



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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Department for Transport
Great Minster House
33 Horseferry Road
London SW1P 4DR
Telephone 0300 330 3000
Website www.gov.uk/dft
General enquiries: <https://forms.dft.gov.uk>



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Contents

- 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. 1
- Contents 3
- Introduction 6
 - Objectives of the Guidance 6
 - Purpose and applicability of the Guidance 7
- 1. The government’s environmental objectives 8
 - Introduction 8
 - The government’s key environmental objectives 8
 - Roles and Responsibilities 9
 - Definition of altitude in this guidance 11
- 2. Airspace Change 12
 - Introduction 12
 - CAA Environmental Statement for permanent changes to airspace design 12
 - The need for options appraisals for permanent airspace design changes by sponsors 13
 - The need for engagement for permanent airspace design changes by sponsors 13
 - Arrangements for temporary changes to airspace design 15
 - Arrangements for operational trials of airspace design 15
 - Arrangements with the Ministry of Defence (MoD) 16
- 3. Detailed guidance on assessing the potential environmental impacts of airspace change options 17
 - Introduction 17

Altitude Based Priorities	17
Assessing the noise implications of proposed airspace changes	18
Introduction of Performance Based Navigation	19
Single and multiple routes	20
Designing Airspace	21
Greenhouse Gases	21
Local air quality	21
National Parks and AONB	23
Taking account of local circumstances	23
Helicopters	24
Noise Sensitive Buildings	24
The role of the ICCAN in the airspace change process	24
Other relevant legislation, policy and guidance	25
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	26
Introduction	26
Use of airspace	27
Helicopter and light aircraft-related noise	27
Expectations for transparency on aircraft movements	28
Aircraft operational changes affecting the use of airspace	28
5. Specific navigational guidance	29
Introduction	29
Departure procedures	29
Continuous Climb Operations	30
Arrival Procedures	30
Continuous Descent Operations	30
Navigational accuracy	31
Noise Preferential Routes (NPRs)	31
Specific guidance on the NPRs at the noise designated airports	32
Publication of route information by the noise designated airports	32
6. Guidance on the Secretary of State's call-in function in the Airspace Change Process	34
Introduction	34
Criteria for call-in	35
Coming into Force and transition arrangements	35
Handling of the call-in process	35

DfT process for handling a call-in proposal for an airspace change	36
Called in proposals which might affect the NPRs at the designated airports	37
7. Revision of guidance and enquiries	38
Revision/ amendment of guidance	38
Enquiries about this guidance	38
Annex A: Glossary	39
Annex B: Performance Based Navigation	43
Performance Based Navigation (PBN)	43
Annex C: Options appraisal of an airspace change	44
Annex D: The Civil Aviation Authority (Air Navigation) Directions 2017	47

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 development¹, 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.

¹ 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 2017² 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

