designated period. Under extraordinary circumstances this period may be extended but only with the express authorisation of the CAA.
- 2.13 We require the CAA to consider the sponsor's assessment of the noise impact of each proposed temporary change to airspace design before it makes a decision on them, unless the CAA is satisfied that the specific details in the proposal mean that this is not needed. The government recognises that it is not proportionate for a sponsor wishing to implement a temporary airspace arrangement to be required to follow the full options appraisal requirements as set out in section 2.5 to 2.7 above. However, in circumstances where a temporary airspace arrangement would affect the distribution of air traffic below 7,000 feet, where practicable, the communities that may be affected should be informed prior to the change being implemented.<sup>8</sup> The CAA should therefore ensure that an appropriate level of engagement has been carried out by the temporary change sponsor, prior to giving approval for its implementation. The sponsor should also monitor and report to the CAA on complaints associated with any temporary airspace arrangement once it has been implemented. If the basis of the complaints, and not just how many have been made, suggests that the operational use of the temporary airspace has not been in keeping with its original design, the CAA should investigate urgently.
- 2.14 If a sponsor wishes to extend a temporary airspace arrangement beyond the originally agreed end date, the CAA should assess whether the rationale for doing so is appropriate. If so, the CAA should also assess whether the initial engagement by the sponsor remains valid and whether it should be augmented. In all cases, an extension beyond the initial agreed period will need careful consideration by the CAA and should not be granted simply to minimise the amount of effort required by the sponsor when pursuing the full airspace change approval process.

## Arrangements for operational trials of airspace design

- 2.15 Operational trials of airspace design need the approval of the CAA. These are designed to trial innovative design concepts and/or the use of new technologies which may also contribute to our understanding of aircraft noise impacts. As a consequence, they make a valuable contribution to the efficiency and effectiveness of the UK airspace network. They also form a key component of the successful implementation of the Future Airspace Strategy and the Single European Sky, and they can act as a means of informing a future consultation. The government therefore considers that operational trials are useful, but that specific care should be taken by sponsors and the CAA before they are approved. In all cases, the sponsor of the trial should assess whether a non-operational trial, for example the use of simulators, might be more appropriate and be prepared to set out the rationale why this is not the case.
- 2.16 If a live operational trial is considered necessary, the CAA must consider the noise impact of the trial before making a decision. To aid this, the CAA must require the

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<sup>8</sup> This requirement does not apply to airspace restrictions imposed by the SoFS under powers included in the Air Navigation Order.

sponsor to consider and assess the likely noise impact of its proposal and this information should help inform the level of engagement required. The CAA should assess what is appropriate for the sponsor to undertake, but particular emphasis should be given to informing communities and their representatives of any changes that might affect the routes flown by aircraft below 7,000 feet.

- 2.17 All airspace trials require prior approval from the CAA and must have a defined objective and a confirmed start and end date, although the CAA may extend the period of the trial if it considers this appropriate.
- 2.18 If the sponsor wishes to make an operational airspace trial permanent, it will need to complete the full airspace change process. Normally, the airspace should revert back to its original state until such time as the full airspace change process can be completed. However, it is not always practical or prudent to disestablish a trial procedure. In such instances, the CAA may consider extending the trial whilst the airspace change process is being completed. Any extension to the operational trial should be closely monitored by the CAA. If it becomes clear to the CAA that the proposed change involving a trial is unlikely to be approved, the CAA should promptly end the trial and revert the airspace concerned to its pre-trial state.
- 2.19 Operational airspace trials should not be seen by sponsors as a means to avoid following the airspace change process. It is imperative that sufficient engagement is carried out before implementation and that noise complaints are monitored by the sponsor, and reported on to the CAA, carefully during the trial. If the basis of the noise complaints, and not just their number, suggests to the CAA that the sponsor failed to engage properly or that the trial is not meeting its objectives, it should seek to end the trial as soon as it is safe and practicable to do so.

## Arrangements with the Ministry of Defence (MoD)

- 2.20 The CAA should not disregard the possible environmental impacts of military aircraft or military operations (including civil aircraft carrying out military function under contract) when considering whether to agree to an airspace change proposal which has been put forward by a non-military sponsor. The Air Navigation Directions 2017 enable, however, the CAA to disregard the environmental impacts of military aircraft when the proposal has been submitted by, or on behalf of, the MoD.<sup>9</sup>

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<sup>9</sup> The Civil Aviation Authority (Air Navigation) Directions 2017, Direction 9, see Annex D of this guidance.

# 3. Detailed guidance on assessing the potential environmental impacts of airspace change options

## Introduction

- 3.1 When the CAA exercises its air navigation functions, it is required to apply consideration to the various factors listed within section 70(2) of the Transport Act 2000, with safety being the priority. If there is a conflict in the application of the provisions listed in section 70(2), the CAA must, according to section 70(3), apply them in a manner it thinks is reasonable having a regard to those factors as a whole. To help ensure this is done correctly, sponsors should be required to demonstrate how they have assessed the different impacts and taken on board the views of different parties when developing options for airspace changes.

## Altitude Based Priorities

- 3.2 To assist the CAA and sponsors, the government laid out the altitude-based priorities which should be taken into account when considering the potential environmental impact of airspace changes. These priorities are intended solely to inform those responsible for considering and deciding permanent changes to the UK's airspace design (section 2.1(a) of this guidance) and not for day to day operations.
- 3.3 Noise from aircraft flying at or above 4,000 feet is less likely to affect the key noise metrics used for determining adverse effects and as aircraft continue to climb above this altitude their noise impact reduces. Set against this, there is also a need to secure an efficient use of airspace and to ensure that aircraft operations emissions are minimised. So when considering requests to change the airspace design, the CAA should apply the following altitude-based priorities of the government:
- a. in the airspace from the ground to below 4,000 feet the government's environmental priority is to limit and, where possible, reduce the total adverse effects on people;
  - b. where options for route design from the ground to below 4,000 feet are similar in terms of the number of people affected by total adverse noise effects, preference should be given to that option which is most consistent with existing published airspace arrangements;

- c. in the airspace at or above 4,000 feet to below 7,000 feet, the environmental priority should continue to be minimising the impact of aviation noise in a manner consistent with the government's overall policy on aviation noise, unless the CAA is satisfied that the evidence presented by the sponsor demonstrates this would disproportionately increase CO<sub>2</sub> emissions;
- d. in the airspace at or above 7,000 feet, the CAA should prioritise the reduction of aircraft CO<sub>2</sub> emissions and the minimising of noise is no longer the priority;
- e. where practicable, it is desirable that airspace routes below 7,000 feet should seek to avoid flying over Areas of Outstanding Natural Beauty (AONB) and National Parks; and
- f. all changes below 7,000 feet should take into account local circumstances in the development of the airspace design, including the actual height of the ground level being overflown, and should not be agreed to by the CAA before appropriate community engagement has been conducted by the sponsor.

## Assessing the noise implications of proposed airspace changes

- 3.4 As stated in section 1.2(a) of this guidance, one of the government's three key environmental objectives is to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise.
- 3.5 For the purpose of assessing airspace changes, the government wishes the CAA to interpret this objective to mean that the total adverse effects on people as a result of aviation noise should be limited and, where possible, reduced, rather than the absolute number of people in any particular noise contour. Adverse effects are considered to be those related to health and quality of life. There is no one threshold at which all individuals are considered to be significantly adversely affected by noise. It is possible to set a Lowest Observed Adverse Effect Level (LOAEL) that is regarded as the point at which adverse effects begin to be seen on a community basis. As noise exposure increases above this level, so will the likelihood of experiencing an adverse effect. In line with this increase in risk, the proportion of the population likely to be significantly affected can be expected to grow as the noise level increases over the LOAEL. For the purposes of assessing and comparing the noise impacts of airspace changes, the government has set a LOAEL of 51dB LAeq16hr for daytime noise and 45dB LAeq8hr for night time noise and the CAA should ensure that these metrics are considered.
- 3.6 The Department for Transport's WebTAG includes a module for valuing the impacts of noise, including those from changes in aircraft noise, on health and quality of life. It is not a comprehensive assessment of noise impacts as it is only currently possible to monetise these specific impacts based on average noise metrics. This approach does however allow decisions on transport schemes to take account of the costs and benefits of different options with regards to average noise contours in a consistent manner. The CAA must ensure that adverse effects of airspace change proposals are estimated in accordance with this methodology. Additional noise metrics should be considered, as appropriate, as specified elsewhere in this guidance, advised by the CAA, or following engagement by the sponsor.

- 3.7 Below 4,000 feet, there is a strong likelihood that aircraft could create levels of noise exposure above the LOAELs identified above, which is reflected in the Altitude Based Priorities.
- 3.8 There may however be options which perform comparatively better in terms of minimising more serious impacts as opposed to annoyance, or certain options may be better for day noise than night noise, or vice versa. In these instances, the CAA should verify that sponsors have considered the relative trade-offs and taken into account any community views on what the objectives in terms of noise should be.
- 3.9 At and above 4,000 feet, aircraft are unlikely to result in noise exposure above 51dB LAeq16hr for day time noise and 45dB LAeq8hr for night time noise, but where such exposure does occur the CAA should ensure that the focus remains on minimising these impacts. Generally however, at and above 4,000 feet to below 7,000 feet, the government expects the CAA to follow the altitude based priorities (as set out in section 3.2 to 3.3 above).
- 3.10 As well as overall impacts, the CAA should also verify that sponsors have adequately explained how communities will be affected as a result of the proposal, such as the expected change in noise exposure communities will experience.
- 3.11 For communities further away from airports that will not be affected by noise above the LOAELs identified above, it is important that other aspects of noise are also taken into account where the total adverse effects of noise on people between different options are similar. Metrics that must be considered for these purposes include the overall number of overflights<sup>10</sup> and number above metrics: N65 for daytime noise and N60 for night time noise.<sup>11</sup> The CAA's overflights metric is a means of portraying those locations where residents will experience being overflowed. These supplementary metrics must also be used to inform communities about the likely impact of proposed changes.
- 3.12 The CAA should also verify that sponsors have used any other noise metrics that may be appropriate for allowing communities to understand the noise impacts that could result from the proposed change. This could include the use of 100% mode contours for average noise or frequency-based metrics, or consideration of the interaction with other sources of aircraft noise, such as those from other local airports.

## Introduction of Performance Based Navigation

- 3.13 Perhaps the most significant change to airspace arrangements in the past 50 years has been the onset of the implementation of performance-based navigation (PBN), a process which is likely to take many years to complete. As PBN is mentioned in a number of places in the text, more details can be found at Annex B.
- 3.14 When considering the introduction of new PBN-based procedures intended to replicate existing conventional procedures, the CAA should ensure that the airspace change proposal contains options and uses options appraisal which will help the sponsor to determine whether a replication of existing procedures is the optimum

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<sup>10</sup> See the CAA's definition of overflight: [www.caa.co.uk/CAP1498](http://www.caa.co.uk/CAP1498)

<sup>11</sup> Number above metrics take account of the number of aircraft noise occurrences at or above a given noise level. For example, the N60 metric indicates the number of noise events exceeding 60 dBA over a given period.

approach for meeting both the government's environmental objectives and the sponsor's own objectives for the airspace change in question.

- 3.15 If, following the options appraisal, the sponsor considers that the best approach to be taken is to replicate the current conventional flightpath with the use of the new procedures, the implementation of this replication should seek to preserve the existing route alignments as far as possible. In such circumstances, the CAA should make the sponsor aware that experience has shown that modern aircraft and their on-board flight systems cannot always accommodate an exact replication.
- 3.16 The government expects that the full procedures for a permanent change to UK airspace design will be followed by sponsors wishing to update their conventional flightpaths to PBN standards.
- 3.17 In cases where airports wish to enhance the standard used on PBN flightpaths, for example from "RNAV1" to "RNP1", the government recognises that such changes are less likely to cause a significant redistribution of air traffic. In such cases, the government still expects the sponsor to consider using options appraisal, but the CAA is able to determine the precise approval process which sponsors need to follow, providing that any noise impacts have been assessed and there is full transparency with communities that may be affected.

