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Department for Transport

UK Airspace Policy: A framework for balanced decisions on the design and use of airspace

Moving Britain Ahead

UK Airspace Policy: A framework for balanced decisions on the design and use of airspace

February 2017

February 2017

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UK Airspace Policy: A framework for balanced decisions on the design and use of airspace

Presented to Parliament
by the Secretary of State for Transport
by Command of Her Majesty

February 2017

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Ministerial Foreword

Aviation matters – it connects us with the world, enabling us to travel to visit our friends and family, to do business and go on holiday. The UK's aviation sector is a global success story, supporting and creating jobs, driving social mobility and contributing to the country's economy and progress.

Achieving this success can only be done if we continue to balance the benefits of a thriving aviation sector with its impacts on local communities and the environment. In other words, growth must be sustainable.

Sustainable growth is important because, like the rest of our transport network, demand is increasing and capacity is filling up. Across our rail, road and other networks we are supporting the increased demand through record levels of investment and using new technologies to make journeys easier, faster and more reliable.

Aviation is no different. We have already taken steps to increase capacity on the ground by supporting a new runway at Heathrow, and we have seen significant investment in the way airspace is managed. However, the sky is increasingly congested and we need to think again about how we best manage our airspace.

It is my belief that airspace modernisation is overdue. By taking steps now to future-proof this vital infrastructure, we can harness the latest technology to make airspace more efficient, reducing the need for stacking, making journeys faster and more environmentally friendly. This will demonstrate the UK's position at the forefront of global aviation and send a clear signal that Britain is open for business.

At a local level, the changes we are proposing here also offer the chance to address some of the least acceptable impacts of aviation on those living near our airports – in particular the effects of noise.

Modern technology is making aircraft quieter. Newer generation aircraft coming into service have a noise footprint typically 50% smaller on departure than the ones they are replacing, and at least 30% smaller on arrival.

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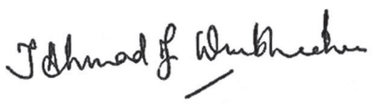
However, there is more we can do. Our recent research has given us a greater understanding of the effects of noise on local areas and I've also met with representatives of communities impacted. That is why our proposals to improve how these communities can engage, and make sure that their voices are heard, are so important.

It is my intention to establish an Independent Commission on Civil Aviation Noise. I believe that such a Commission will be able to build relationships between the industry and communities, improve communication, embed a culture of best practice, and also ensure a fair process for making changes to airspace.

The Secretary of State's new call-in function for airspace changes, similar to that used by the Secretary of State at the Department for Communities and Local Government for planning applications, will create the democratic back-stop in the most significant decisions, much called for by communities.

It is my view that these proposals aim to strike a balance between unlocking the economic and social benefits of modernised airspace, and addressing the local impacts of aviation. I am confident these objectives are achievable, and that these changes will secure the UK's position as a world leader in aviation.



Lord Ahmad of Wimbledon
Parliamentary Under Secretary of State for Transport (Minister for Aviation)

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1. Introduction

1.1 The Aviation industry is a positive force for the UK's economy. It is a major contributor to the economy, brings people together and shows the world Britain is open for business. Indeed, Britain's aviation sector is a global success story, supporting thousands of jobs and delivering billions of pounds in economic benefits.

1.2 As this sector grows, and we seek to improve regional, national and international connectivity, we need to do so with due consideration of the impact of this growth on local communities. This requires that all those involved with the sector work collectively in improving communication, assessing and adapting to the need to address environmental challenges, whilst ensuring the concerns of local communities are addressed.

1.3 Aviation creates jobs and supports economic growth. It directly supports around 230,000 jobs with many more employed indirectly and contributes around £20bn annually to UK economy[1]. It supports the movement of goods, workers and tourists, and drives business innovation and investment. In 2015, UK airports handled around £155bn of air freight to and from countries outside the EU[2], and aviation supported an inbound tourism industry across the UK worth nearly £19bn[3].