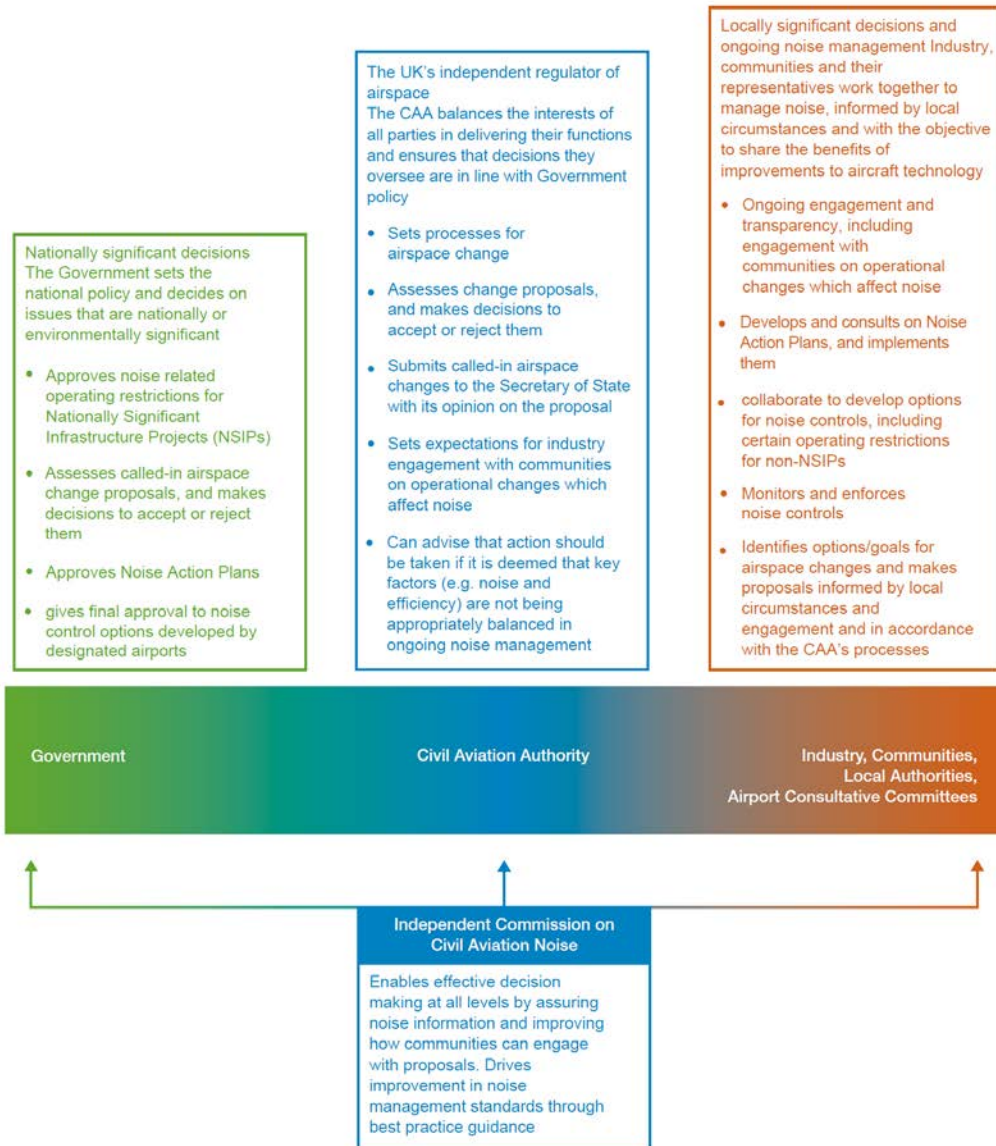
- 1.2 The environmental objectives with respect to air navigation are chosen to facilitate the government's overall environmental policies. These environmental objectives are designed to minimise the environmental impact of aviation within the context of supporting a strong and sustainable aviation sector. 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 noise³;
 - b. ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions⁴; 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.

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

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

⁴ 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.⁵ 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.⁶ The

⁵ 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>

⁶ 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 overflight⁷;
- 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.

⁷ 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.⁸ 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

⁸ 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.⁹

⁹ 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 CO₂ emissions;
- d. in the airspace at or above 7,000 feet, the CAA should prioritise the reduction of aircraft CO₂ 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 overflights¹⁰ and number above metrics: N65 for daytime noise and N60 for night time noise.¹¹ 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

¹⁰ See the CAA's definition of overflight: www.caa.co.uk/CAP1498

¹¹ 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.¹²
- 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.¹³ 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 CO₂ 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)¹⁴ 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

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

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

¹⁴ 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_x) and particulate matter are the two most important emissions affecting the air quality around airports. Studies have shown that NO_x 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.¹⁵ 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).¹⁶
- 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

¹⁵ A list of designated National Parks in the UK can be found at www.nationalparks.gov.uk. A list of designated AONB can be found at www.landscapesforlife.org.uk.

¹⁶ 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 Framework¹⁷ 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 2010.¹⁸

¹⁷ National Planning Policy Framework, Department for Communities and Local Government, March 2012.

¹⁸ 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.¹⁹
- 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.

¹⁹ <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 CO₂/fuel efficiency. CCO is considered to have an overall neutral impact on noise, but it does involve the redistribution of some noise.²⁰ 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 CO₂. 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.

²⁰ 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, 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.²¹
- 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.²² 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 2025.²³

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 1990²⁴) 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 DfT²⁵ or local authorities, or the airport

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

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

²³ Annex B of this document has more details on PBN,

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

²⁵ 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 2017.²⁶

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.²⁷
- 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.

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

²⁷ 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 2017²⁸, 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.²⁹
- 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

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

²⁹ 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 2017.³⁰ 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;

³⁰ 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

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 impacts³¹, 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.³² 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

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

³² 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.³³ 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.³⁴ 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

³³ 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

³⁴ 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 2017³⁵

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

DIRECTIONS

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;

(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.

(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.