## Single and multiple routes

- 3.18 Single and multiple routes both have costs and benefits associated with them. In terms of noise, a single route will, generally, tend to affect fewer people overall compared to multiple routes. It may mean however that more people are exposed to higher levels of noise where there is a greater risk of adverse effects, than if noise was more dispersed.
- 3.19 As stated in section 1.3 above, decisions on how aircraft noise is best shared should be informed by local circumstances and consideration of the different options that are deemed to be practicable. This consideration should include the pros and cons of concentrating traffic on single routes which normally reduce the number of people overflown, versus the use of multiple routes which can potentially provide relief or respite from noise but increase the number of people overflown overall.
- 3.20 This means there will be situations when multiple routes, that expose more people overall to noise but to a lesser extent, may be better from a noise perspective. Taking account of consultation and the objectives of the airspace change proposal, with regard to assessing and comparing environmental impacts of a proposed change, preferred options should normally be based on those which result in fewer total adverse effects on people.
- 3.21 For airspace changes where noise levels are expected to lead to fewer measurable impacts on health and the quality of life, greater consideration should be given to how the number of overflights is distributed, and consideration of how the current situation for those overflown will differ for any future options. However, it is important that all decisions are made in line with the altitude-based priorities and that impacts on wider airspace use are also considered.
- 3.22 Proposals by sponsors, and ultimately the CAA's decision, concerning single and multiple routes should be explained clearly and transparently.

## Designing Airspace

- 3.23 Improvements in aircraft track-keeping also offer the potential for aircraft to be more concentrated along a defined route, if desired, as well as providing the potential for routes to be alternated to introduce an element of limited respite for those under the routes. More details on the possibilities of using PBN for noise mitigation can be found in the CAA's Civil Aviation Publication 1378, published in March 2016, which sponsors are encouraged to consider when putting together their airspace design proposals.<sup>12</sup>
- 3.24 Section 70 of the Transport Act 2000 reflects Parliament's desire to balance the needs of the aviation industry for an efficient airspace design and those of communities that want the noise impacts of aircraft movements at low level to be minimised. The aviation industry and airspace designers should take these into account when developing their proposals for airspace changes.
- 3.25 The government also expects the CAA to encourage the use of new and innovative approaches to managing aviation noise through airspace design such as the provision of respite for communities already significantly affected by aircraft noise where possible.

## Greenhouse Gases

- 3.26 Section 1.2(b) of this guidance states that one of the government's three key environmental objectives with respect to air navigation relates to the reduction of carbon emissions. The Aviation Policy Framework sets out the government's priorities for action on aviation's climate change impacts, including at global, EU and national levels.<sup>13</sup> The CAA should ensure that it continues to be informed about the government's policies on aviation and climate change.
- 3.27 The CAA has the opportunity to contribute to the government's aim of reducing aviation fuel use and therefore CO<sub>2</sub> emissions by seeking to promote the most efficient use of airspace and the expeditious flow of air traffic including, but not limited to, procedures that enable aircraft to climb efficiently, allow direct routings, reduce holding times and facilitate the consistent use of continuous descent and low power/low drag (LP/LD)<sup>14</sup> procedures. This applies particularly above 7,000 feet where local community impacts are not a priority.

## Local air quality

- 3.28 Section 1.2(c) of this guidance states that one of the government's three key environmental objectives with respect to air navigation relates to air quality. Aircraft engines, airport related traffic on local roads and surface vehicles all contribute to air

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<sup>12</sup> <https://publicapps.caa.co.uk/docs/33/CAP%201378%20APR16.pdf>.

<sup>13</sup> Aviation Policy Framework, Department for Transport, March 2013. This is expected to be replaced by a new aviation strategy by 2019.

<sup>14</sup> LP/LD is a method used to reduce the noise of arriving aircraft by delaying the extension of wing flaps and undercarriage until the final stages of approach, in accordance with safety requirements and ATC speed controls. More details on LP/LD can be found in sections 5.9 to 5.12 of this guidance.

pollution around airports. Oxides of nitrogen (NO<sub>x</sub>) and particulate matter are the two most important emissions affecting the air quality around airports. Studies have shown that NO<sub>x</sub> emissions from aviation related operations reduce rapidly beyond the immediate area around the runway. Due to the effects of mixing and dispersion, emissions from aircraft above 1,000 feet are unlikely to have a significant impact on local air quality. Therefore the impact of airspace design on local air quality is generally negligible compared to changes in the volume of air traffic and that of the local transport infrastructures feeding the airport. However, the CAA should include consideration of whether local air quality could be impacted when assessing airspace change proposals.

- 3.29 While the CAA should prioritise noise below 7,000 feet, consistent with the altitude-based priorities and the government's policy to give particular weight to the management and mitigation of noise in the immediate vicinity of airports, there could be circumstances where local air quality may be a consideration because emissions from aircraft taking off, landing, or whilst they are on the ground have the potential to contribute to overall pollution levels in the area. This could lead to a situation where prioritising noise creates unacceptable costs in terms of local air quality or might risk breaching legal limits. The CAA should therefore take such issues into account when it considers they are relevant, for example, when determining airspace changes affecting the initial departure or the final arrival stage of a flight.
- 3.30 Airports are expected to consider the implications on local air quality arising from their current and future air operations and when contemplating future airspace redesign in the close vicinity of their airport. For example, we would expect that sponsors provide a comparison of local air quality as part of their submission to the CAA when submitting a permanent airspace change proposal that includes changes to initial climb and final descent operations below 1,000 feet.

## National Parks and AONB

- 3.31 National Parks and AONB are designated areas with specific statutory purposes to ensure their continued protection in relation to landscape and scenic beauty.<sup>15</sup> The statutory purpose of National Parks is to conserve and enhance their natural beauty, wildlife, and cultural heritage and to promote opportunities for the understanding and enjoyment of their special qualities by the public. The statutory purpose of AONB is to conserve and enhance the natural beauty of their area. In exercising or performing any air navigation functions in relation to, or so as to affect, land in National Parks and AONB, the CAA is required to have regard to these statutory purposes when considering proposals for airspace changes (under section 11A of the National Parks and Access to Countryside Act 1949, as read with section 19 and schedule 2 of the Civil Aviation Act 1982, and section 85(1) of the Countryside and Rights of Way Act 2000).<sup>16</sup>
- 3.32 Given the finite amount of airspace available, it will not always be possible to avoid overflying National Parks or AONB, and there are no legislative requirements to do so as this would be impractical. The government's policy continues to focus on limiting and, where possible, reducing the number of people in the UK adversely affected by aircraft noise and the impacts on health and quality of life associated with it. As a consequence, this is likely to mean that one of the key principles involved in airspace design will require avoiding over-flight of more densely populated areas below 7,000 feet. However, when airspace changes are being considered, it is important that local circumstances, including community views on specific areas that should be avoided, are taken into account where possible.
- 3.33 As set out in section 3.2(e) of this guidance, where practicable, it is desirable that airspace routes below 7,000 feet should seek to avoid flying over AONB and National Parks and the CAA should require this to be considered by sponsors when developing their proposals.

## Taking account of local circumstances

- 3.34 Sponsors should engage with communities and follow any relevant best practice published by ICCAN during the early stages of an airspace change proposal to explore options which are considered to be operationally feasible to ascertain whether any are preferable from a community point of view. As well as consideration of single and multiple routes, other local factors to consider might include whether there are specific AONB, National Parks, nominated quiet areas, or noise sensitive buildings that it is practical to avoid overflying. As set out earlier, the CAA is required to give regard to the statutory purpose of AONB and National Parks when carrying out its air navigation functions.
- 3.35 Engagement with communities and other stakeholders should inform which options are developed in the later stages of the process. Sponsors should demonstrate that they have taken on board the views of communities where possible when developing

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<sup>15</sup> A list of designated National Parks in the UK can be found at [www.nationalparks.gov.uk](http://www.nationalparks.gov.uk). A list of designated AONB can be found at [www.landscapesforlife.org.uk](http://www.landscapesforlife.org.uk).

<sup>16</sup> DEFRA, Duties on relevant authorities to have regard to the purposes of National Parks, Areas of Outstanding Natural Beauty (AONB) and the Norfolk and Suffolk Broads Guidance Note, 2005.

options. If communities cannot agree on which option is preferable, then we expect consultation on options for both single and multiple routes and for these to be subject to an options appraisal. If either of these options are not operationally feasible the CAA will be expected to verify the sponsor's rationale of why this is the case and this information should be communicated to the relevant local communities.

## Helicopters

- 3.36 The CAA should take into account the unique noise characteristics of helicopters, which can hover for a period of time at low level over the same area, and their consequent environmental impact. This should occur when a change to airspace is proposed under the CAA's Airspace Change Process, and where significant helicopter activity is involved. In such cases, where either the proposal concerns the amendment to formally established helicopter routes within controlled airspace, or where helicopters movements are a predominant factor, the CAA should encourage sponsors, where operationally practicable, to consider options that minimise the environmental impact of helicopter activity and take account of that impact when assessing options to meet their objectives.

## Noise Sensitive Buildings

- 3.37 The CAA should also, where practicable, take into account the desirability of minimising noise impacts for noise sensitive buildings of which the CAA is aware, such as hospitals, schools and places of religious worship. This should occur when a change to airspace is proposed under the CAA's Airspace Change Process.

## The role of the ICCAN in the airspace change process

- 3.38 ICCAN will develop and maintain best practice guidance on aviation noise for participants in the airspace change process.
- 3.39 This will include guidance for sponsors regarding considerations around aviation noise mitigations when developing the principles behind their proposal. Principles might include, for example, suggestions about flight paths avoiding specific populations or avoiding designated land such as AONB and national parks, where possible.
- 3.40 The CAA should ensure that a sponsor can demonstrate that any best practice published by ICCAN has been appropriately considered in the development of their proposal.
- 3.41 Where the sponsor has deviated from ICCAN best practice guidance, the sponsor should describe their reasoning behind their decision not to follow the best practice. To ensure transparency on the use of ICCAN best practice, the CAA should demonstrate that they have factored ICCAN best practice into their final decision, including sponsor reasons for deviation from ICCAN best practice within the final design.

3.42 When airspace changes are being proposed, the CAA should ensure that any best practice from ICCAN on appropriate metrics are taken into account when noise impacts are being assessed. The CAA also should take into account any ICCAN best practice as part of its post-implementation review.

## Other relevant legislation, policy and guidance

3.43 It is recommended that the CAA keep abreast of other relevant policy and guidance issued by the government and devolved administrations, especially those regarding noise, carbon, and air pollution.

3.44 In particular the CAA should be familiar with:

- a. the National Planning Policy Framework<sup>17</sup> and associated guidance which sets out the government's planning policies for England and how these are expected to be applied;
- b. Scotland's National Planning Framework which provides the context for development plans and planning decisions and the Scottish Planning Policy which contains the Scottish Government's expectations for planning;
- c. Planning Policy Wales which sets out the context for planning policy in Wales;
- d. any relevant Planning Policy Statements issued by the Northern Ireland Department of Environment;
- e. any guidance and advice notes issued by the government or devolved administrations;
- f. National Policy Statements for major infrastructure;
- g. National Parks and Access to Countryside Act 1949;
- h. Wildlife and Countryside Act 1981;
- i. Countryside and Rights of Way Act 2000;
- j. Natural Environment and Rural Communities Act 2006;
- k. Noise Policy Statement for England 2010; and
- l. Conservation of Habitats and Species Regulations 2010.<sup>18</sup>

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<sup>17</sup> National Planning Policy Framework, Department for Communities and Local Government, March 2012.