1.4 The UK will benefit if aviation is able to grow sustainably. And the sector has already taken significant steps to address some of the least acceptable impacts of flying. For example, last year saw a ground-breaking international agreement to tackle carbon emissions from aviation. Advances in technology are making planes quieter, helping reduce the number of people affected by high levels of noise near our airports.

1.5 As demand increases, capacity is at a premium – both at our airports and in the sky. The way our airspace is managed based on arrangements which are almost 50 years old. This means it can be both inefficient and ineffective, leading to unnecessary delays for passengers and excessive impacts on the environment and those living near our airports. Change is needed in the sector to enable the UK to keep pace with the rest of the world in exploiting the newest technology and meeting demand.

1 Annual Business Survey, 2014 and ONS, Input-output tables, 2014. Of the 230,000 jobs, 120,000 were in air transport and 110,000 related to aerospace.

2 HMRC Trade Statistics, 2016

3 Estimates of the Economic Importance of Tourism 2008-2013, Office for National Statistics, December 2014.

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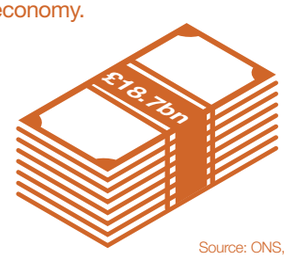
The Government's primary objective is to achieve long-term economic growth. The aviation sector is a major contributor to the economy.

Aviation contributed **£20 billion** of economic output in 2013, Air Transport Sector contributed **£11 billion** and the Aerospace Sector **£9 billion**.



In 2015, nearly three quarters of foreign visitors to the UK arrived by air. These visitors spent **£18.7 billion** or **85%** of the total expenditure by foreign visitors in 2015.

Source: ONS, Overseas Residents Visits to the UK

The Aviation Sector had an annual turnover of **£61 billion** in 2014, Air Transport Sector contributed **£33 billion** and the Aerospace Sector **£28 billion**.

The UK is an outward-looking nation: an island economy that for centuries has owed its prosperity to the transport and trade routes linking it with the rest of the world. The future of the UK will continue to be shaped by the effectiveness of its international transport networks.

The UK is very well connected, with direct weekly services to **over 370 international airports** and direct daily services to **200 international airports in 2015** (Weekly/daily service: at least 52/361 passenger flight departures a year.)

Aviation brings many wider benefits to society and individuals, including travel for leisure and visiting family and friends.

Passenger numbers at UK airports increased by **5.5%** in 2015,

reaching a record level of 251 million terminal passengers.

About **a third of passengers are visiting friends or family** and around a **fifth are travelling for business.**

Aviation benefits the UK economy through its direct contribution to gross domestic product (GDP) and employment, and by facilitating trade and investment, manufacturing supply chains, skills development and tourism.

Although aviation accounts for **less than 1%** of international freight at UK ports by tonnage, air freight tends to be high value, accounting for **over 40% of extra EU freight by value.**

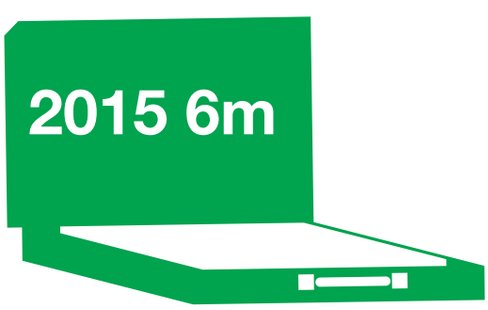
The aviation sector employed around **230,000** people in 2014, of which around

people are employed directly by the air transport sector and

by the aerospace sector.

In 2015, around 6 million visits from overseas residents to the UK were for business trips.

UK airports are well connected to business destinations worldwide.



