



Department
for Transport

Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions

Department for Transport
Great Minster House
33 Horseferry Road
London SW1P 4DR
Telephone 0300 330 3000
Website www.gov.uk/dft
General email enquiries FAX9643@dft.gsi.gov.uk

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Foreword



I am very pleased to be able to present to the Civil Aviation Authority (CAA) this revised Guidance on how it should exercise its air navigation functions.

Our airspace is a vitally important national asset and it needs to be managed safely, efficiently, with due regard to the needs of both airspace users and the wider general public, and consideration for the environment. Indeed, the long-standing success of the UK's aviation industry would not have been possible without these requirements being met.

Since the Guidance was first issued to the CAA in 2002, there have been significant developments, such as the creation of the CAA's Future Airspace Strategy, the establishment of the Single European Sky and our functional airspace block with Ireland, the publication of the Government's Aviation Policy Framework and the Airports Commission Interim Report. In addition, there have been numerous aviation technical and procedural developments which will have an impact on how aircraft are flown in the future in our airspace.

This new Guidance is therefore a timely update. We consulted on a draft in June 2013 and respondents were clear that a revised version is needed. The Airports Commission's Interim Report has also stressed the need to drive forward the implementation of the Future Airspace Strategy. This Guidance should assist in delivering both this Strategy as well as ensuring that local communities continue to be involved in the decision making process for airspace changes that may affect them.

The CAA has a distinguished track record in ensuring that the requirements placed upon it by the Government are met. I hope that the revised Guidance will enable it to maintain this high standard, whilst ensuring that the efficiency of our airspace is improved and an appropriate balance is maintained between the needs of all concerned.

Robert Goodwill MP

Parliamentary Under-Secretary of State for Transport

1. Introduction

- 1.1** Section 70(2) of the Transport Act 2000¹ requires the Civil Aviation Authority (CAA) to take account of any guidance on environmental objectives given to it by the Secretary of State. In 2001, the Secretary of State gave directions² to the CAA under Section 66(1) of the Transport Act 2000 setting out the circumstances when the CAA must also seek the approval of the Secretary of State for airspace changes which might have a significant effect on the level or distribution of noise and emissions. This was followed in January 2002 when the then Department for Transport, Local Government and the Regions issued specific guidance to the CAA which has subsequently formed the basis of how the CAA interprets its environmental duties in respect of approving changes to the UK's airspace structure. Since 2002, there have been a number of significant events which have, or will do so in the foreseeable future, affect UK airspace. These are:
- a.** in December 2003, the Department for Transport issued The Future of Air Transport White Paper which recognised the need to improve the efficiency of UK airspace and it looked to the CAA, as the independent regulator responsible for the planning and regulation of UK airspace, to bring forward a structured programme for the redesign of UK airspace. The White Paper also recognised the importance of the need to take into account the environmental impacts arising from airspace changes. The need to develop a more strategic approach on airspace was endorsed subsequently by the Transport Select Committee in its 2009 report on “the use of airspace”;
 - b.** since 2009, the CAA has been leading work, with support from the Department for Transport, the Ministry of Defence, NATS and the Irish Aviation Authority³ to develop the Future Airspace Strategy (FAS) for the period up to 2030. The CAA's primary objective is to develop a “safe, efficient airspace that has the capacity to meet reasonable demand, balances the needs of all users and mitigates the impact of aviation on the environment”. This national strategy is aligned fully with our commitments under the Single European Sky (SES) legislation including implementation of the Single European Sky Air Traffic Management Research (SESAR) programme and our engagement with the Irish on the UK/Ireland Functional Airspace Block (FAB). Following development and consultation with industry, the Strategy was presented in June 2011 and set out the need to address: existing pressures on airspace; the challenges arising from future air traffic growth; the development and implementation of new technology; and the requirement to mitigate

¹ Section 70(2) of the Transport Act 2000 can be found at Annex A of this Guidance.

² The relevant sections of the Directions can be found at Annex B of this Guidance.

³ The Irish Aviation Authority's involvement is because of the joint UK/Ireland Functional Airspace Block which was established in June 2008 under the Single European Sky initiative.

aviation's impact on the environment. The Strategy also took into account the Coalition's position on additional runways and its desire to reduce aviation's contribution to climate change, a factor which has become increasingly important since 2002;

- c.** in December 2012, the industry-led FAS Industry Implementation Group launched its plan for delivering Phase 1 of the FAS up to c2025. A considerable component of the plan is the need to redesign UK's terminal airspace to make it more efficient by using new procedures such as Performance-Based Navigation (PBN) and better queue management techniques;
 - d.** in March 2013, the Government launched its Aviation Policy Framework⁴ which set out the Government's objectives and principles to guide plans and decisions at the local and regional level, including with respect to airspace. This document replaced the 2003 Future of Air Transport White Paper⁵; and
 - e.** in December 2013, the Airports Commission published its interim report⁶ which expressed its support for: the Future Airspace Strategy; the introduction of PBN; the continued need for local communities to be involved in the decision making process for airspace changes that might affect them; and for the CAA be given more delegation to decide airspace changes.
- 1.2** It is therefore now appropriate that the Government revisits and refreshes the 2002 Air Navigation Guidance to the CAA to take into account these policy and technical developments whilst remaining consistent with the overall legislative framework.⁷
- 1.3** Underpinning this new Guidance are two key objectives. The first is the recognition that the UK needs to improve the efficiency of our UK airspace network and that includes mitigating the environmental impact of aviation. Secondly, is a reaffirmation of the need to consult local communities near airports when airspace changes are being considered in the vicinity of these airports. The Government recognises that it is not an easy task to always balance the interests of local communities and relevant stakeholders with those of the aviation industry, but we are confident that the CAA will continue to play an active role in ensuring that an appropriate balance is maintained in the future.

Purpose of Guidance

- 1.4** The purpose of this Guidance is to provide the CAA and the aviation community with additional clarity on the Government's environmental objectives relating to air navigation in the UK. However, when considering airspace changes, there may be other legitimate operational objectives, such as the overriding need to maintain an acceptable level

⁴ Aviation Policy Framework, Department for Transport, March 2013.

⁵ The Future of Air Transport, Department for Transport, December 2003.

⁶ Airports Commission Interim Report, Department for Transport, December 2013.