<sup>18</sup> SI 2010/490.

## 4. Detailed Management of aircraft noise: guidance for airports, airlines and air navigation service providers and CAA in respect of CAA's noise management function

### Introduction

- 4.1 For communities living close to airports, and some further away under arrival and departure routes, aircraft noise is one of the most important environmental impacts created by the aviation sector. The government's long-term view, most recently expressed in the 2013 Aviation Policy Framework, is that there must be a fair balance between the economic benefits derived from the aviation industry, and the negative impacts of noise for affected communities. The benefits of any future growth in aviation and/or technological development must be shared between those benefitting from a thriving aviation industry and those close to the airports that experience its impacts.
- 4.2 The government expects that when considering airspace changes the aviation industry should address noise from low level air traffic as a local environmental priority in line with the altitude-based priorities given to the CAA. The CAA should also respect its environmental duty when carrying out its air navigation functions set out in the Air Navigation Directions.
- 4.3 The aviation industry should also seek to have high quality and open engagement with their local communities with respect to not just forthcoming proposals but also with regard to their day to day air operations. Moreover, the need for effective noise management should be one of the key objectives of the industry and be enshrined in its ethos. This includes having good noise complaint handling procedures as well as full transparency on its air operations and the noise impact which they create. Sponsors should also be aware of and follow the government's policy surrounding compensation arrangements for airspace changes.
- 4.4 It is expected that in due course ICCAN will produce more detailed best practice guidance on what is to be expected from the industry in respect of noise management, including how communities should be engaged in the process, and what airports, airlines and air navigation service providers should take into account.
- 4.5 The CAA will also need to be mindful of any relevant best practice and research carried out by ICCAN when exercising its air navigation functions. Where ICCAN

provides best practice guidance on noise management, publishes reviews of recent research evidence, undertakes or commission independent research, the CAA and airports, airlines and air navigation service providers, should take this into account.

- 4.6 The CAA should also consider, in particular on a proposal from ICCAN, further areas where it may be beneficial for it to use the information powers set out in the Civil Aviation Act 2012 to encourage such things as publication of airline statistics, which may encourage industry to enhance their approach to noise management.

## Use of airspace

- 4.7 Airspace users, for example, helicopter and light aircraft operators, are urged to ensure that when operating over built up areas they do so with consideration for the people who may live there. In addition, airspace users should also give similar consideration when they operate over AONB and National Parks to take account of the people who live there or who are enjoying the amenity that these areas provide.
- 4.8 We would also encourage pilots to follow the guidance that is available, such as that produced by the British Helicopter Association for its members which includes a section on environmental matters and a Pilot's Code of Conduct.<sup>19</sup>
- 4.9 It is desirable to try to balance economic and leisure benefits on the one hand against any noise impacts on the other. We therefore strongly urge all airports and aerodromes across the UK to engage closely with their statutory airport consultative committees where appropriate. In addition airports should work with their communities to establish local solutions which can work for both parties. Measures which could be taken include establishing local community meeting groups where both sides can meet and discuss any ongoing concerns, encouraging pilots to avoid overflying built up areas where practical to do so, and greater thought being put into the effect of noise from intensive operations such as take-off and landing training exercises. In all cases, the need is for a local solution.

## Helicopter and light aircraft-related noise

- 4.10 Earlier in this guidance the government has provided guidance on the specific considerations that should be given to the impacts of helicopter noise when considering airspace changes.
- 4.11 Where the CAA is aware that airport/aircraft operators are considering local changes that may result in changes to the location of where light aircraft or helicopters overfly, but which fall outside of the Airspace Change Process, the CAA is encouraged to promote the use of voluntary local noise abatement procedures which are designed to minimise noise disturbance where practicable.

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<sup>19</sup> <http://www.britishhelicopterassociation.org/wp-content/uploads/Civil-Helicopter-in-the-Community.pdf>

## Expectations for transparency on aircraft movements

- 4.12 Airports, and their air navigation service providers, should be aware of the noise impact of aircraft operating into and out of their airport. They should engage proactively with their local communities through established bodies such as Airport Consultative Committees, other relevant consultative groups, and, where appropriate, through other means such as the internet and social media, to engage and inform their communities as appropriate on relevant air operations.
- 4.13 As part of the engagement activities carried out by the airports, they are encouraged, where it is practicable to do so, to provide their local communities with information on the tracks flown by aircraft, the numbers of flights, and altitude data. The government recognises the need to avoid overly restraining industry and so the airports will be able to determine the specific flight information they wish to publish, taking into account best practice.
- 4.14 The CAA will produce guidance for transparency on aircraft movements, taking into account any relevant best practice published by ICCAN. Such best practice is expected to include guidance on the type and frequency of information that airports should publish and the level of engagement that should be undertaken by the airport. ICCAN is expected to have a role in determining the type and frequency of information that airports will be encouraged to publish. ICCAN will also provide best practice on the level of engagement that should be undertaken by the airport.

## Aircraft operational changes affecting the use of airspace

- 4.15 Airports should also be aware that over time it is possible that the distribution pattern of air traffic and the types of aircraft being flown can change and that this can have a noise impact. For example, airlines may make changes to the routes they fly or increase the intensity of flights to more popular destinations. Airports are therefore expected, where this is practicable, to analyse how aircraft operations involving their airport affect the use of airspace and to be transparent with communities about any identified changes to the distribution of air traffic.
- 4.16 It will be the responsibility of the CAA to set the specific guidance for aircraft operational changes affecting the use of airspace, taking into account any relevant best practice by ICCAN. The CAA will have flexibility to determine how best to carry out this function, which is laid down in Direction 15(1) of the Air Navigation Directions 2017, and which relates to changes that have occurred. This policy should outline expectations for airports around community engagement and transparency, including the consideration of mitigating measures, and may identify any best practice that might apply to future air operations where known. The CAA's policy should focus on the provision of information by airports to communities and increasing the level of transparency that exists with air operations. Where the CAA is aware an airport is withholding information, it should consider exercising its powers to obtain information from providers of air traffic services.

# 5. Specific navigational guidance

## Introduction

- 5.1 The environmental impact from air operations can be mitigated by a number of factors. The following section of the guidance provides some best practice guidance which the CAA and the aviation industry should take account of when considering permanent changes to airspace design, or even how day to day air operations are implemented. It is expected that this guidance may be supplemented in the future by ICCAN.

## Departure procedures

- 5.2 Departure procedures should be designed to enable aircraft to operate efficiently and to limit, and where possible reduce, the total adverse effects on people from aircraft noise. This is part of a policy of sharing the impact of technical developments and other benefits between industry, communities and all other stakeholders, whilst taking into account the overriding need to maintain a high standard of safety. Additionally, departure procedures should be achievable within the prevailing technological constraints without a detriment to air safety, and comply with international regulations.
- 5.3 Steeper climb gradients can have environmental advantages and disadvantages depending on the local circumstances of the airport. Where steeper climb gradients immediately after take-off are considered necessary for ATC purposes, consideration should be given to the effect this may have on the use of noise reduction take-off procedures (including the use of “cut-back”). Maximum permitted noise limits for aircraft taking off have also been set by the SofS at Heathrow, Gatwick and Stansted, and by airport operators elsewhere (in some cases in compliance with planning conditions).
- 5.4 There is a finite number of departure flightpaths from an airport due to the complexity of airspace, ease of flight operation, and the capabilities of on-board aircraft systems. It is therefore desirable for the CAA to encourage airline operators, airports, and air navigation service providers to consider what can be done to safely increase the number of departure flightpath possibilities which could then be discussed and consulted on with local communities.

## Continuous Climb Operations

- 5.5 The use of Continuous Climb Operations (CCO) has implications for both noise and CO<sub>2</sub>/fuel efficiency. CCO is considered to have an overall neutral impact on noise, but it does involve the redistribution of some noise.<sup>20</sup> A CCO does, however, have the potential to reduce fuel burn as aircraft reach efficient cruising levels earlier thus leading to fuel savings and a reduction in the amount of emissions, including CO<sub>2</sub>. CCO also means aircraft get above some of the most complex and congested low level airspace more quickly. Once clear of these areas there is generally more opportunity for aircraft to be routed directly onto their chosen path, and thus save flying time, track miles, and creating more efficient aircraft operations.
- 5.6 CCO forms a significant component of the FAS and the government would like to see it introduced across the UK over the coming years as part of the overall modernisation of the UK airspace network. The CAA is encouraged therefore to continue to work with the aviation community to introduce CCO more widely in the coming years.

## Arrival Procedures

- 5.7 Where airports are close to populated areas, arrival noise is often seen as a more serious problem than departure noise. This is in part because of recent technological advances in modern jet aircraft, as well as the dispersal of departures between several routes. Arrival aircraft, by contrast, usually follow a straight final approach track at comparatively lower altitudes (for a given range from the airport) and this reduces the opportunities to minimise aircraft noise disturbance.
- 5.8 A number of factors determine the level and distribution of noise from arriving aircraft, such as the alignment of the runway, the location of the runway threshold, the angle of the glide path, the position of holding areas in relation to the final approach tracks, and the associated procedures for integrating landing traffic in the initial and intermediate approach phases. For the foreseeable future, measures targeted at the last of these factors are likely to offer the greatest potential for reducing noise from arriving aircraft.

## Continuous Descent Operations

- 5.9 Continuous Descent Operations (CDO) relate to continuous descent from cruising altitude. In the UK, CDO is often known as Continuous Descent Approach (CDA), which typically starts from an altitude of 6,000 feet. The government's desire is that radar manoeuvring areas and the positions of holding stacks are designed and managed in ways that will assist and promote the consistent use of CDO and LP/LD techniques used by pilots.

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<sup>20</sup> Reducing the Environmental Impacts of Ground Operations and Departing Aircraft: An Industry Code of Practice, [http://www.heathrowairport.com/static/Heathrow/Downloads/PDF/Departures\\_code\\_of\\_practice-LHR.pdf](http://www.heathrowairport.com/static/Heathrow/Downloads/PDF/Departures_code_of_practice-LHR.pdf), page 21.

- 5.10 A code of practice for arriving aircraft was established to address the noise from approaching aircraft in 2001 (revised in 2006) and this includes advice on measures to reduce noise from arriving aircraft, including CDO and LP/LD.<sup>21</sup>
- 5.11 When a CDO procedure is flown the aircraft stays higher for longer (in comparison to a conventional approach), descending continuously from the bottom of the stack (or higher if possible). Being higher for longer and using less engine thrust means the noise impact on the ground is reduced (up to 5 decibels) in locations 10– 25 nautical miles from the airport and directly under the approach path. The use of CDO procedures can also mean significant fuel savings and reduced emissions since less engine power is required.
- 5.12 Consideration should therefore be given to how the use of CDO and LP/LD procedures can be promoted in the course of developing new procedures and when considering proposals for changes to existing airspace arrangements. Both procedures should be regarded as “best practice” for use at all airports where local circumstances (such as terrain clearance) do not preclude it.