- Over 20 UK airports have daily flights to **Amsterdam**
- **Frankfurt** and **New York** are served daily by 7 and 4 UK airports respectively
- Many others including **Hong Kong**, **U.A.E** and **Zurich** are connected with daily services from at least one UK airport

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1.6 The Government welcomes the recent levels of investment in our airspace which have delivered real improvements, but advances in technology mean we can do even better. Modernising our airspace is about exploiting the latest technology to unlock the national social and economic benefits which a thriving aviation sector offers.

1.7 Encouraging growth in our aviation sector is good for our country and our standing in the world, but we must provide the right policy framework to ensure this success can be realised in a sustainable way.

1.8 That is why the Government is reviewing our range of aviation policies, and we plan to update our overarching strategy for the sector over the coming months. This will ensure we are in the best position to respond to future challenges, and make the most of a range of opportunities, including building a new runway at Heathrow and building on the recent ground-breaking International Civil Aviation Organisation agreements on carbon emissions for aviation.

1.9 How we handle airspace is a vital part of this strategy: balancing growth in its use with effective management of the local impacts around our airports – in particular noise.

1.10 If no action is taken to modernise our airspace, passenger delays are forecast to increase sharply as traffic levels increase. Analysis commissioned by the Department for Transport (DfT) and carried out by NATS (the UK's main provider of air traffic control services) predicts total short notice cancellations to increase to 8,000 per year and delays from air traffic management to rise to 4.4 million minutes by 2030, equivalent to 3,100 days of delays. This is 50 times the delays seen in 2015, leading to increased noise on the ground, and increased carbon emissions per flight through wasted fuel[4].

1.11 Taking action now can bring real improvements:

- For passengers – reduced delays;
- For the environment – reduced emissions; and
- For local communities most affected by aircraft noise – reduced need for stacking and quicker climbing aircraft.

1.12 But decisions which change flightpaths are not easy and we acknowledge that the policy framework needs improvement so that communities can have confidence that the impacts of aviation are being properly taken into account when airspace use is changed, and in the way noise is managed in day-to-day operations.

1.13 The Government's role is to set the policy framework which governs those decisions. Our proposals will not determine specific airspace arrangements. **They will ensure that these important decisions are made in the right way. This will be underpinned by the need to provide balance and transparency throughout the process, ensuring that there is consistency in how industry acts as the best neighbour, putting in place the best solutions to manage its impacts.** We have listened to communities which have experienced the effects of changes, and our proposals are designed to reflect the lessons learnt and to respond to their concerns.

4 See 'Upgrading UK Airspace: Strategic Rationale' p.59

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1.14 We are therefore bringing forward proposals designed to balance the interests of all involved and build trust in how noise is handled. Our proposals will bring a number of benefits:

- Greater clarity and transparency in decision making and the way noise is managed;
- Improvements in the evidence used to inform how airspace decisions are made, particularly the noise impacts;
- Greater focus on industry and communities working together to find ways to manage noise which work best for local circumstances;
- Clarity and consistency in who makes airspace decisions, and why;
- Greater certainty for industry that the airspace change framework provides what they need to deliver beneficial change; and
- Ambitious noise management outside of airspace change, taking advantage of the latest technological developments.

1.15 We build on the best practice which is already being demonstrated at many airports across the UK, and the changes to the airspace change process which the Civil Aviation Authority (CAA) is making. Recognising that a 'one size fits all' approach is unsuitable, our proposals focus on decisions being informed by the needs of each area, using robust local evidence from those who know the situation best. The new approach will be coupled with measures to improve transparency and challenge industry to drive standards up and engage effectively.

1.16 The effect of the changes proposed will be that decisions can be made which better support the effective management of airspace and the noise impacts which its use can create. Everyone will have their part to play in making reforms to how airspace is managed a success, including airports, airlines, air navigation service providers, local authorities, community representatives and the CAA. Our proposals create clear and appropriate roles, and a system which can support the UK in maximising the benefits of aviation.

Aims of the Consultation

1.17 With this consultation, the Government wishes to support airspace modernisation in order to deliver benefits for the UK economy, for passengers and for communities affected by aircraft noise. We wish to see the use of technology and environmental controls keep pace with leading practice and to incentivise ambitious and innovative approaches for managing noise in the aviation sector.