⁷ This was one of the key messages to come out of the consultation on the proposed air navigation guidance, Consultation on Guidance to the CAA on Environmental Objectives relating to the Exercise of its Air Navigational Functions, Department for Transport, June 2013.

of air safety, the desire for sustainable development,⁸ or to enhance the overall efficiency of the UK airspace network, which need to be considered alongside these environmental objectives. We look to the CAA to determine the most appropriate balance between these competing characteristics.

Definition of altitude in this Guidance

- 1.5** Throughout this document, altitude is expressed in feet above mean sea level (amsl) in order to provide a common datum. However, we require airspace change sponsors to take account of the altitude of the specific surface level involved when developing their proposals. This is particularly the case when airspace changes involve an altitude lower than 7,000 feet (amsl).

⁸ Sustainable development has both environmental and economic connotations, the need to enable aviation to grow sustainably if the UK economy is to remain competitive and achieve the objective for growth and employment.

2. Emissions and local air quality

Emissions

- 2.1** At the global level, aviation is a growing contributor to greenhouse gas emissions (GHG) that cause climate change. The Government's climate change strategy on aviation is to ensure that the aviation sector makes a significant and cost effective contribution towards reducing global emissions. While the Government, in 2012, decided to postpone a decision about requiring emissions from international aviation and shipping to be taken into account in the setting of carbon budgets (as required by the Climate Change Act 2008) until it comes time to set the fifth carbon budget, it did reaffirm its overall commitment to the 2050 target and recognised that emissions from international aviation and shipping should be treated the same as emissions from all other sectors, in order to reach our long-term climate goals.⁹
- 2.2** The Aviation Policy Framework sets out the priorities for action on climate change at global, EU and national levels in the aviation context. The focus is expected to remain on actions to target CO₂ emissions in the near future but as scientific evidence of the effects of non-CO₂ emissions becomes clearer it is likely that the approach taken will be revised. The CAA should therefore keep abreast of the Government's climate change strategy and priorities as well as broader developments in climate science, especially as they relate to aviation.
- 2.3** The CAA has the opportunity to contribute to the Government's aim of reducing CO₂ emissions by prioritising the most efficient use of airspace including 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 procedures. The potential to maximise CO₂ efficiency is primarily above 7,000 feet (amsl) where local impacts are not a priority. CO₂ efficiency is also a consideration below 7,000 feet (amsl), although at these altitudes it must be balanced with other local impacts. More information on the altitude-based priorities is given in Chapter 4 of this Guidance.
- 2.4** Initiatives to enhance efficiency in the airspace across the UK, such as the SES and introduction of the UK-Ireland FAB, are expected to lead to an estimated reduction of 116,000 tonnes of fuel and 370,000 tonnes of

⁹ International aviation and shipping emissions and the UK's carbon budgets and 2050 target, Department of Energy and Climate Change, December 2012.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65686/7334-int-aviation-shipping-emissions-carb-budg.pdf

CO₂ between 2012 and 2015.¹⁰ Although this also includes savings in Irish airspace, it demonstrates the important contribution which a more efficient use of airspace can make to reduce the impact of aviation on the environment.

Local air quality

- 2.5** The Aviation Policy Framework sets out the Government's policy on air quality which is to "seek improved international standards to reduce emissions from aircraft and vehicles and to work with airports and local authorities as appropriate to improve air quality".¹¹
- 2.6** Aircraft engines, airport related traffic on local roads and surface vehicles all contribute to air pollution around airports. Oxides of nitrogen (NOx) and particulate matter are the two most important emissions affecting the air quality around airports. Studies have shown that NOx 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 (amsl) 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 local transport infrastructures feeding the airport.
- 2.7** While the CAA should prioritise noise below 4,000 feet (amsl), 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,¹² 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.

¹⁰ UK-Ireland FAB annual report 2011, jointly published by Irish Aviation Authority and NATS, May 2012. <http://www.nats.co.uk/wp-content/uploads/2012/07/UK-Ireland-FAB-Report-2011.pdf>

¹¹ Aviation Policy Framework, section 3.48, page 65, Department for Transport, March 2013

¹² Aviation Policy Framework, section 3.25, page 60, Department for Transport, March 2013.

3. Noise

- 3.1** Aircraft noise is one of the most important environmental impacts arising from aviation for communities living close to airports as well as those living further afield under the main arrival and departure tracks. The Government has made it clear therefore that it wants to strike a fair balance between the negative impacts of noise and the economic benefits derived from the aviation industry.¹³ In addition, the benefits from any future growth in aviation are expected to be shared between the aviation industry and local communities.
- 3.2** The Government's overall policy on aviation noise, as established in the Aviation Policy Framework, is to limit, and where possible reduce, the number of people in the UK significantly affected by aircraft noise.¹⁴ The UK aviation industry is expected therefore to address noise from low level air traffic as a local environmental priority in line with the altitude-based priorities set out in Chapter 4.1 of this Guidance. Individual airports should be encouraged to work with the appropriate air traffic service providers to give particular weight to the management and mitigation of noise in the immediate vicinity of their airports.¹⁵ This principle is further clarified in the chapter on altitude-based priorities, but it is left to the CAA to determine what should be classed as the "immediate vicinity" taking account of individual circumstances such as location of the airport, height above sea level of the surrounding countryside, numbers of people likely to be affected by noise, and the size and operating characteristics of the aircraft involved.
- 3.3** In implementing this policy, the Government fully recognises the ICAO "balanced approach" principle to aircraft noise management.¹⁶ The CAA has an opportunity to support the Government on the third principle "noise abatement operational procedures", particularly with regard to optimising how aircraft are flown and the routes they follow to reduce the noise impacts.
- 3.4** The CAA can also support those airports considering using the powers available to them to set suitable noise controls at their airports. In addition, the CAA should, where relevant and without compromising its independence, also support the efforts made by airports to mitigate noise where changes are planned which could adversely impact the noise

¹³ Aviation Policy Framework, section 3.2, page 55, Department for Transport, March 2013.

¹⁴ The Aviation Policy Framework states that the Government will continue to treat the 57dB LAeq 16 hour contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance. However, it also makes clear that not all people within this contour will experience significant adverse effects from aircraft noise. Nor does it mean that no-one outside of this contour will consider themselves annoyed by aircraft noise.

¹⁵ Aviation Policy Framework, section 2.25, page 60, Department for Transport, March 2013.

¹⁶ Balanced approach to aircraft noise management, International Civil Air Organization.