## Navigational accuracy

- 5.13 Navigation has been identified as one of the five components of the overall airspace system as part of the FAS.<sup>22</sup> At present, much of the UK airspace route network in the UK is going through an important change from a reliance based on "conventional navigation" whereby required routes are aligned to ground based navigation aids, to the use of PBN technology which is based on satellite navigation. Most aircraft in the UK have modern PBN technology that does not require ground based navigation aids, but there is little standardisation of how they interpret the conventional route structure. Consequently, different aircraft/operators on the same route can often be seen to overfly different areas. The FAS includes the objective that UK airspace will be redesigned to a common set of PBN standards by 2025.<sup>23</sup>

## Noise Preferential Routes (NPRs)

- 5.14 NPRs have their origins in the 1960s when the government suggested routes that aircraft should try to follow in order to minimise the number of people overflowed by departing aircraft from airports which it owned and operated. In the early 1990s, a 1.5km swathe was added to either side of these NPRs to enable track keeping performance to be assessed. Following the government’s lead, over the years a number of other airports have also established NPRs and monitored track-keeping performance. Some of these were set voluntarily by the airport whilst others were created following local planning agreements (under section 106 of the Town and Country Planning Act 1990<sup>24</sup>) with local authorities, as has been undertaken, for example, at Luton and Manchester airports. Although NPRs are currently published in the Aeronautical Information Publication, their ownership and enforcement does not rest with the CAA, but can rest with DfT<sup>25</sup> or local authorities, or the airport

<sup>21</sup> Noise From Arriving Aircraft: An Industry Code of Practice, 2006, second edition.

<sup>22</sup> <http://www.caa.co.uk/WorkArea/DownloadAsset.aspx?id=4294978317>.

<sup>23</sup> Annex B of this document has more details on PBN,

<sup>24</sup> This Act applies to England and Wales. Separate arrangements exist in Scotland and Northern Ireland.

<sup>25</sup> Currently the NPRs at Heathrow, Gatwick and Stansted airports.

themselves. Moreover, today's aircraft fly using standard instrument departure procedures which are not always identical to an NPR.

- 5.15 The government recognises that at the local level, NPRs can serve a useful purpose to help understand the track-keeping performance of departing aircraft and also as a means to assist in mitigating the impact of aircraft noise. However, whilst existing NPRs can continue, and be updated if agreed at the local level, the government considers that the implementation or retention of NPRs may not always be the most appropriate solution. Regardless of whether an NPR approach is taken, the government considers that a transparent information-based approach is the most suitable means to assist local communities in understanding the likely noise impacts they can expect to receive and to know where aircraft are actually flying. This approach also enables the communities to be given information about arriving aircraft which in many circumstances can be more of a concern.

## Specific guidance on the NPRs at the noise designated airports

- 5.16 The NPRs at the designated airports are decided by the SofS under section 78 of the Civil Aviation Act 1982. So any change to the location of an existing or new NPR at a designated airport will need to be approved by the SofS. However, the government is keen to ensure that, as with the noise controls, NPRs are determined at the local level. We therefore intend to transfer the ownership of the NPRs at the designated airports when a suitable opportunity arises in the future.
- 5.17 Until such time as the ownership of the NPRs has been transferred, any proposals for changes to the existing NPRs or proposals for new NPRs will be expected to come from the airport. Providing that the airport can demonstrate that it has fully consulted communities and other stakeholders on its proposed amendments to the NPRs arrangements, the government is likely to give serious consideration to the proposal. This is in line with the policy we are adopting on other noise controls at the designated airports. We are also seeking to ensure that the designated airports publish more route information as set out below.

## Publication of route information by the noise designated airports

- 5.18 In order to provide communities with transparency on the numbers of aircraft flown near them, the designated airports should publish details of where the aircraft are actually flying and the amount of noise created. These airports, working with their local communities, can determine the precise information they wish to publish but we anticipate that it may include:
- a. the average distance of how close to the standard instrument departure route the aircraft have flown up to an altitude of 4,000 feet, or higher if the airport wishes;
  - b. the areas, and the specific number of departing aircraft, where 80%, 90%, 95% and 99% of air traffic has flown up to an altitude of 4,000 feet and the noise level in each of these areas; and
  - c. details on the areas overflown by arriving aircraft from an altitude of below 4,000 feet to when they reach the runway.

- 5.19 The information should ideally be made available on the airport's website and also provided to their respective consultative committees. It will need to be updated on a regular basis, although the airport can determine the precise frequency of this subject to consultation with their local communities. Airports are also encouraged to provide annual information returns which will enable communities to see whether there have been any changes in traffic patterns over previous years.
- 5.20 Subject to its terms of reference, ICCAN will consider the information requirements on airports and promulgate detailed best practice advice on what it should cover which the government expects airports to follow.
- 5.21 We would encourage other airports to publish similar information as that suggested in section 5.18 above, where this is practicable.

## 6. Guidance on the Secretary of State's call-in function in the Airspace Change Process

- 6.1 In addition to the guidance on environmental objectives above issued to the CAA under section 70(2)(d) of the Transport Act, the Department for Transport wishes to provide some guidance on its own role in the airspace change process which the CAA should also note and take account of. The role of the SofS to determine some airspace change proposals, rather than the CAA, is set out in the Air Navigation Directions 2017.<sup>26</sup>

### Introduction

- 6.2 The starting assumption for the role of the SofS in the airspace change process is that the role should be proportionate, transparent, predictable (as far as possible), and reserved for cases that are considered principally to be of strategic national importance. It is also considered that the CAA, acting as the UK's independent airspace regulator, is generally best placed to make decisions on airspace changes.
- 6.3 The government considers that a "call-in" approach similar to that which exists in the planning system creates the right balance between the SofS having a role in deciding on nationally important proposals while making sure that it is clear when and how that involvement could take place. However, the government also considers that decisions made by the SofS in the planning process or by local authorities, when they have already considered detailed flightpath arrangements, should not be reopened through consideration of detailed airspace changes. It is also considered appropriate that the SofS call-in process would not apply to proposals put forward by or on behalf of the MoD or extend to temporary airspace arrangements.<sup>27</sup>
- 6.4 The SofS is required to act impartially in call-in decisions. Consequently, only a Minister without a direct link to the area underneath the proposed flightpath (extending from the ground up to 7,000 feet) will make the final decision.

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<sup>26</sup> The Civil Aviation Authority (Air Navigation) Directions 2017, Direction 6, see Annex D of this guidance.

<sup>27</sup> The SofS will continue to be able to exercise the powers in the Air Navigation Order 2016, as amended, to implement restrictions of flying where this is deemed necessary.

## Criteria for call-in

- 6.5 Any party can ask for the SofS to call-in a proposal to permanently change the design of UK airspace.
- 6.6 If an airspace change proposal met the call-in criteria, the SofS will have a discretion whether or not to call it in and there is no obligation on the SofS to call-in a specific airspace change.
- 6.7 In accordance with the call-in criteria as set out in the Air Navigation Directions 2017<sup>28</sup>, the CAA must require that the sponsor assesses whether the anticipated noise impact of its proposals will meet the relevant call-in criterion and provide that assessment to the SofS to enable the expected noise impact to be checked and determined by the SofS.
- 6.8 If a proposal is called in, the SofS will be supported in their decision-making by a senior DfT official who was not involved in any of the discussions with the CAA or sponsor of relevance to the proposal. The SofS will then make the decision to approve or reject the change proposal instead of the CAA. This consideration will be to particularly reflect on any environmental impacts against the economic benefits of the proposal. A called-in proposal will not be subject to a full public enquiry during the consideration of the proposals by the DfT. This is because the proposal would already have been subject to the requirements of the CAA's airspace change process, which includes detailed requirements to consult widely and appropriately.

## Coming into Force and transition arrangements

- 6.9 The SofS call-in process will commence from 1 January 2018, as established in Direction 6 of the Air Navigation Directions 2017. It will form part of the UK's airspace change process for any new proposals submitted to the CAA for approval after that date.
- 6.10 Although the call-in process will apply to such proposals, the existing airspace change arrangements, including the need to follow the Air Navigation Guidance 2014, would otherwise apply to any change proposal which had already been consulted on at the time of publication of this guidance, although sponsors of such proposals should be encouraged to follow the new arrangements where it is practicable to do so.<sup>29</sup>
- 6.11 The CAA is encouraged to consult the SofS if it considers there is any doubt as regards whether the Air Navigation Guidance 2017 may apply to an ongoing airspace change proposal which has yet to be submitted formally to the CAA for approval.

## Handling of the call-in process

- 6.12 The CAA should inform the DfT when it has received a proposal for an airspace change which it has begun to consider. If there has been a request from a third party

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<sup>28</sup> The Civil Aviation Authority (Air Navigation) Directions 2017, Direction 6(5), see Annex D of this guidance.

<sup>29</sup> The new call-in process would, as set out in Direction 6.6, apply to any proposal submitted to the CAA for approval after 1 January 2018 when the Directions come into force, see Annex D of this guidance.

for SofS call-in, the CAA should inform the DfT and provide the information on the proposal's noise and economic benefit in a form that can be assessed quickly by officials at the DfT.

- 6.13 Each request for the SofS to call-in an airspace change proposal will be considered by the DfT in the light of the criteria set out in the Air Navigation Directions 2017.<sup>30</sup> The call-in request should be submitted in writing to the DfT within 4 weeks of the proposal being submitted to the CAA otherwise it will not be considered.
- 6.14 Once a request has been made, we will seek to advise the CAA and the requestor within 8 weeks of the proposal being submitted as to whether the call-in function is to be exercised. The CAA should make allowance for these timings in its airspace change process.
- 6.15 If the SofS decides not to exercise the call-in function, the CAA can continue to determine the case without any further involvement of the SofS. If the SofS decides to exercise the call-in function, the process outlined in sections 6.16 to 6.17 below will be followed.

## DfT process for handling a call-in proposal for an airspace change

- 6.16 Once the SofS has decided that an airspace change proposal should be called-in, the following process, which the CAA should ensure that its airspace change process includes provision for, will be exercised:
  - a. CAA will continue its consideration of the proposal up to the point that it is able to give an informed opinion on the airspace change proposal;
  - b. once the CAA has reached its opinion on the proposal, it should inform the DfT what this is;
  - c. a senior DfT official will then be tasked with considering the proposal and making a recommendation to the SofS whether it should be approved or not. The person appointed would consider the evidence presented by the sponsor, including the options appraisal and seek to take account of the views of other relevant parties, including ICCAN, as well as the professional technical advice and opinion of the CAA on the proposal;
  - d. after considering the relevant information, the senior DfT official would make a recommendation to the SofS on whether the proposal should be: approved, rejected; or subject to further work such as additional consultation requirements;
  - e. the SofS then makes the decision on the airspace change proposal taking into account the recommendation of the senior official and the opinion of the CAA, but the SofS is not obliged to follow any recommendation or opinion made on the proposal;
  - f. the DfT will then advise the CAA, the sponsor, and the initial requestor of the call-in, of the decision reached by the SofS;

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<sup>30</sup> The Civil Aviation Authority (Air Navigation) Directions 2017, Direction 6(5), see Annex D of this guidance.

- g. if the decision is to reject or approve the proposal then that is the end of the call-in process, but if further work is required from the sponsor then the process would return to (c) above and flow from there once the additional requirements have been met; and
  - h. if further work is considered necessary, the CAA would be asked for its views on the desired additional work programme, on any further information provided by the sponsor, and whether its opinion on the proposal had changed in light of the completion of any new work requested by the SofS.
- 6.17 There is no fixed timetable for handling a called-in proposal, but the DfT would aim to make the final decision within 3 months of the date the CAA has provided its opinion on the proposal or as soon as practical thereafter. The DfT will also keep the CAA informed as to the progress of the call-in proposal. The CAA should ensure that its airspace change process and associated guidance also takes into account the possibility that a further extension in the time required for consideration by the SofS may be needed, including if the sponsor is asked by the SofS to undertake some additional work.

## Called in proposals which might affect the NPRs at the designated airports

- 6.18 If a proposal relating to one of the designated airports includes the need to amend an existing NPR or to create a new one, the sponsor of that change must make the CAA and the DfT aware of this when making its submission to the CAA. If such a proposal is subsequently called in by the SofS, its consideration by the SofS will also include taking account of the future NPR arrangements. When making the final decision on a proposal involving a NPR at a designated airport, the SofS would include a statement regarding the NPR aspects of the proposal.