1.18 To do that, we recognise the need to be able to properly balance our economic and environmental needs in the important decisions which must be taken. This is at the heart of our proposals, which aim to create a modern and effective framework for decisions on the design and use of airspace.

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1.19 We are therefore seeking your views on a range of proposals, including:

- Establishing an Independent Commission on Civil Aviation Noise to make sure noise impacts are properly and transparently considered;
- Providing industry with ways to assess noise impacts and choose between route options to help them manage change more effectively;
- Bringing compensation policy for airspace changes in line with policy on changes to aviation infrastructure; and
- Offering greater flexibility to three of London's major airports, so that they can adapt their noise management to the needs of their local communities, as other airports across the UK already can.

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2. Information on the Consultation

Current Policy Framework

2.1 The current legal and policy framework for airspace and aviation noise is a complex and comprehensive suite of information and documents, ranging from the top-down policy setting approach from the International Civil Aviation Organization, to the national policy and legal frameworks that reflect the UK Government's vision for the aviation industry.

2.2 We refer to elements of the policy framework throughout the consultation document. At Annex A, you will find a summary of the key documents and frameworks that the aviation sector operates within. A glossary of terms can also be found at Annex C.

Fit with wider Aviation Policy

2.3 The Government's current aviation policy is set out in the Aviation Policy Framework (APF). The APF sets out the sector's objectives and policies and its role in driving growth, creating jobs and facilitating trade, while addressing a range of environmental impacts.

2.4 The Government is working on a new Aviation Strategy that will set out the Government's vision for the wider aviation sector. This will replace the 2013 APF and will be subject to a separate consultation process.

2.5 This consultation on UK Airspace Policy forms a key pillar in the development of the Aviation Strategy.

2.6 The policies proposed within the airspace consultation will influence what happens at airports across the country, but they do not determine specific airspace arrangements: the Government will not decide on a particular flight path or procedure for a particular airport. Instead, the Government will decide on the policy principles which will govern those decisions.

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Consultation on the draft Airports National Policy Statement

2.7 In parallel to this consultation on UK Airspace Policy, the Government has published its consultation on a draft Airports National Policy Statement. This sets out the proposed framework against which a planning application for a Northwest runway at Heathrow Airport can be brought. The consultation outlines the Government's policy on the need for increased airport capacity, and the requirements Heathrow Airport Limited will need to meet in order to gain development consent.

2.8 The Government is bringing forward the two consultations at the same time because of the relationship between them. The policy principles set out in this airspace consultation will influence decisions taken later in the planning process for a Northwest runway at Heathrow, including how local communities can have their say on airspace matters and how impacts on them are taken into account. Some of the proposals, for example the role of a new Independent Commission on Civil Aviation Noise, are also needed to influence decisions on noise management measures.

2.9 To respond to the consultation on the draft Airports National Policy Statement, please visit www.gov.uk/dft/heathrow-airport-expansion

Consultation on night flights regime

2.10 A separate consultation on the next night flights regime at the designated airports (Heathrow, Gatwick and Stansted) began on 12 January and runs until 28 February 2017. These restrictions come into effect in October 2017 and the Government is proposing that they last for a period of five years. This period would end before a proposed new runway would be operational at Heathrow.

2.11 If you would like further details on the night flights consultation, including on how you can respond, then please visit: https://www.gov.uk/government/consultations/night-flight-restrictions-at-gatwick-heathrow-and-stansted.