<http://legacy.icao.int/env/noise.htm>

climate, particularly in the case of proposals for new airport capacity or changes to operational procedures. In these cases, the Government expects the CAA to consider new and innovative approaches to regulation and for the industry to innovate in noise management techniques such as the provision of respite for communities already significantly affected by aircraft noise (see Chapter 7.9 of this Guidance).

4. Specific navigational guidance

Altitude-based priorities

- 4.1** The usual maximum altitude for a Noise Preferential Route (NPR) is 4,000 feet (amsl) and this reflects the long standing view that noise from aircraft flying above this level is much less likely to affect the key noise metrics used for determining significant community impacts. As aircraft continue to climb from 4,000 feet (amsl) their noise impact reduces. Set against this, there is also a need to ensure that aircraft operations are efficient and that their emissions are minimised. So when considering airspace change requests, the CAA should keep in mind the following altitude-based priorities:
- a.** in the airspace from the ground to 4,000 feet (amsl) the Government's environmental priority is to minimise the noise impact of aircraft and the number of people on the ground significantly affected by it;
 - b.** where options for route design below 4,000 feet (amsl) are similar in terms of impact on densely populated areas the value of maintaining legacy arrangements should be taken into consideration;
 - c.** in the airspace from 4,000 feet (amsl) to 7,000 feet (amsl), the focus should continue to be minimising the impact of aviation noise on densely populated areas, but the CAA may also balance this requirement by taking into account the need for an efficient and expeditious flow of traffic that minimises emissions;
 - d.** in the airspace above 7,000 feet (amsl), the CAA should promote the most efficient use of airspace with a view to minimising aircraft emissions and mitigating the impact of noise is no longer a priority;
 - e.** where practicable, and without a significant detrimental impact on efficient aircraft operations or noise impact on populated areas, airspace routes below 7,000 feet (amsl) should, where possible, be avoided over Areas of Outstanding Natural Beauty (AONB) and National Parks as per Chapter 8.1 of this Guidance; and
 - f.** all changes below 7,000 feet (amsl) should take into account local circumstances in the development of airspace structures.
- 4.2** The concept of altitude-based priorities reflects the Government's desire that only significant environmental impacts should be taken into account when considering the overall environmental impact of airspace changes. Any environmental impacts that are not priorities based on the above altitude-based criteria do not need to be assessed since the assumption is that they would not be significant.

Departure procedures

- 4.3** Departure procedures should be designed to enable aircraft to operate efficiently and to minimise the number of people subject to noise nuisance on the ground, whilst taking into account the overriding need to maintain an acceptable level of safety.
- 4.4** 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 air traffic control (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 been set by the Secretary of State at Heathrow, Gatwick and Stansted, and by airport operators elsewhere (in some cases in compliance with planning conditions), and the CAA should be aware of these limits.

Continuous Climb Operations

- 4.5** 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 noise with more noise at the beginning of the flight and less noise further away from the airport as aircraft do not level off at low altitudes.¹⁷ Consequently, achieving CCO has 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.
- 4.6** CCO forms a significant component of the FAS and the Government is keen 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

- 4.7** Where airports are close to populated areas, landing noise is often seen as a more serious problem than departure noise. This is because of the much improved climb performance of modern jet aircraft and the dispersal of departures between several routes, in contrast to landing aircraft which must follow a straight final approach track at comparatively lower altitudes (for a given range from the airport).

¹⁷ 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, pg 21

- 4.8** A number of factors determine the level and distribution of noise from landing 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 landing aircraft.

Continuous Descent Operations

- 4.9** Continuous Descent Operations (CDO) relate to continuous descent from cruising altitude. In the UK, CDO is more commonly known as Continuous Descent Approach (CDA), which typically starts from an altitude of 6,000 feet (amsl) and is thus a subset of a CDO. 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 "low power/low drag" (LP/LD) operating procedures.
- 4.10** 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.¹⁸
- 4.11** 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) and having no more than one phase of level flight not longer than 2.5 nautical miles (nm) (which require increase engine thrust) of flight prior to intercepting the glide path. Being higher for longer and using less engine thrust means the noise impact on the ground is reduced (up to 5 decibels) in locations 10–25nm 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.
- 4.12** 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

- 4.13** Navigation has been identified as one of the five components of the overall airspace system as part of the FAS. At the moment the airspace route network in the UK is based on "conventional navigation" whereby required routes are aligned to ground based navigation aids. However, most aircraft in the UK have modern PBN technology that does not require ground based navigation aids, but there is no standardisation of

¹⁸ Noise From Arriving Aircraft: An Industry Code of Practice, 2006, second edition.

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 a plan to redesign UK airspace based on the use of PBN by 2020.

Performance Based Navigation (PBN)

- 4.14** 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.
- 4.15** The use of PBN will enhance navigational accuracy and introduce 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 which can generate less noise. Moreover, if used appropriately, PBN offers the flexibility to circumnavigate densely populated areas. When combined, these benefits will enable a significant improvement to be made to the overall efficiency and capacity of the UK airspace network which will allow the sustainable development of the air traffic network to accommodate future traffic levels.
- 4.16** 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.
- 4.17** Improvements in aircraft track-keeping can also offer the potential for aircraft to be concentrated within a particular part of the NPR if desired, as well as providing the potential for tracks to be alternated to introduce an element of respite for those under the tracks, see Chapter 7.9 to 7.12 of this Guidance. Concentration as a result of PBN is likely to minimise the number of people overflown, but is also likely to increase the noise impact for those directly beneath the track as they will be overflown with greater frequency than if the aircraft were more dispersed. Equally, alternation 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 in accordance with Chapter 9 of this Guidance.
- 4.18** The move to PBN will require 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. Redesign therefore covers a range of potential changes from relatively small adjustments to routes within the extent of the existing spread of air traffic and/or NPR swathe, to a major shift of the flight path. The appropriate approach to take will depend on the particular circumstances, including whether the airport is designated and if there is likely to be a significant detrimental impact on the environment.

- 4.19** For replication, the requirement is to preserve the existing route alignments as far as possible in the vicinity of airports. However, when a redesign of an airspace route is being considered, the environmental objective should be for the modified route to achieve the optimal package of benefits with respect to the altitude-based priorities presented in Chapter 4.1 of this Guidance.
- 4.20** In view of the importance which the Government attaches to delivering the benefits of PBN at the UK's busiest airports, Chapter 5.11 of this Guidance sets out special provisions for assisting the CAA to oversee its introduction at the designated airports. In addition, the CAA should continue to examine ways in which to take advantage of modern navigation technologies, especially those which have the potential to bring a net environmental benefit and to improve the efficiency of the overall airspace route network.