# 7. Revision of guidance and enquiries

## Revision/ amendment of guidance

This guidance will be reviewed by the Department on a regular basis and may be amended or replaced as deemed necessary by the SofS. Minor amendments may not need to be consulted on but any substantial changes to this guidance could be consulted on in line with the government policy on consultations at the time the change was proposed.

## Enquiries about this guidance

Any enquiries about this guidance should be directed to:

Department for Transport Great Minster House

33 Horseferry Road LONDON SW1P 4DR

Telephone – 0300 330 3000 Website – [www.gov.uk/dft](http://www.gov.uk/dft)

General email enquiries <https://www.dft.gov.uk/about/contact/form/>

## Annex A: Glossary

Acronym	Term	Meaning
ACP	Airspace Change Process	The CAA's airspace change process which is set out in its Civil Aviation Publication 725 (CAP 725).
AIP	Aeronautical Information Publication	A document which sets out the detailed structure of the UK's airspace and which is also intended to satisfy international requirements for the exchange of aeronautical information.
AND	Air Navigation Directions	"The CAA (Air Navigation) Directions". These directions were issued by the SofS for Transport and SofS for Defence and set out the CAA's air navigation duties. A copy of the Air Navigation Directions 2017 is provided in Annex D of this document.
ANG	Air Navigation Guidance	This document, which provides guidance to the aviation industry and the CAA on air navigation.
ANSP	Air Navigation Service Provider	A public or private entity providing air navigation services for general air traffic.
ATC	Air Traffic Control	The service provided by controllers to prevent collisions between aircraft and to expedite and maintain an orderly flow of air traffic.
ATS	Air Traffic Services	The various flight information services, alerting services, air traffic advisory services and ATC services (area, approach and aerodrome control services).
	Airspace Design	The structures of UK airspace and flight procedures within it.

	Airspace Structure	A specific volume of airspace designed to ensure the safe and optimal operation of aircraft. It is overseen by the CAA and any changes to it need to follow the CAA's airspace change process.
	Airspace Management	A planning function with the primary objective of maximising the utilisation of available airspace.
	Airspace Users	All aircraft operated as general air traffic.
CAA	Civil Aviation Authority	The statutory body which oversees and regulates all aspects of civil aviation in the United Kingdom.
CAT	Commercial Air Transport	Any aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.
	Concentration	This is where aircraft are instructed by controllers or follow procedures which mean that they fly the same route consistently with minimal dispersion.
DfT	Department for Transport	The government department that leads on UK aviation and the author of the Air Navigation Guidance.
	Dispersion/Dispersion	Dispersion is the consequence of either natural variation from a flight path as a result of navigational limitations, or tactical vectoring of individual aircraft by ATC.
FAS	Future Airspace Strategy	The agreed UK plan to modernise airspace by 2030.
GAT	General Air Traffic	All movements of civil aircraft, as well as all movements of State aircraft (including military, customs and police aircraft) when these movements are carried out in conformity with the procedures of the ICAO.
	Holding stacks	A fixed circling pattern in which aircraft fly whilst they wait to land. When airports are busy, there can be a build-up of aeroplanes waiting to land.
ICAO	International Civil Aviation Organisation	The international aviation body established by the 1944 Chicago Convention on International Civil Aviation.
ICCAN	Independent Commission on Civil Aviation Noise	The independent UK body responsible for creating, compiling and

		disseminating best practice to the aviation industry.
LAeq		The measure used to describe the average sound level experienced over a period of time resulting in a single decibel value. Measurements are always in decibels (dB), though these are not stated.
LAeq16hr		The LAeq for daytime noise measured between 7am-11pm. Historically measured over the 92-day summer period from 16 June to 15 September inclusive.
LAeq8hr		The LAeq for nighttime noise measured between 11pm-7am. Historically measured over the 92-day summer period from 16 June to 15 September inclusive.
NATS		The UK's en-route air navigation service provider which also provides services at many UK airports.
	Navigation Services	The facilities and services that provide aircraft with positioning and timing information.
	Noise Contours	These are lines or circles on a map showing where equal levels of noise are experienced.
	Noise Respite	The principle of noise respite is to provide planned and defined periods of perceptible noise relief to people living directly under a flight path.
NPRs	Noise Preferential Routes	Noise Preferential Routes (NPRs) set the overall framework within which the flightpaths at a number of airports, including Heathrow, Gatwick and Stansted, were originally designed to mitigate noise.
PBN	Performance Based Navigation	A concept developed by ICAO that moves aviation away from the traditional use of aircraft navigating by ground based beacons to a system more reliant on airborne technologies, utilising area navigation and global navigation satellite systems.
	Relief	This is when multiple routes are designed and operated far enough apart to offer a perceptible reduction in noise for communities. Respite is one form of relief, but multiple flight paths could also be operated at the same

		time but with an alternating pattern of operation.
	Route Network	The network of specified routes for channelling the flow of general air traffic as necessary for the provision of ATC services.
	Routing	The chosen itinerary to be followed by an aircraft during its operation.
	Sponsor	A person or organisation developing and then submitting a proposal to change the design of airspace.
SIDs	Standard Instrument Departure routes	These are the established departure routes which are published in the AIP and which should be flown by aircraft when departing airports which have SIDs.
STARS	Standard Terminal Arrival Routes	These are the established arrival routes for aircraft which are published in the AIP. They end at holding stacks.
	Swathe	A specific area and volume of airspace in which controllers are vectoring aircraft or, as in the case of NPRs, in which track keeping of aircraft is being monitored.
	Vectoring	This is where an air traffic controller directs the pilot of an aircraft to fly a specific compass heading which can be off the normal airspace route structure.

# Annex B: Performance Based Navigation

## Performance Based Navigation (PBN)

- B.1 PBN is the framework that defines the performance requirements for aircraft navigating on an air traffic service (ATS) route, terminal procedure or in a designated airspace. Its two main components are Area Navigation (RNAV) and Required Navigation Performance (RNP) specifications.
- B.2 The use of PBN enhances navigational accuracy and introduces a number of key benefits. These include: the ability to reduce the amount of ground-based navigational-related infrastructure needed; a safer and more efficient ATC system requiring less controller intervention; more efficient aircraft operations leading to less cost, flying time and emissions; and the ability to allow more predictable patterns of over flight as well as stabilised arrivals and approaches. PBN has the potential to reduce the number of people affected by aircraft noise by offering the flexibility to circumnavigate densely populated areas as well as offering increased options for the establishment of noise respite/relief routes. The government therefore considers that the use of PBN will add a significant enhancement to the overall efficiency and capacity of the UK airspace network which allows the sustainable development of the air traffic network to accommodate future traffic levels.
- B.3 With PBN, the overall level of aircraft track-keeping is greatly improved for both approach and departure tracks, meaning aircraft will be more concentrated around the published route. This will mean noise impacts are concentrated on a smaller area, thereby exposing fewer people to noise than occurs with equivalent conventional procedures. However, experience at airports where PBN has been implemented demonstrates that this increased concentration of traffic can cause significant impacts on those living directly underneath the flightpath.
- B.4 The use of PBN procedures to create alternation of flight paths may be appropriate in some local circumstances, but it is also likely to increase the number of people who are affected by aircraft noise (albeit in a more predictable manner) and so should always be introduced only following consultation with the relevant local communities and stakeholders.
- B.5 The move to PBN requires the updating of existing route structures such as Standard Instrument Departures (SIDs), Standard Terminal Arrival Routes (STARs) and Initial Approach Procedures (IAPs). Updating individual routes in terminal areas can fall into one of two categories: "replication" where the existing route alignment is preserved as much as possible whilst catering for the greater navigational accuracy of PBN, or "redesign" where seeking to optimise the introduction of PBN will require consideration of a different alignment.

# Annex C: Options appraisal of an airspace change

- C.1 This document draws together and directs the reader to the key elements of WebTAG that are useful for conducting an appraisal of noise impacts for an Options Appraisal of an airspace change proposal.
- C.2 WebTAG is the Department for Transport's suite of guidance on assessing the expected impacts of policy proposals and projects. This guidance covers various transport modes including; rail, road, aviation, walking and cycling. Although designed primarily for use by government, the guidance can also be used by transport practitioners as all of WebTAG is publically available. WebTAG includes guidance documents, excel tools, excel data books and excel summary sheets.
- C.3 Relevant to airspace changes is the guidance document on environmental impacts<sup>31</sup>, specifically noise, greenhouse gases and local air quality. These guidance documents are supplemented by excel tools which can be used to monetise certain aspects of the environmental impacts given the correct inputs are available.<sup>32</sup> This document explains the process, data requirements and outputs of the noise excel tool.
- C.4 The value of WebTAG outputs are dependent on the inputs to the excel tools, for example some form of environmental modelling is required for each of the noise, greenhouse gas and local air quality excel tools. Not all impacts can be monetised, for example in noise, monetary values currently only exist for average noise contours, metrics such as overflight cannot currently be monetised by WebTAG. This does not mean they should be dismissed, impacts should be considered even if they can only be described or captured in numbers i.e. number of overflight events.
- C.5 WebTAG is updated to keep its methods and values in line with good practice, meeting the Treasury's Green Book guidance. New evidence and methodologies are incorporated when available and after appropriate peer review. All updates (historic and planned) are documented on the relevant web pages.

## Monetisation

- C.6 Where costs are monetised these should be presented as a single present value over the full appraisal period as well as a schedule of real prices over the appraisal period i.e. £X over 10 years and £Y per year. Advice on how to calculate present

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<sup>31</sup> DfT, "TAG unit A3 environmental impact appraisal, December 2015", <https://www.gov.uk/government/publications/webtag-tag-unit-a3-environmental-impact-appraisal-december-2015>

<sup>32</sup> DfT, "WebTAG: environmental impacts worksheets", see Noise workbook, <https://www.gov.uk/government/publications/webtag-environmental-impacts-worksheets>

values and real prices can be found in the Green Book.<sup>33</sup> These impacts should be assessed alongside other impacts identified in the airspace change process.

**Noise**

- C.7 Noise modelling of the options and base case is required for the year when the change takes place and the final year of the appraisal, which should be until impacts are expected until. Further interim years can be modelled, for example if the noise impacts over the appraisal period are not expected to be linear and it’s proportionate to model additional years, but this would require a multi-stage process in Transport Analysis Guidance (TAG) modelling.
- C.8 Outputs from noise modelling: persons and households with households within specific noise exposure contours, for the opening and final years (as a minimum), for contours in 1dB bands from 51dB LAeq 16hr (average summer day) and 45dB LAeq 8hr (average summer night) to 81+ LAeq 16hr/8hr as applicable.
- C.9 To monetise the noise impacts it is recommended to use the TAG noise workbook.<sup>34</sup> From the noise assessment, input the number of households into the noise workbook input matrix tables based on the estimated noise exposure for the base case and the proposed airspace design option.

**Table 1: WebTAG input format - number of households experiencing specified noise level in base case and the airspace design option, presented here in 3dB bands**

(dB LAeq, 16h)	Option	51-54	54-57	57-60	60-63	63-66	66-69	69-72	72-75	75-78	78-81	81+
Base case												
51-54												
54-57												
57-60												
60-63												
63-66												
66-69												
69-72												
72-75												
75-78												
78-81												
81+												

C.10 You will have to model one option at a time. Household numbers are required for the base case and the option in the opening year and final year respectively (or intermediate year if impacts are not expected to be linear over the appraisal period and it’s proportionate to model additional years) for day and night contours as appropriate.