UK Airspace Policy consultation: the suite of documents

2.12 This consultation document sets out the policy principles and proposals we consider optimum to meet our objectives. Alongside this, a range of supporting documents have also been published:

- **Draft air navigation guidance: guidance on airspace & noise management and environmental objectives.** The aim of this is to enable those who would like to understand how our policies would be implemented the opportunity to see draft guidance. Respondents to the consultation will be able to provide feedback on the draft guidance as well as the high level policies should they wish.
- **Survey of Noise Attitudes**. This report describes the main findings of a research study to obtain new and updated evidence on attitudes to aviation noise around airports in England. The study has been published by the CAA but was commissioned by the DfT, and builds on earlier non-aviation specific noise attitude surveys commissioned by the Department for Environment, Food & Rural Affairs (Defra).
- **Upgrading UK Airspace: Strategic Rationale.** This report describes the strategic national importance of an industry led investment programme to upgrade the UK's airspace structure. The report was commissioned by the DfT and carried out by the CAA, with technical input from NATS. The purpose of the report is to describe in general terms why the UK's airspace is being upgraded and how.

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How to Respond

2.13 The consultation period began on 2nd February and will run until 25th May 2017. Please ensure that your response reaches us before the closing date. An electronic response form is available at www.gov.uk/government/collections/uk-airspace-policy. Alternative formats (Braille, audio CD, etc.) and copies of this consultation document can be provided on request. You can also contact 0800 689 4968.

Alternatively, please send consultation responses to:

Freepost UK AIRSPACE POLICY CONSULTATION

Phone number: 0800 689 4968

Email address: airspace.policy@dft.gsi.gov.uk

2.14 When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

Policy Engagement

2.15 We have been supported in development of this package by a wide range of stakeholders who have generously provided their views and expertise. We intend to continue this dialogue through the consultation period and beyond.

2.16 We are inviting stakeholders to discussions around the country on our proposals during the consultation period. We have also formed a new Airspace and Noise Engagement Group (ANEG), which brings together representatives from local authorities, community and environmental groups, airports, airlines, air navigation service providers and sectoral bodies. Please contact us if you would like to know more about your representatives for these activities, or how to apply to observe an ANEG meeting.

Freedom of Information

2.17 Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004. If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

2.18 In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

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2.19 The Department will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Territorial Extent and Scope

2.20 Aviation and airspace are reserved matters. Our proposals relating to the design or change of airspace are therefore applicable to the whole of the UK. The new Independent Commission on Civil Aircraft Noise (ICCAN) would be a nationwide body with regards to its functions on airspace change. While noise policy for aerodromes is a devolved matter in relation to Scotland and Northern Ireland and planning is generally a devolved matter, noise policies proposed in this document, which are based on the Noise Policy Statement for England, shall apply where they are relevant to reserved airspace matters, such as the consideration of noise in airspace changess.

2.21 ICCAN's remit beyond airspace change, for example in providing best practice guidance on noise management will be finalised with the Devolved Administrations during this consultation.

2.22 Some of our proposals relate to how noise is managed at individual airports and use of the Government's powers to set noise controls at airports, as well as controls set through the planning system. As these powers are devolved in relation to Scotland and Northern Ireland and the planning system is also generally devolved, specific proposals, such as the implementation of EU Regulation 598/2014 on the ICAO balanced approach (page 73) will be for the Devolved Administrations to formulate policy on.

2.23 The scope of the measures in this consultation document is the civil aviation sector. This means that none of the measures here concern airspace arrangements and environmental and noise impacts associated with military aircraft use or the military airfields from which they operate. Environmental considerations relating to military aircraft and their airspace use remain the responsibility of the Ministry of Defence.

European Union

2.24 One of the proposals in this consultation is related to the implementation of European legislation. On 23 June 2016, the people of the United Kingdom voted to leave the European Union. Until exit negotiations are concluded, the UK remains a full member of the European Union and all the rights and obligations of EU membership remain in force. During this period the Government will continue to negotiate, implement and apply EU legislation.

Transition Arrangements

2.25 Many of the proposals within this consultation will require the Government to take steps to implement changes and the CAA to integrate into its policies and procedures. We will therefore work closely with the CAA following the consultation to agree an implementation date and detailed transition arrangements. Where relevant e.g. for airspace change, we would expect to mirror the transition arrangements set out by the CAA in its recent consultation on the Airspace Change Process: any change proposal

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which has yet to be consulted on before the introduction of the revised process should adhere to the new process from the implementation date.