Helicopters

- 4.21** The CAA should recognise the unique noise characteristics of helicopters and their consequent environmental impact in terms of noise when a change to airspace is proposed under the CAA's Airspace Change Process. Where significant helicopter activity is involved, either where 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 change sponsors, where operationally practicable, to consider options that minimise the environmental impact of helicopter activity and take account of that impact when assessing proposals.
- 4.22** Where the CAA is aware that airport/aircraft operators are considering local changes to helicopter routeings and procedures that fall outwith the Airspace Change Process, the CAA should promote the use of voluntary noise abatement procedures to minimise noise disturbance and which take into account local circumstances.

Other relevant legislation, policy and guidance

- 4.23** 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 and air pollution.
- 4.24** In particular the CAA should be familiar with:

- a. the National Planning Policy Framework¹⁹ 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. Habitats Regulations 2010.

¹⁹ National Planning Policy Framework, Department for Communities and Local Government, March 2012.

5. Noise Preferential Routes (NPRs)

Origin and definition of an NPR

- 5.1** The concept of NPRs was first established at a number of major UK airports in the early 1960s, but over time the exact definition and purpose of an NPR has become less than clear. This Guidance therefore seeks to provide some clarity on what the Government considers is the purpose of an NPR and to establish a mechanism for adding new or amending existing NPRs at UK airports.
- 5.2** In the early 1960s, it began to be the custom to draw a line on the map to try and identify the preferred route for aircraft to fly in order to minimise their noise profile on the ground in the immediate vicinity of the airport, subject to operational requirements. The effect was to create routes, often coincident with SIDs, that up to a specified distance and altitude from the airport would form an NPR and this also had the effect of concentrating departures on a number of dedicated routes. The initial stages of a SID would often be described as an NPR and share the same characteristics.
- 5.3** It was recognised that not all aircraft would fly the SID nominal track perfectly, since changing weather patterns, the navigational accuracy of pilots, and different aircraft types inevitably meant that many aircraft were flying some distance away from the specific centreline of the NPR. To try and compensate for the variance between the NPR centreline and the actual flight paths being flown by aircraft, it became an accepted practice to add a geographic swathe of airspace either side of some of the NPR centrelines. This had the effect of creating a containment area within which departing aircraft should ideally remain when flying below a given altitude as well as aiding the monitoring of compliance with track keeping. This is a common practice today, although a number of NPRs continue to have no swathe attached to them.

The role of NPRs

- 5.4** Since the 1960s, it has been the view of successive Governments that the balance of social and environmental advantage lies in concentrating departing aircraft along the least possible number of departure routes, whilst remaining consistent with airspace management considerations and the overriding need to maintain an acceptable level of safety. The Government's Aviation Policy Framework also recognised the important role which NPRs play in giving effect to this policy and managing the impact of aircraft noise by providing clarity to those living in the vicinity of

airports on the likelihood of disturbance from departure noise. Existing NPRs should therefore continue to operate, but the Government also recognises that with the adoption of new performance based navigation techniques many of the existing NPRs at UK airports may need to change to reflect either long-standing current practice or to benefit from the use of the new systems. Any proposals to change NPRs will, of course, need to be consistent with the legislative framework and with this Guidance.

Ownership of NPRs

- 5.5** The ownership of NPRs in the UK in operation today falls into three distinct categories:
- a. NPRs at the designated airports.** For many years, the Government has used Section 78 of the Civil Aviation Act 1982 to establish NPRs at the 3 largest London airports - Heathrow, Gatwick and Stansted which have been designated in law for the purpose of noise regulation (the so called “noise designated airports”). At present, these NPRs can only be introduced or amended with the approval of the Secretary of State;
 - b. NPRs imposed by local authorities made under Section 106 of the Town and country Planning Act 1990.** Some local authorities have sought to mitigate the noise impact from aircraft on their communities by imposing special Section 106 orders on non-designated airports within their authority area. These orders set out the obligations imposed on the airport and establish a noise containment NPR which the airport needs to follow for its departing aircraft. These NPRs can only be approved or amended by the relevant local authority and the CAA; and
 - c. NPRs imposed voluntarily by non-designated airports as good practice.** Some airports as a matter of good practice, and with a view to mitigating their local environmental impact, have established NPRs for their airports. These NPRs could be introduced or amended if approval is given by the CAA.

Publication of NPRs

- 5.6** Routes conforming to the NPRs at the designated airports are published by the Department for Transport in the UK Aeronautical Information Publication (AIP). Although the likely amount of noise disturbance is best illustrated in a relevant noise footprint and/or contour published by airport operators in their annual reports/websites, maps depicting NPRs and their associated swathes provide a simple means of conveying where departing aircraft are expected to operate, or at least were expected to be at the time when the NPR was first drawn.
- 5.7** Routes conforming to the NPRs at all the non-designated airports are also published in the UK AIP. This activity is coordinated by the CAA, though the information is sponsored by the relevant airport.

Use of NPR swathes by airports

- 5.8** Since the concept of NPRs was first used, a considerable number of airports in the UK have established NPRs for the initial part of the SID's nominal track for aircraft departing from their airports. In many cases, a lateral swathe has been defined either side of the NPR centreline which is defined by a specified amount of airspace emanating from the end of the runway. These lateral swathes are usually drawn to cover the areas over which aircraft are expected to fly up to a specified altitude. This is often 4,000 feet (amsl), but it can be higher or lower depending on the individual circumstances, and in some instances, locally defined NPRs have a set length rather than a defined altitude. The width of the NPR lateral swathe can also vary but is often 3km, ie 1.5km either side of the NPR centreline, which is then usually considered to be the NPR nominal track. As navigational accuracy improves, for example with the introduction of PBN, the width of the lateral swathe is expected to narrow significantly in the future.
- 5.9** For established NPRs, the centreline may no longer reflect the published SID route loaded into an aircraft's flight management system and flown. This is because of a range of operational and efficiency factors, but ideally in future, and where practicable, the NPR centreline and the published SID's nominal track should be the same. This means that when SIDs are developed, redesigned or replicated, consideration must be given to realigning any associated NPRs so that they reflect appropriately the SID being implemented or amended.