- C.11 Other inputs required include:
- Option/scheme name
  - Opening year and forecast year

<sup>33</sup> See “Adjusting for relative price changes” para 5.42-5.47 and “Discounting” para 5.48-5.53, HMT Green Book (2011), [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/220541/green\\_book\\_complete.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf)

<sup>34</sup> TAG noise workbook, <https://www.gov.uk/government/publications/webtag-environmental-impacts-worksheets>

- Scheme type: this should be aviation
- Current year
- Night noise modelling included: yes/no
- Income base year
- Price base year
- Assumed average household size: 1 if inputs are based directly on population, 2.3 is default household size but this should be replaced with local information if known
- Appraisal period: this should be based on the expected length of time that the airspace change will be in place for and impacts will be realised. The CAA recommend a 10 year default.
- Present value base year
- Outputs price year
- Discount rate: default is the Green Book's social discount rate of 3.5%, departure from this must be justified

C.12 Outputs: monetised net present value of total noise impact and broken down by health and amenity (annoyance) impact. Quantitative results are given for the total number of households with an increase in daytime noise and night time noise, as well as totals for the number of households expected to experience a decrease in daytime and night time noise.

C.13 There is space to add qualitative comments. This may be used to describe local circumstance, specifics about the option in relation to noise or alternative metrics. These outputs should then be added to the Appraisal Summary Sheet.

C.14 For further information see:

DfT, "TAG unit A3 environmental impact appraisal, December 2015",  
<https://www.gov.uk/government/publications/webtag-tag-unit-a3-environmental-impact-appraisal-december-2015>

DfT, "WebTAG: environmental impacts worksheets", see Noise workbook,  
<https://www.gov.uk/government/publications/webtag-environmental-impacts-worksheets>

HM Treasury (2011), "The Green Book: Appraisal and Evaluation in Central Government",  
<https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

## Annex D: The Civil Aviation Authority (Air Navigation) Directions 2017<sup>35</sup>

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<sup>35</sup> These were signed by the SofS for Transport and the SofS for Defence and issued to the CAA on 18 October 2017.

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## DIRECTIONS

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### CIVIL AVIATION

#### The Civil Aviation Authority (Air Navigation) Directions 2017

The Secretary of State for Transport and the Secretary of State for Defence, in exercise of the powers conferred by sections 66(1), 68 and 104(2) of the Transport Act 2000(a), give the following Directions:

##### **Citation, commencement and application**

1.—(1) These Directions may be cited as the Civil Aviation Authority (Air Navigation) Directions 2017 and come into force on 1st January 2018.

(2) These Directions are given to the CAA.

##### **Interpretation**

2. In these Directions—

“the Act” means the Transport Act 2000;

“airspace design” means the structures of UK airspace and flight procedures within it;

“airspace structure” means a specific volume of airspace designed to ensure the safe and optimal operation of aircraft;

“airspace trial” means—

(a) changes to airspace design, or ATC operational procedures, for the purposes of investigating the feasibility of, or validating proposals for, innovative airspace design, technology or ATC operational procedures, or

(b) a test of an airspace design or an ATC operational practice, in order to assess its performance and effect;

“ATC” means Air Traffic Control;

“the CAA” means the Civil Aviation Authority;

“flight procedures” means a set of predetermined segments intended to be followed by a pilot when arriving to or departing from an aerodrome, which procedures are either instrument flight procedures or visual flight procedures;

“JANSC” means the Joint Air Navigation Services Council;

“the MoD” means the Ministry of Defence;

“UK AIP” means the Aeronautical Information Publication for the United Kingdom;

“UK airspace” means airspace in managed areas (which has the meaning given in section 72(3) of the Act (interpretation)).

##### **Airspace design**

3. The CAA must—

(a) develop and publish a national policy for the classification of UK airspace;

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(a) 2000 c. 38.

- (b) classify UK airspace in accordance with such national policy, publish such classification, keep such classification under review and, as the CAA considers necessary, modify it;
- (c) develop and publish rules, guidelines, technical design criteria and common procedures for the use of UK airspace;
- (d) ensure that an Aeronautical Information Service is provided for UK airspace, including the CAA being responsible for the form and content of the UK AIP, in accordance with international obligations (including Annex 15 of the International Convention on Civil Aviation);
- (e) prepare and maintain a co-ordinated strategy and plan for the use of UK airspace for air navigation up to 2040, including for the modernisation of the use of such airspace;
- (f) consult the Secretary of State in relation to the preparation and maintenance of such strategy and the detail to be included in such plan; and
- (g) report to the Secretary of State annually on the delivery of the strategy referred to in sub-paragraph (e), the first such report to be provided by the end of 2018.

#### **Airspace changes: procedure and guidance**

4.—(1) Subject to directions 6 and 9, the CAA must develop and publish procedures, and guidance on such procedures, for the development, making and consideration of a proposal—

- (a) for a permanent change to airspace design,
- (b) for a temporary change to airspace design, or
- (c) for an airspace trial.

(2) A procedure developed under paragraph (1) must be proportionate and reflect published Government policy.

(3) The procedure developed and published under paragraph (1)(a) must require the sponsor of the proposed permanent change to airspace design to—

- (a) assess whether the criterion referred to in direction 6(5)(c) would be met; and
- (b) provide such assessment to the CAA when making the proposal.

#### **Proposed permanent change to airspace design**

5.—(1) Subject to direction 6, in accordance with its published strategy, procedures and policy on the design and classification of UK airspace, the CAA must decide whether to approve a proposal for a permanent change to airspace design.

(2) The CAA may make its approval of a proposal subject to such modifications and conditions as the CAA considers necessary.

#### **Secretary of State's call in power**

6.—(1) Subject to paragraph (5), the CAA must notify the Secretary of State where, in respect of a proposal received for a permanent change to airspace design, the CAA has received what it considers is a request to refer the proposal to the Secretary of State for determination on the grounds that one or more of the call in criteria have been met.

(2) Where following a notification under paragraph (1) the Secretary of State considers that one or more of the call in criteria have been met, the Secretary of State may require the CAA to refer the proposal concerned to the Secretary of State for determination.

(3) The CAA—

- (a) is not to refer a proposal under paragraph (2) until it has considered the proposal and reached a view on whether or not it would be minded to approve the change proposed (with or without modification or conditions); and

- (b) is to inform the Secretary of State of its view when referring the proposal under paragraph (2).
- (4) Where the Secretary of State has not requested the CAA to refer the proposal under paragraph (2), the CAA is to proceed to determine the proposal in accordance with direction 5.
- (5) For the purposes of this direction, the “call in criteria” are that the proposed change—
  - (a) is of strategic national importance,
  - (b) could have a significant impact (positive or negative) on the economic growth of the United Kingdom, or
  - (c) could both lead to a change in noise distribution resulting in a 10,000 net increase in the number of people subjected to a noise level of at least 54 dB LAeq 16hr and have an identified adverse impact on health and quality of life.
- (6) This direction does not apply to a proposal which is—
  - (a) submitted by, or on behalf of, the MoD,
  - (b) directly related to a planning decision which had already been determined by the Secretary of State,
  - (c) directly related to a planning decision made by another planning authority which involved detailed consideration of changes to flight paths in UK airspace, consequential on the proposed development, which the sponsor has taken into account when developing its proposal, or
  - (d) submitted to the CAA for approval before the coming into force of these Directions.

#### **Temporary changes to airspace design**

7.—(1) In accordance with its published strategy, procedures and policy on the design and classification of UK airspace, the CAA must consider and determine any proposal for a temporary change in airspace design.

(2) Where the CAA decides to approve any such proposal, it must either make a change to the UK AIP or issue a Notice to Airmen (NOTAM) in relation to such change.

(3) The CAA may make its approval of a proposal subject to such modifications and conditions as the CAA considers necessary.

(4) A temporary change approved by the CAA under this direction is to last for such fixed period as the CAA considers appropriate, which other than in exceptional circumstances is not to be for more than 90 days.

(5) In exceptional circumstances the CAA may extend the period approved for the temporary change for a further period of up to 90 days, provided that the CAA is satisfied that such an extension is not sought as a means to avoid making a proposal for a permanent change to airspace design.

#### **Airspace trials**

8.—(1) In accordance with its published strategy, procedures and policy on the design and classification of UK airspace, the CAA may consider and determine any proposal for an airspace trial.

(2) Where the CAA decides to approve any such proposal, it must either make a change to the UK AIP or issue a Notice to Airmen (NOTAM) in relation to such change.

(3) The CAA may make its approval of an airspace trial subject to such modifications and conditions as the CAA considers necessary.

(4) Subject to paragraph (5), an airspace trial approved by the CAA under this direction is to last for such fixed period as the CAA considers appropriate, which is not usually to be for more than six months.

(5) The CAA may extend the period approved for an airspace trial, provided that the CAA is satisfied that such an extension is not sought as a means to avoid making a proposal for a permanent change to airspace design.

(6) The CAA may require an airspace trial to end before the end of the period for which it was approved where the CAA considers it appropriate, safe and practical to do so.

#### **Airspace changes proposed by the MoD**

9. In considering and determining a proposal referred to in direction 4(1) which is submitted by, or on behalf of, the MoD, the CAA must not take into account any impacts on the environment resulting from the use of aircraft by or on behalf of the armed forces of the Crown.

#### **Lower Airspace Radar Service**

10.—(1) The CAA is to determine the extent and coverage needed for a Lower Airspace Radar Service for UK airspace and procure and administer such a Service.

(2) The CAA is to keep the provision of such a Service under review and provide a report to the Secretary of State on—

- (a) the costs and benefits of the current Service,
- (b) the extent and coverage it considers suitable for this Service in the UK, and
- (c) how the Service should be funded and recommendations for alternative means of funding it.

(3) The CAA is to provide a report under paragraph (2)—

- (a) by the end of 2019, and
- (b) on or before the third anniversary of such report and of every subsequent report.

#### **Aeronautical radio frequencies and secondary surveillance radar codes**

11. The CAA must monitor and enforce national policy for the use and assignment of civil aeronautical radio frequencies and Secondary Surveillance Radar codes in accordance with international obligations.

#### **Relationship with the Secretary of State for Defence**

12.—(1) The CAA is to agree arrangements with the MoD for the MoD's role in the joint and integrated civil and military provision of air traffic services.

(2) The CAA is to ensure that such arrangements are documented in a Memorandum of Understanding between the CAA and the MoD.

(3) The CAA is to agree arrangements with the MoD for the CAA to second and resource an appropriate number of personnel from the MoD, of the appropriate rank and experience, to contribute to the CAA's work on airspace-related matters.

(4) The CAA is to ensure that such arrangements are documented in a Resource and Interface Arrangement between the CAA and the MoD.

(5) Without prejudice to section 67 of the Act, paragraphs (6) to (8) apply where it appears to the CAA that there is a need to increase the volume, or alter the classification, of UK airspace, but to do so might, in the opinion of the CAA or the MoD, have an adverse affect on the ability of the armed forces of the Crown to maintain their operational capability.

(6) The CAA must seek the approval of the Secretary of State for Defence before proceeding with any such change to UK airspace.

(7) Where the Secretary of State for Defence is content with the proposed change, the CAA must ensure that such further consultation on the proposal is undertaken as required under these Directions.

(8) Where the Secretary of State for Defence is not content with the proposed change, the CAA may only approve the proposed change in accordance with directions given by the Secretary of State under section 68(3) of the Act.

### **Institutional arrangements, advice and support**

**13.**—(1) The CAA is to establish and operate such institutional arrangements with regard to air navigation as the CAA considers necessary to promote the safe, effective and efficient, integrated operation of air traffic in the UK.

(2) The CAA must provide or procure the provision of such advice in relation to air navigation as the Secretary of State may reasonably require.

(3) The CAA is to provide support to the UK Airprox Board for the analysis, categorisation and understanding of pilot and controller reported risk-bearing occurrences.

### **The Joint Air Navigation Services Council**

**14.** The CAA is to ensure the continuation of JANSC in accordance with the Schedule to these Directions.

### **Other functions relating to the environmental impact of the use of UK airspace**

**15.**—(1) The CAA must prepare and publish guidance on transparency and engagement for operational changes to airspace usage by aircraft (not covered by directions 4 to 8) which might have affected the noise impact on other persons.

(2) The CAA must establish and maintain a process to receive, classify and respond to complaints received by it in relation to the environmental impact (including noise) of the use by civil aircraft (including general aviation and helicopters) of UK airspace.

(3) On a request by the Secretary of State, the CAA must provide the Secretary of State with a summary of complaints received by it during a specified period, or of complaints relating to a particular issue.

### **International relations**

**16.** The CAA—

- (a) must contribute to the development of international air navigation and provide such assistance as the Secretary of State may request, including (subject to section 2(4) of the Civil Aviation Act 1982(a)) international representation on behalf of the United Kingdom;
- (b) must maintain close co-operation in relation to air navigation with international organisations and the civil aviation authorities of other States; and
- (c) may consider and propose international agreements in relation to air navigation and notify the Secretary of State of any such agreements which would need to be approved by the Secretary of State.

### **Revocations**

**17.** The following Directions are revoked—

- (a) the Civil Aviation Authority (Air Navigation) Directions 2001, and
- (b) the Civil Aviation Authority (Air Navigation) (Variation) Direction 2004.

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(a) 1982 c. 16.

Dated:

Secretary of State for Transport

Secretary of State for Defence

## SCHEDULE

Direction 14

### Joint Air Navigation Services Council

**1.** JANSOC is the principal mechanism for maintaining high-level oversight of arrangements between the CAA, NATS (En Route) plc and the MoD, for the continued provision of joint and integrated air traffic services (J&I ATS).

**2.** JANSOC is to ensure compliance with the J&I ATS obligations placed on the CAA, the MoD and NATS (En Route) plc, as detailed in the Civil Air Publication 740: UK Airspace Management Policy.

**3.** JANSOC is to seek to meet every 6 months and is to be chaired by the CAA Group Director, Safety and Airspace Regulation; with the other members of JANSOC being the RAF Battlespace Management Force Commander (as representative of the MoD) and the Chief Executive of NATS Holdings Limited. Other persons may attend meetings at the request of JANSOC.

**Confirmed minutes of the SEMLEP Board Meeting  
Wednesday 22 February 2023  
10:02 – 13:03  
Via Zoom**

<b>Private sector Board Directors:</b>	<b>Peter Horrocks CBE</b> , Chair <b>Neus Garriock</b> , Galliford Try and Private sector Deputy Chair <b>Rachel Mallows MBE DL</b> , The Mallows Company <b>Professor Rebecca Bunting</b> , University of Bedfordshire <b>David Bailey</b> , DJWB & Co Business Advisors – joined at 10:32 <b>Professor Christopher Fogwill</b> , Cranfield University <b>Andrea Wilson</b> , Hone All <b>Anna Clarke</b> , MK College Group <b>Pat Brennan-Barrett</b> , Northampton College – joined at 10:39
<b>Public sector Board Directors:</b>	<b>Cllr Jonathan Nunn</b> , West Northamptonshire Council <b>Mayor Dave Hodgson MBE</b> , Bedford Borough Council <b>Cllr Peter Marland</b> , Milton Keynes Council <b>Cllr Hazel Simmons</b> , Luton Borough Council <b>Cllr David Brackenbury</b> , North Northamptonshire Council
<b>Observers/ Attendees:</b>	<b>Kevin Hocter</b> , BEIS <b>Rachel McGrath</b> , VCSE – left at midday <b>Cllr Barry Wood</b> , Cherwell District Council – for item 61.6
<b>Accountable Body representative:</b>	<b>Darren Lambert</b> , Finance Business Partner, Luton Borough Council
<b>SEMLEP Executives:</b>	<b>Hilary Chipping</b> , Chief Executive Officer <b>Judith Barker</b> , Director of Programmes and Governance <b>Vicky Hlomuka</b> , Growth Hub Manager – for item 61.8
<b>Apologies:</b>	<b>Cllr Richard Wenham</b> , Central Bedfordshire Council and Public sector Deputy Chair <b>David Sheridan</b> , Europa Components Plc
<b>Quorum required:</b>	<b>Private sector Directors: 4</b> <b>Public sector Directors: 2</b>

Agenda Item No	Description	Action
61.1	<p><i>The meeting was recorded for the purpose of the minutes.</i></p> <p><b>Introductions and apologies</b></p> <p><b>PH</b> welcomed everyone to the meeting and apologies were noted as above. New Board members were welcomed to their first SEMLEP Board meeting:</p>	

	<ul style="list-style-type: none"> <li>• <b>Anna Clarke</b> from MK College Group and Northampton and MK Chamber of Commerce,</li> <li>• <b>Andrea Wilson</b> from Hone All</li> <li>• <b>Professor Christopher Fogwill</b> from Cranfield University</li> </ul> <p><b>PH</b> told the Board that Judith Barker who has been responsible for looking after governance and the capital programmes will be leaving SEMLEP after eight years to join Central Bedfordshire Council. <b>PH</b> thanked <b>JB</b> for her contributions and for everything she has done for SEMLEP.</p> <p><b>Careers Hub Event</b></p> <p><b>PH</b> reported that prior to the Board meeting he, as well as <b>PBB</b> and <b>DB</b> attended the launch of the new SEMLEP wide Careers Hub. The Hub is a new service with the Careers and Enterprise company based on a pilot in Luton. The launch was a brilliant example of where the convening role, our ability to understand what businesses are looking for and to work with schools and colleges and most importantly, with our young people – our resource for the future. Looking to the future we need to ensure we continue to do as much as the good work as we have done, but with some constrained resource.</p>	
61.2	<p><b>Declarations of interests</b></p> <p><b>PH</b> noted that the Registers of Interests are published on the SEMLEP website and asked for any other interests to be declared now and throughout the meeting.</p>	
61.3	<p><b>Confidential Minutes of the Board meeting held on 24 November 2022</b></p> <p>The minutes were confirmed as a true record.</p>	
61.4	<p><b>Action Log</b></p> <p>All actions had been completed or would be covered as an agenda item.</p>	
61.5	<p><b>Governance</b></p> <p><b>Annual Performance Review</b></p> <p><b>HC</b> reported that the meeting recently took place and with the LEPs excellent delivery of Local Growth Fund and the Getting Building Fund money, DLUHC had no issues of concern at all. It was a very good meeting but have not yet heard formal outcome but not expecting any further issues to consider.</p>	
61.6	<p><b>Ox Cam Pan Regional Partnership</b></p> <p><b>Cllr BW</b> provided an update:</p> <ul style="list-style-type: none"> <li>• Proposals for a locally led partnership for the Oxford to Cambridge region has now been formally approved by government. The role of the partnership is: <i>to champion the region as a world leader in research and innovation in high-tech, high-performance technology and manufacturing. Acting to achieve environmentally, sustainable and</i></li> </ul>	

*inclusive growth. It will strengthen cross boundary collaboration among its partners to focus on tackling the issues that matter to the people who live and work here. The initial programme is to develop a set of propositions to attract international investment and profile the region on a global stage and to continue the work underway to embed shared environmental principles.*

- The area will now have a bottom-up regional partnership that is similar to organisations such as the Western Gateway or Midlands Engine etc.
- We are in competition with those areas so it is right that there is a level playing field
- It will be important to be careful not to replicate work done by others and to be careful to reflect the whole of the geography and not just Oxford and Cambridge.

**Professor CF** expressed his delight at hearing the news and noted it is a watershed moment for the region. Need to make sure that everyone is kept informed and engaged around this and ensure the potential for growth is being realised all over. SEMLEP's responsibility going forward will be to make sure we are looking at those skills pieces and engagement pieces to support ambitions around growth.

**PH** advised that he had recently engaged with other Pan Regional Partnerships. He has also been asked to take on the role of Chair of the economy subgroup and **HC** has become the Senior Responsible Officer for it. **PH** reported that Bev Hindle is stepping away at the of March and the partnership have asked if **HC** would be able to support on a temporary and part time basis. **PH** confirmed his awareness of pressures on **HC**, noting that **HC** is already doing so much in supporting the OxCam work, having **HC** involved and being responsible for it, would be more streamlined. There will be some resource that will flow into SEMLEP to support **HC** and defray some of the costs.

**The Board agreed that having HC supporting and being responsible for it is a great initiative and can help to keep the SEMLEP area involved.**

#### **Central Area Growth Board and Devolution proposals**

**Cllr PM** shared that at the recent meeting, it was agreed to task Officers to approach central government regarding a Level 2 deal (with no elected mayor) which would integrate LEP functions into a new combined authority. He said that under this model the LEP would cease to exist and be folded into the Growth Board. He noted that four of the six local authority Leaders agree and MK City Council, Bedford Borough Council, Central Bedfordshire Council and Luton Borough Council are keen to move forward with the devolution deal. North and West Northamptonshire are more cautious following the recent merging of the districts and county council.

**Cllr JN** expressed that Northamptonshire authorities have been clear that they still have concerns regarding which way the power is devolving. They agree that an elected Mayor model is not desirable. To proceed would need a clear ask and clear benefits to the area and to look carefully at what it actually means and how it would benefit the North and West Northants area.

**Cllr DB** agreed with **Cllr JN** point and noted North Northants welcome the larger regional aspect of economic, education development and partnership working. **Cllr DB** advised that North Northants will be looking at it very carefully, noting they are not adverse to working with other partnerships and organisations.

**Mayor DH** explained that the current Government and other political parties are saying that devolution is the future agenda and so Bedford Borough Council and the other local authorities in the area are therefore looking at. He noted that he understands Northamptonshire's position entirely and it is their decision. The key is devolution from Westminster and Whitehall to local authorities. The six local authorities are of substantial size and therefore need to move forward to be in the devolution deal to get a fair share of the money that is being given out to try and help skills, infrastructure and to help the residents to lead a better quality of life.

**PH** asked **KH** to explain the process and timescales.

- The framework for the devolution taking place now is set out in the Levelling Up white paper and a number of level 3 deals have been done since the paper was passed last year.
- Up until this point, level 3 deals are being prioritised but expect Ministers to make a decision on what areas to progress devolution deals with next; do they want to continue to prioritise level 3 deals as a priority over level 2 deals? Ministers will be making a statement as to what areas they want to take forward.
- There is a commitment in the Levelling Up white paper to offer devolution everywhere by 2030.
- Happy to work with officers from CAGB in terms of helping to support a proposal for the area if it is wanted to be taken forward.

**PH** asked **KH** if Ministers stuck with current position of wanting to progress level 3 deals first at the current rate of progress – when would level 2 deals then come into view?

**KH** advised that 50% of the population of England are now covered by a devolution deal but do not have a clear time frame – so far level 3 deals have been prioritised and it took half a year to negotiate deals with some places.