General guidance on all NPRs

- 5.10** In dealing with airspace change proposals involving an NPR, the CAA must take into account the following considerations:
- a.** the directions given to the Civil Aviation Authority by the Secretary of State under Section 66(1) of the Transport Act 2000;
 - b.** the need to work collaboratively with airport operators to seek to ensure that NPRs and their swathes are used appropriately and that their dimensions are reasonable whilst ensuring that they reflect the departure flight paths of most aircraft;
 - c.** that non-designated airports are encouraged to make use of powers in Section 38A-C in the Civil Aviation Act 1982 to ensure greater compliance by airlines in mitigating the effect of noise connected with the departure of aircraft at their airports;
 - d.** that NPRs should, within operational constraints, be designed to minimise the noise impact for those living near the vicinity of the airport;
 - e.** that the width of NPR swathes and the length and maximum altitude of the NPR should be commensurate with ensuring a high degree of compliance by operators and reflect the performance characteristics of modern aircraft;
 - f.** that once established the NPR should be considered fixed unless removed/amended by a new airspace change request. As there can be

some movement of the promulgated route caused by magnetic drift,²⁰ this needs to be corrected since if uncorrected it could result in the location of the SID's nominal track becoming disassociated from the NPR, so altering who might be affected on the ground and thus not providing sufficient clarity for those living under or near the flight paths concerned;

- g.** that the CAA should encourage airports to adopt, as much as can be commensurate with operational efficiency and practicality, consistent operating procedures for NPRs;
- h.** that any proposal to change an existing NPR, or to introduce a new one, will be considered an airspace change and require appropriate consultation with the relevant airport, airspace users, and local authorities and communities in the vicinity of the airport. The consultation should also be in accordance with the Civil Aviation Authority (Air Navigation) Directions and with Chapter 9 of this Guidance;
- i.** when an airspace change involving an NPR is made, the change to a SID's nominal track is likely to require the NPR to also be moved to ensure that it is at least consistent and preferably coincident with the revised SID, providing that it is practicable and safe to achieve this;
- j.** when an airspace change is being planned which would involve alterations to an NPR, the possibility of introducing respite should also be considered where operationally feasible and the view of local communities taken into account (see also Chapter 9 of this Guidance);
- k.** the monitoring by airport operators of the use of NPRs by their customers and their noise impact is to be encouraged;
- l.** the precise location of the NPRs should be reviewed immediately if safety concerns regarding the use of the NPR are raised; and
- m.** any changes to NPRs must be published in the AIP as part of the airspace change process.

Specific guidance on both the replication and redesign of conventional SIDs at the designated airports

5.11 The designated airports have a large number of NPRs which have been established over many years. It is recognised that: most of the SIDs associated with these NPRs use conventional navigational techniques; a number of SID nominal tracks are no longer centred on the NPR; and the introduction of PBN is likely to require a significant number of the existing routes to be updated to reflect the use of the new PBN procedures. As many of the required amendments to the SIDs to make them PBN compliant will reflect the flight paths flown by aircraft already and to

²⁰ A navigational compass points to magnetic north but this is not a fixed geographic point. As the position of magnetic north drifts, there is a need to make the necessary consequential adjustments to ensure navigational accuracy. As satellite-based navigation does not rely on magnetic north, this problem will be less of an issue in the future.

ensure a smooth process exists for handling the necessary airspace change applications, the CAA can approve both the replication and redesign of existing conventional SIDs using PBN at the designated airports providing that:

- a. the new PBN-based SID is considered by the CAA to be an acceptable replication or redesign of the existing conventional SID and it does not create a net significant detrimental noise impact;
 - b. the opportunity afforded by the airspace change involving a replicated or redesigned SID should be used to evaluate the extent to which the NPR needs to be realigned to the new PBN-based SID to comply with Chapter 5.10 of this Guidance;
 - c. the Department is informed of the application and the decision reached by the CAA;
 - d. the airspace change sponsor should carry out appropriate consultation and assessment of the airspace change involving the PBN-based SID and NPR to the satisfaction of the CAA; and
 - e. it is the responsibility of the CAA to ensure that the details of any newly approved NPR and SID are published in the appropriate AIP.
- 5.12** For any proposed PBN-based airspace change at the designated airports which does not meet the criteria set out in Chapter 5.11 of this Guidance, the airspace change would require the approval of the Secretary of State (see Chapter 6 of this Guidance).

New NPRs at airports

- 5.13** For completely new NPRs at any airport, the expectation is that the NPR would be designed to reflect the SID's nominal track. The CAA can approve the location, length, altitude, and width of any proposed new or amended NPRs at the non-designated airports subject to the expectation that there will be no significant detrimental impact on the environment (see Chapter 6.6 to 6.9 of this Guidance).

Approval for new or amendments to existing NPRs at the designated airports

- 5.14** The Secretary of State will still be required to decide upon completely new NPRs or amendments to existing NPRs which are considered to have a significant detrimental impact on the environment at the designated airports. The process for seeking this approval is set out in Chapter 6.3 of this Guidance.

6. Role of the Secretary of State on proposals to amend UK airspace arrangements

- 6.1** There are two specific circumstances when approval must be sought from the Secretary of State for an airspace change. These are for an airspace change involving the need for a new NPR at a designated airport or when a replication or redesign is likely to have a net significant detrimental impact on the environment.

Specific guidance on the NPRs at the noise designated airports

- 6.2** The NPRs at the designated airports are decided by the Secretary of State 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 Secretary of State.
- 6.3** Notwithstanding the need for the overall approval by the Secretary of State, Chapter 5.11 of this Guidance on the SIDs and NPRs at the designated airports enables the CAA to decide upon alterations to SIDs associated with NPRs when considering airspace change applications designed to introduce PBN-based routes which seek to redesign or replicate existing SIDs. However, for any airspace change proposal at a designated airport which the CAA considers to fall outside of the scope of the conditions set out in Chapter 5.11, the CAA will:
- a.** inform the Department for Transport that it has received such an application or other form of notification;
 - b.** inform the applicant that it believes that the decision on the airspace change proposal rests with the Secretary of State and not the CAA;
 - c.** ensure that the applicant follows the CAA's airspace change process and undertakes the appropriate consultation as set out in the Civil Aviation Authority (Air Navigation) Directions, in Chapter 9 of this Guidance, and in accordance with the CAA's consultation requirements; and
 - d.** at the end of the assessment process recommend to the Secretary of State whether it considers the application should be approved or not. This recommendation must include an appropriate noise impact statement setting out clearly the expected number of people who may benefit or be affected by the airspace change, as well as providing

detailed information on the purpose of the application and the reasons underpinning the CAA's recommendation.

- 6.4** The Secretary of State will consider each recommendation by the CAA on its merits, and will provide a response to the CAA within 28 working days. This response could be to accept the CAA's recommendation, ask for further information or a fresh consultation to be undertaken, or to reject the proposed airspace change.
- 6.5** The CAA will be responsible for informing the airspace change applicant of the outcome of its application, and the Department for Transport will ensure that any changes to the NPRs at the designated airports will be promulgated in the AIP in a timescale to be agreed with CAA.

Specific guidance on proposed airspace changes which may have a significant detrimental impact on the environment

- 6.6** The Secretary of State has given directions (See Annex B of this Guidance) to the Civil Aviation Authority under Section 66(1) of the Transport Act 2000 setting out the circumstances when the CAA must also seek the approval of the Secretary of State for airspace changes which might have a significant effect on the level or distribution of noise and emissions. For example, this might be a proposal for an airspace change introducing a new route below 7,000 feet (amsl).
- 6.7** The CAA will:
- a.** inform the Department for Transport that it has received an application which is likely to have a significantly detrimental impact on the environment;
 - b.** inform the applicant that as the airspace change proposal is likely to have a significantly detrimental impact on the environment the final decision rests with the Secretary of State and not the CAA;
 - c.** ensure that the applicant follows the CAA's airspace change process and undertakes the appropriate consultation as set out in the Civil Aviation Authority (Air Navigation) Directions, in Chapter 9 of this Guidance, and in accordance with the CAA's consultation requirements; and
 - d.** at the end of the assessment process recommend to the Secretary of State whether it considers the application should be approved or not. This recommendation must include an appropriate noise impact statement setting out clearly the expected number of people who may benefit or be affected by the airspace change, as well as providing detailed information on the purpose of the application and the reasons underpinning the CAA's recommendation.
- 6.8** The Secretary of State will consider each recommendation by the CAA on its merits, and will provide a response to the CAA within 28 working days. This response could be to accept the CAA's recommendation, ask for further information or a fresh consultation to be undertaken, or to reject the proposed airspace change.

- 6.9** The CAA will be responsible for informing the airspace change applicant of the outcome of its application, and will also ensure that any approved airspace changes will be promulgated in the AIP.

7. Concentration versus dispersal

General background on concentration v dispersal

- 7.1** Air traffic management considerations such as the requirement to maintain safe separation between departures, the need to minimise conflicts with inbound aircraft and the desire to make efficient use of runway capacity, inevitably give rise to a concentration of departures along a limited number of fixed routes. Standardising procedures also helps to reduce air traffic controller workload, which contributes to the safe and efficient use of available capacity. When combined with practical issues arising from the position of navigational aids, these considerations unavoidably give rise to a concentration of departing traffic along a relatively small number of routes.
- 7.2** It makes sense therefore that in order to mitigate the overall noise impact these routes should avoid densely populated areas as far as possible given operational constraints. Consequently, when examining the question of concentration versus dispersal from both an ethical and practical perspective, the Government's policy has for many years been that the best environmental outcome was derived from the concentration of departures on the least number of practical routes designed specifically to minimise the number of people over-flown at low levels.
- 7.3** The issue of concentration versus dispersal was also considered in the context of the Aviation Policy Framework.²¹ The outcome was the acceptance that, in general, the balance of social and environmental advantage lies in concentrating aircraft taking off from airports along the fewest possible number of specified routes and that these routes should avoid densely populated areas as far as possible. The framework also stresses that any changes to departure routes should avoid significantly increasing the number of people affected by aircraft noise.

Specific guidance on concentration v dispersal

- 7.4** Airspace change proposals relating to the initial stages of departure routes should be considered in the context of the altitude-based priorities presented in Chapter 4.1 of this Guidance.
- 7.5** The Government supports the adoption of PBN as endorsed by FAS (see Chapter 4.13). PBN will mean that aircraft following a particular route will adhere to that route more consistently than they do the historic conventional routes. This will increase the concentration of traffic and impact over the areas directly beneath the published NPR, but will reduce the overall extent of the areas overflown, thereby offering the

²¹ Aviation Policy Framework, sections 3.31 and 3.32, pages 61 and 62, Department for Transport, March 2013.

potential to reduce the number of people exposed to noise from aircraft flying below 7,000ft (amsl).

- 7.6** The policy on concentration versus dispersal has general application i.e. it is not confined to the designated airports. In the case of Heathrow, Gatwick and Stansted this policy is given effect by the Secretary of State's requirement for most departing aircraft to follow the NPRs which form the initial part of the SIDs. Many other airports also require pilots to adhere to NPRs or similar procedures designed to reduce disturbance in the vicinity of the airport.
- 7.7** The policy on concentration versus dispersal is focussed on departures because arrivals are generally already concentrated on the extended runway centreline by the time they reach lower levels. Notwithstanding this, where applicable, and in line with the altitude-based priorities presented in Chapter 4.1 of this Guidance, the above policy of concentration versus dispersal applies equally to arrivals.
- 7.8** While the CAA should follow a policy of concentration in most cases, the Government recognises that there may be local circumstances where the advantage lies in dispersing traffic, such as for the purposes of providing noise respite over areas which may be considered to be particularly noise sensitive. It is important that any decisions about whether to concentrate or disperse traffic take account of the local context alongside the operation and generic environmental objectives presented in this Guidance. This local context may become apparent through appropriate consultation with the local community (see Chapter 9 of this Guidance).