**NG** suggested that more clarity is required in terms of the timescales as once the deals come into place, SEMLEP is absorbed into that organisation. As we look forward, it is important to make sure there is an

	<p>organisation with a wealth of human capital and experience to be absorbed into the new structure. The organisation needs to be preserved so there is something valuable to be integrated into it.</p> <p><b>AW</b> asked for reassurance regarding if the LEPs activities will be absorbed into the Growth Board or not. <b>AW</b> asked for more clarity about how the business support side will play its part as the Growth Board. How will the Growth Board work if the deal is proceeded with.</p> <p><b>Cllr JN</b> advised that it needs to be a seamless/ modest transition and noted that future branding will be very important.</p> <p><b>Cllr PM</b> explained that the functions of the LEP would not disappear but the LEP itself would. The Growth Board would also disappear, and the Growth Board would become part of a combined authority. The difference between what is currently in place and what it would be – is that the powers and funding instead of being given by central government to this organisation, the functions and powers are devolved directly to the new combined authority. The functions do not disappear but would become the remit of the combined authority to deliver them. It would be up to the combined authority to decide what structures were put in place to engage with business, colleges etc. Government would be devolving responsibility of those functions currently carried out by the LEP to the combined authority. This would mean that the directly elected six local authorities would be able to control those LEP functions, rather than having the funding decided on an annual basis. The way forward is a type of devolution but in a different model where it is not just the funding being devolved, but the responsibility for certain functions as well.</p> <p>The issue was concluded to await further updates from local authority leaders and Government.</p>	
61.7	<p><b>Strategy</b></p> <p><b>Business Plan and Budget 2023/24 – Confidential item not published online</b></p> <p><b>Break from 12:07 – 12:15</b></p>	
61.8	<p><b>Delivery</b></p> <p><b>Growth Hub update</b></p> <p><b>RM</b> advised that the recent GH Board meeting had a particular emphasis on skills and highlighted key issues that were discussed at the meeting.</p> <ul style="list-style-type: none"> <li>• Finding people but engineers was difficult.</li> <li>• Looked at a mismatch in the skills system between those on entry to the workplace and how to tie the over 50s together in a tight labour market</li> <li>• Salaries and the impact of being able to get more money</li> <li>• Technological investment will continue to be very important.</li> </ul>	

	<ul style="list-style-type: none"> <li>• It was a positive and constructive meeting</li> </ul> <p><b>Vicky Hlomuka</b> joined the meeting and provided a presentation on Growth Hub activities.</p> <p><b>PH</b> thanked the team for their excellent service and for the range in ways the Growth Hub delivers their work.</p> <p><b>Growing Places Fund proposal – Confidential item not published online</b></p> <p><b>LGF &amp; GBF Programme update – Confidential item not published online</b></p> <p><b>Skills update</b></p> <p><b>PBB</b> drew attention to:</p> <ul style="list-style-type: none"> <li>• The Local Skills Improvement Plan which is being led by MK and Northampton Chamber and is an initiative of government. They are writing the skills agenda for SEMLEP and working with the Colleges. Seeking views from employers on what the skills are for the region.</li> <li>• The 7 Colleges will be writing their accountability statements to meet the priorities of the RSIPS via the curriculum response. They will be published at the end of May.</li> <li>• The Careers Hub in schools and colleges. They are looking to increase awareness and interest in technical education, tackle disadvantage, engage local employers, engage with emerging of skills and the labour market and develop a talent pipeline.</li> <li>• <b>PBB</b> suggested to discuss the reforms for level 3 qualifications in colleges at the May Board meeting as an agenda item.</li> </ul>	<p><b>Circulate slides from Careers Hub launch</b></p> <p><b>Add to the May agenda</b></p>
61.9	<p><b>FRAC update</b></p> <p><b>Cllr JN</b> advised that the recent meeting mainly discussed the budget and items already covered during the meeting. It also looked at the restructuring of the organisation and it was agreed that it was important that <b>HC</b> should front the process with her huge knowledge of the people and organisation, it was vital that was agreed.</p> <p>As always, updates were received for:</p> <ul style="list-style-type: none"> <li>• All programmes and costs</li> <li>• Community Grants</li> <li>• Growing Places Fund proposals</li> <li>• Procurement</li> <li>• Risk Register</li> </ul> <p><b>Cllr JN</b> thanked <b>JB</b> for all the work she has done to support FRAC.</p> <p><b>Risk register</b></p> <p><b>HC</b> reported that the key risks have been addressed but noted a risk regarding Luton Enterprise Zone which <b>Cllr HS</b> will provide an update on.</p>	

61.10	<p><b>Northampton Enterprise Zone update</b></p> <p><b>Cllr JN</b> provided an update:</p> <ul style="list-style-type: none"> <li>• Vulcan Works is on track</li> <li>• Horizon House has a visibility study going on at the moment</li> <li>• The Railway car park is making progress</li> <li>• Four Waterside is underway and the surveys have all been completed and will be procuring a developer.</li> </ul> <p><b>Luton Enterprise Zone update</b></p> <p><b>Cllr HS</b> provided an update:</p> <ul style="list-style-type: none"> <li>• Luton Dart will be opening just before Easter. 62 new jobs have been created and new business rates of 358k per annum have been generated.</li> <li>• Need to rethink plans for remainder of Bartlett Square due to changes in working practices since Covid-19. It is not right time to pursue new office developments, however interests have been made for the potential of a hotel development on the site. In the meantime, it is being used a car park for HART and Morton House.</li> <li>• Century Park – there have been difficulties in securing funding. Will also need to rethink plans due to a lack of demand for office space. Remain opposed to using the site only for logistics as it generates relatively few jobs and is not an ambitious use of the prime site adjacent to the countries firth largest airport. Have been working with a range of partners to create a concept called Green Horizons Park and working with a range of organisations including venture companies and finances to create a development based around: aviation, automation, advanced manufacturing and green technologies. Engagement is at a very early stage but has been productive but it is too early to go into detail at the moment.</li> <li>• There have been questions around the continuing value of the Enterprise Zone and time has now expired for the benefits to businesses.</li> <li>• The benefit of retained business rates continues until 2041 but cannot be evaluated at the moment due to the scale, scope and type of development being as yet undecided.</li> <li>• More information can be provided by the airport company as plans as begin to develop but working on a Development Consent Order for an airport expansion and once entered to Parliament, can provide a presentation to the Board.</li> </ul>	
61.11	<p><b>Any other business</b></p> <p><b>PH</b> thanked the Board for their contributions and noted the next meeting will take place on <b>Wednesday 17 May 2023</b>.</p>	

# Presidential Roundtable Summary: What impact will inflation have on global infrastructure pipelines?

May 2022

Rising inflation is putting the delivery of infrastructure pipelines globally at risk by sending the costs of construction and labour spiralling and increasing the cost of finance. This reduces the certainty that projects will go ahead, but that uncertainty can cause further increases in the costs of delivery through withheld investment in capital and talent.

In 2022, the issue of higher inflation is particularly acute, coming off the back of supply chain disruption and material shortages caused by Covid-19 pandemic-related lockdowns, coupled with governments worldwide using infrastructure investment to provide a post-pandemic stimulus.

At an ICE-hosted Presidential Roundtable, attendees from around the world discussed the drivers behind the rise in inflation, the potential impact of higher costs on infrastructure pipelines and what measures different players across the sector could take to manage the risks.

## **What is driving the rise in inflation?**

There are three main drivers behind rising inflation across the infrastructure sector – labour and skills shortages, scarcity of materials and the rising cost of energy.

Looked at globally, the matter is complicated with some causes being geographically specific. There are also a mix of short- and long-term drivers, as well as anticipated issues which have not yet fully manifested in the system but which will likely drive inflation up even further when they do.

In the UK, strong demand for projects, the impact of Brexit, and retirements from an ageing workforce have all contributed to rising costs. A cut in tax-breaks for the self-employed, which has reduced take-home pay, has driven up the rates being demanded. Alongside wider wage inflation, the industry has had to accept those higher rates due to the need for specialist skills in sectors such as rail.

In New Zealand the rising price of housing is being fuelled by a lack of land with the necessary infrastructure, as the country grapples with a huge infrastructure deficit following decades of under-investment. It has also relied on an international workforce, but strict Covid-19 border closures have cut the supply of labour and revealed wider vulnerabilities in the construction sector.

In contrast, Hong Kong has yet to experience inflationary pressures. Most of its materials come from China, where the impact has not yet been felt. However, planners still expect high inflation to affect Hong Kong, driven by a major skills and labour shortage which could see it short of 30,000 workers by 2030.

Added to those local issues, many projects are feeling the inflationary impact of meeting the higher construction standards required by net zero targets. There may also be a second-round inflationary effect as rising energy costs, exacerbated by Russia's invasion of Ukraine, are yet to fully materialise in the supply chain.

### **How is inflation impacting the infrastructure sector?**

Countries already struggling with high inflation are experiencing growing numbers of insolvencies in the supply chain, as well as project delays and cancellations.

Insolvencies are particularly high among smaller suppliers. While the cost of materials has increased, many suppliers are locked into fixed price contracts signed several years ago, forcing them out of business in this new operating environment.

The need to cancel projects has been a common symptom of inflation in many developing countries. Rising costs have made many projects in their pipelines unviable for investors, particularly where those increases cannot ultimately be passed through to consumers.

The impact of inflation in the construction sector is also being felt by the general public. For instance, in New Zealand's housing sector, the rising cost of construction is driving up prices in the market and making home ownership unaffordable for many people.

### **What can be done to mitigate inflation?**

Working in a high inflation environment is new territory for most people in the developed world. Building up the right economic knowledge and understanding the risks are crucial to navigate it.

Different players in the system, including investors, budget holders and suppliers, face different issues. With suppliers incurring huge price increases, lead contractors could seek to flex on their budgets to mitigate the damage, but may themselves be constrained by funding that is capped.

In short, all stakeholders in a project will need to understand the relevant drivers, be aware of the issues each party faces and then work to manage and allocate the inflation risk collaboratively.

The crisis does offer an opportunity for the sector to innovate and do things differently, including changing the procurement approach, involving the supply chain more and bundling contracts to create more certainty. Long-term procurement approaches, such as Project 13, can accommodate more variability. Lessons can also be learnt from the experience of navigating the Covid-19 pandemic, such as the use of fair payment that helped parts of the supply chain through the crisis.

The impact of inflation could be offset by increases in efficiency and productivity that help deliver projects faster using fewer materials. Approaches such as modern methods of construction (MMC) and Design for Manufacture and Assembly (DfMA) are becoming more mainstream as planners seek to cut costs.

Prioritisation and taking a higher level, portfolio-based view rather than a project-based approach to planning can also help. Instead of leaning on individual projects to cut costs, project holders might fare better by delivering fewer high-quality projects rather than a full portfolio of projects beset by cost cutting.

Longer-term devolved settlements that give subnational authorities more power over portfolios and the ability to manage programme level efficiencies and project phasing could help achieve this.

More executive level coordination between major projects could help minimise coincidence of peak demand for materials. While there is pressure to buy materials as early as possible, in some instances major national projects are effectively competing for resources and exacerbating inflation.

In the UK, there are now more tools available to help navigate periods of high inflation. The Construction Playbook, for example, sets out best practice but needs to be fully embedded across government to be effective. Accurate indices for the different parts of the sector and long-term forecasting will also be part of the solution.

### Questions to take away

- How can the different players work together to better understand the challenges across the sector and mitigate and share the inflationary risk? This is difficult with so many people in charge of contracts and procurement having little or no experience of working in a high inflation environment. However, there are lessons from the Covid-19 pandemic, new tools such as the Construction Playbook and more efficient, innovative practices that can help if they are embedded in the sector.
- What can be done to address labour shortages in the construction sector, including ensuring we are training enough people with the skills required to deliver net zero? Dealing with shortfalls in labour has been delayed many times, particularly in priority areas like retrofitting. Building up capacity in the sector needs sufficient planning and investment if we are to tackle inflation and stay on track for net zero.
- How do we ensure that our response to inflation doesn't undermine the transition to net zero? Meeting net zero requirements may be adding to inflationary pressures, but tackling inflation should not mean reducing our commitment to decarbonisation. Indeed, the pathway to energy security through a massive increase in renewable capacity shows how achieving both goals is complementary as long as we maintain a long-term view.