Respite

- 7.9** The Aviation Policy Framework also reaffirmed the Government's view that it is important to consider exploring options for respite wherever feasible for those already affected by noise, especially where frequency of movements has increased over time.²² The Government therefore encourages airports and airlines to work with the CAA, NATS and their local communities to consider creative solutions to protect and enhance the use of respite as a means of mitigating the impact of aircraft noise.
- 7.10** One such example is with the shift to PBN which is expected to be introduced widely in the UK over the coming years. The Government would therefore like to encourage airports, along with NATS and the CAA, to consider how PBN could be used to introduce an element of alternation, for example for a day or a week, which could result in some noise benefits for parts of the local community.
- 7.11** Other opportunities for arrivals such as varying joining points and reducing the amount of airborne holding are also encouraged as are trials which seek to understand the benefits and impacts of respite measures on local communities.
- 7.12** When seeking opportunities to provide respite for those already affected by aircraft noise it is important that decisions about respite should

²² Aviation Policy Framework, section 3.32, page 62, Department for Transport, March 2013.

always be made after considering the specific local circumstances and through engagement with the local community. Moreover, the introduction of respite should be consistent with the objective in the Aviation Policy Framework of limiting the number of people affected by aircraft noise, whilst providing an opportunity for some communities to benefit from relief of aircraft noise for an agreed time.

8. Other relevant environmental issues

National Parks and Areas of Outstanding Natural Beauty (AONB)

- 8.1** National Parks and AONB are designated areas with specific statutory purposes to ensure their continued protection in relation to landscape and scenic beauty.²³ The statutory purposes of National Parks are 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 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 under s.19 and Schedule 2 of the Civil Aviation Act 1982.²⁴
- 8.2** Flights over National Parks and AONB are not prohibited by legislation as a general prohibition against over-flights would be impractical. Government policy will continue to focus on minimising the over-flight of more densely populated areas below 7,000 feet (amsl), but balanced with emissions between 4,000 and 7,000 feet (amsl), as set out in the altitude-based priorities in Chapter 4.1 of this Guidance. However, where it is practical to avoid over-flight of National Parks and AONB below 7,000 feet (amsl), the CAA should encourage this.
- 8.3** In line with the altitude-based priorities, the noise impact of flights above 7,000 feet (amsl) is unlikely to be significant and so no consultation is required on their noise impact at above this level.

Tranquillity

- 8.4** Tranquillity is a subjective concept usually linked to engagement with the natural environment. In 2007, the CPRE compiled a list of what the concept of tranquillity means to people and created a national tranquillity map for England.²⁵ There is growing pressure to protect and preserve tranquil areas and the Government has recognised that a sense of tranquillity contributes to people's enjoyment of the natural

²³ 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.

²⁴ 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, <http://archive.defra.gov.uk/rural/documents/protected/npaonb-duties-guide.pdf>

²⁵ <http://www.cpre.org.uk/what-we-do/countryside/tranquil-places/in-depth/item/1688-how-we-mapped-tranquillity>

environment.²⁶ Therefore, whenever practicable and in line with the priorities presented in Chapter 4.1 of this Guidance, the CAA should also take into account the concept of tranquillity when making decisions regarding airspace below 7,000 feet (amsl).

²⁶ The natural choice: securing the value of nature,
<http://www.defra.gov.uk/environment/natural/whitepaper/>

9. Changes to airspace arrangements

Permanent airspace changes

- 9.1** Where changes, other than temporary arrangements or short-duration trials, are proposed to the design or use of controlled airspace, the CAA should ensure that adequate consultation is carried out in accordance with the Directions given under Section 66(1) of the 2000 Act, either by ensuring that the promoter of the change(s) undertakes the consultation, or by undertaking the consultation itself. In exceptional cases involving one or more of the designated airports, the Department for Transport may wish to be involved in the consultation or might even take the lead, and the CAA should check with the Department at an early stage to ascertain whether this is likely to be the case.
- 9.2** The CAA shall ensure that an adequate level of consultation is undertaken for any given airspace change. The level of consultation required should take account of the scale and impact of the change, and the range of potential stakeholders involved as well as their ability to contribute either directly or through a representative body. The minimum requirements set by the CAA should meet the standards set out in the Cabinet Office Guidance on Consultation. The method, form and extent of the consultation will vary depending on the circumstances and expected impacts of each case taking account of the altitude-based priorities presented in Chapter 4.1 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 no consultation with environmental stakeholders. In all cases, however, the CAA should determine the appropriate level of consultation required for a given change. The expectation is that where there is potential for significant detrimental impact, for example a proposal to move a low-level route and its associated impacts to a different geographical location, the consultation process should, for example, include:
- a.** The manager of the relevant aerodrome and its principle users (where the changes relate to a particular aerodrome);
 - b.** other principal users of the airspace (which may be done through representative bodies);

- c. local authorities²⁷ in the neighbourhood of the aerodrome or directly underneath flight paths up to 7,000 feet (amsl) to which the proposed airspace change relates (changes above 7,000 feet (amsl) have no significant local impact and therefore local consultation is not usually going to be necessary);
- d. other organisations and individuals (if any) who may represent the interests of people living in the immediate vicinity of the aerodrome or directly underneath flight paths up to 7,000 feet (amsl) to which the proposed airspace change relates;
- e. any national or local environmental bodies that are considered to have a specific interest in the impacts of the proposed airspace change; and
- f. the relevant airport consultative committee where one exists.

9.3 Consultation with environmental stakeholders will usually only be necessary where the proposed changes concern controlled airspace at or below an altitude of 7,000 feet (amsl) or could have significant knock-on effects on how traffic uses adjoining uncontrolled airspace at or 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 consultation may not be necessary in such cases.

9.4 If the need for a consultation is deemed appropriate the CAA should ensure that the airspace change consultation is robust and sufficient in order to enable it to make an independent assessment of the proposal.

9.5 Where the proposed changes may have a significant detrimental effect on the level and distribution of noise in the vicinity of an aerodrome, or would be expected to significantly alter the size or shape of the standard daytime noise contours in use at the aerodrome, or the shape of noise footprints of the noisiest aircraft operating there at night, the consultation should include assessments of those effects based on both the traffic levels expected at the time of implementation and forecast traffic levels for future periods where these are considered appropriate.

Temporary airspace changes

9.6 A temporary airspace change is one that may, at the CAA's discretion, introduce new controlled airspace or modifications to existing structures or routes in order to provide temporary arrangements to cover specific events or operating conditions.

9.7 The airspace change 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 may be extended but only with the express authorisation of the CAA. The

²⁷ For these purposes, county, district or borough and unitary authorities only need be consulted. If parish or town councils wish to respond directly, rather than through one of the aforementioned, they should be allowed to do so, but they should be consulted if they have made their interest known.

relevant consultation arrangements are set out in Chapters 9.10 and 9.11 of this Guidance.

Approved operational airspace trials

- 9.8** In addition to formal temporary airspace changes, there are operational trials which need the approval of the CAA. These trials are designed to validate proposals for new routes, the use of new technologies or operating procedures, as well as to develop the evidence base of their impact on the environment. As a consequence, they make a valuable contribution to the efficiency and effectiveness of the UK airspace network, and they will also form a key component of the successful implementation of the Future Airspace Strategy and the Single European Sky.
- 9.9** The Government therefore considers that operational trials should be encouraged by the CAA. In all cases, the trials should be approved by the CAA and have a confirmed start and end date, although the CAA may extend the period of the trial if it considers this appropriate. The relevant consultation arrangements are set out in Chapters 9.10 and 9.11 of this Guidance.

Consultation arrangements for temporary airspace arrangements and operational airspace trials

- 9.10** Due to the short term nature of temporary airspace changes and airspace trials, it will usually not be necessary or appropriate for the airspace change sponsor to consult on their proposals or to undertake the airspace change approval process. However, the likely impact of the proposed change on the environment should be considered by the sponsor prior to implementation and this information used to help the CAA to determine whether a proportionate consultation is required.
- 9.11** If a permanent or long-term arrangement for the temporary or operational trial airspace was to subsequently become necessary, the full airspace change process will need to be completed by the airspace change sponsor. 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 temporary airspace change whilst steps are being taken to make it permanent. In such instances, the CAA may consider extending temporary arrangements whilst the airspace change process is being undertaken. Any extension to the temporary airspace arrangement or operational trial should be closely monitored by the CAA, and action taken to swiftly revert the airspace concerned to its original state if the airspace change process requirements cannot be met.

10. Revision of Guidance and enquiries

Revision/amendment of Guidance

- 10.1** This Guidance will be reviewed by the Department on a regular basis and may be amended or replaced as deemed necessary by the Secretary of State. Minor amendments may not need to be consulted on but any substantial changes to this document could be consulted on in line with the Government policy on consultations at the time the change was proposed.

Enquiries about this Guidance

- 10.2** 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: Section 70(2) Transport Act 2000

Section 70(2) of The Transport Act 2000 sets out the following legislative framework for the CAA:

70 General duty

(1) The CAA must exercise its air navigation functions so as to maintain a high standard of safety in the provision of air traffic services; and that duty is to have priority over the application of subsections (2) and (3).

(2) The CAA must exercise its air navigation functions in the manner it thinks best calculated -

(a) to secure the most efficient use of airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic;

(b) to satisfy the requirements of operators and owners of all classes of aircraft;

(c) to take account of the interests of any person (other than an operator or owner of an aircraft) in relation to the use of any particular airspace or the use of airspace generally;

(d) to take account of any guidance on environmental objectives given to the CAA by the Secretary of State after the coming into force of this section;

(e) to facilitate the integrated operation of air traffic services provided by or on behalf of the armed forces of the Crown and other air traffic services;

(f) to take account of the interests of national security;

(g) to take account of any international obligations of the United Kingdom notified to the CAA by the Secretary of State (whatever the time or purpose of the notification).

(3) If in a particular case there is a conflict in the application of the provisions of subsection (2), in relation to that case the CAA must apply them in the manner it thinks is reasonable having regard to them as a whole.

(4) The CAA must exercise its air navigation functions so as to impose on providers of air traffic services the minimum restrictions which are consistent with the exercise of those functions.

(5) Section 4 of the Civil Aviation Act 1982 (CAA's general objectives) does not apply in relation to the performance by the CAA of its air navigation functions.

Annex B: The Civil Aviation Authority (Air Navigation) Directions

In addition to Section 70(2) of the Transport Act, the Secretary of State has also exercised his powers under Sections 66(1) and 104(2) of the Transport Act 2000 in the Civil Aviation Authority (Air Navigation) Directions 2001, as amended by the Civil Aviation Authority(Air Navigation) (Variation) Direction 2004. The relevant parts of the Directions are sections 8 to 12:

Environmental impact of air operations

8. Subject to section 70 of the Act the CAA shall perform its air navigation functions in the manner it thinks best calculated to take into account:
 - a. the guidance given by the Secretary of State on the Government's policies both on sustainable development and on reducing, controlling and mitigating the impacts of civil aviation on the environment, and the planning policy guidance it has given to local planning authorities;
 - b. the need to reduce, control and mitigate as far as possible the environmental impacts of civil aircraft operations, and in particular the annoyance and disturbance caused to the general public arising from aircraft noise and vibration, and emissions from aircraft engines;
 - c. at the local, national and international levels, the need for environmental impacts to be considered from the earliest possible stages of planning and designing, and revising, airspace procedures and arrangements; and
 - d. the requirements of directions given under section 39 of the Act to licence holders, an authorised person or authorised persons generally.
9. Where changes to the design or to the provision of airspace arrangements, or to the use made of them, are proposed, including changes to air traffic control procedures, or to the provision of navigational aids or the use made of them in air navigation, the CAA shall:
 - a. where such changes might have a significantly detrimental effect on the environment, advise the Secretary of State for Transport of the likely impact and of plans to keep that impact to a minimum;

- b. where such changes might have a significant effect on the level or distribution of noise and emissions in the vicinity of a civil aerodrome, ensure that the manager of the aerodrome, users of it, any local authority in the neighbourhood of the aerodrome and any other organisation representing the interests of persons in the locality, have been consulted (which might be undertaken through the consultative committee for the aerodrome where one exists);
 - c. where such changes might have a significant effect on the level or distribution of noise and emissions under the arrival tracks and departure routes followed by aircraft using a civil aerodrome but not in its immediate vicinity, or under a holding area set aside for aircraft waiting to land at a civil aerodrome, ensure that the manager of the aerodrome and each local authority in the areas likely to be significantly affected by the proposed changes, have been consulted; and where such changes might have one or more of the effects specified in paragraphs 2 (a), (b) and (c) of this Direction, the Civil Aviation Authority shall refrain from promulgating the change without first securing the approval of the Secretary of State.
10. The CAA shall advise the Secretary of State on the airspace aspects of any proposal to establish new, modify existing, or reactivate disused, civil or military aerodromes, including their associated traffic patterns.
 11. In relation to its air navigation duties, the CAA shall maintain its capability to provide expert technical advice to the Secretary of State on environmental matters.
 12. The CAA shall provide a focal point for receiving and responding to aircraft related environmental complaints from the general public.