2.26 In Chapter 4 we make proposals on how compensation policy should apply to airspace changes. Chapter 5 discusses how decisions on airspace can be made transparently and how noise can be assessed, particularly within thinking on route options for airspace change. We consider much of what we say in these sections to be best practice, and would stress that current policies do not restrict the approaches set out being used. We would therefore encourage industry to consider our thinking in any relevant activities, such as change proposals or reviews of noise management, in advance of any Government response or implementation of change.

What will happen next?

2.27 A summary of responses and a Government response to the consultation will be published at www.gov.uk/government/collections/uk-airspace-policy. Paper copies will be available on request. At this time, we will also take any actions necessary to implement final decisions taken, such as the publication of new guidance, making Directions under the Government's powers as appropriate and bringing forward secondary legislation.

2.28 WebTAG guidance on appraising airspace proposals will be consulted on in due course[5].

2.29 If you have questions about this consultation please contact:

Department for Transport
33 Horseferry Road
London SW1P 4DR

Phone Number: 0800 689 4968

Further background information can be found at
www.gov.uk/government/collections/uk-airspace-policy.

Consultation Principles

2.30 The consultation is being conducted in line with the Government's key consultation principles which are listed below. Further information is available at https://www.gov.uk/government/publications/consultation-principles-guidance

If you have any comments about the consultation process please contact:

Consultation Co-ordinator
Department for Transport
Zone 1/29 Great Minster House
London SW1P 4DR

Email consultation@dft.gsi.gov.uk

5 https://www.gov.uk/guidance/transport-analysis-guidance-webtag

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3. Airspace

What is Airspace?

3.1 Airspace is the volume of space above ground level and extends as far as aircraft can fly. Just as the UK's roads are used by pedestrians, cyclists, cars and other motorised vehicles, so our skies are occupied with aircraft of many kinds, both military and civilian. As with roads, airspace has to be managed so that those using it can do so safely and efficiently. To achieve this management, there are rules on who can use airspace and how.

3.2 In the UK, airspace is either considered to be "controlled" or "uncontrolled". In controlled airspace, there is a system of structured routes and aircraft are managed by air traffic control services ('ATCs'). They oversee the airspace and monitor the separation of aircraft in order to keep them safe as they head towards their destinations. Most commercial aircraft operate in controlled airspace. By contrast, a large volume of airspace in the UK is uncontrolled and this is where the pilot of the aircraft does not receive a service from the ground but has to "see and avoid" other aircraft and also navigate independently. Most light aircraft and some military and commercial aircraft operate in this airspace. All arrangements for UK airspace follow internationally agreed safety and operational practices and requirements.

Airspace Routes

3.3 Within controlled airspace, commercial aircraft fly within permanent structures, as set out in the UK's Aeronautical Information Publication (AIP). These structures include departure and arrival routes as illustrated in the diagram on pages 17/18. After take-off from the runway, aircraft will typically follow a pre-defined route up to a given altitude above ground level (usually 4,000 feet). This route is determined by the Standard Instrument Departure procedure (SID), which is a programme on the aircraft's computer system. Next, the aircraft will be directed (or 'vectored', see diagram on page 18) by air traffic controllers until they reach an airway. Airways are high-altitude routes which aircraft follow to their eventual destination.

3.4 During landing, aircraft leave their airway and enter a Standard Arrival Route (STAR). They may be 'held' in a stack until it is safe to bring them in for landing. Once it is safe, the aircraft are vectored with the assistance of air traffic control to safely approach the runway. For safety reasons, this closing stage requires aircraft to fly in a very straight line on their final approach. An Instrumental Landing System ('ILS'), is often used to assist with this. It helps pilots to line up with the runway by providing vertical and horizontal guidance, even when they cannot physically see the runway.

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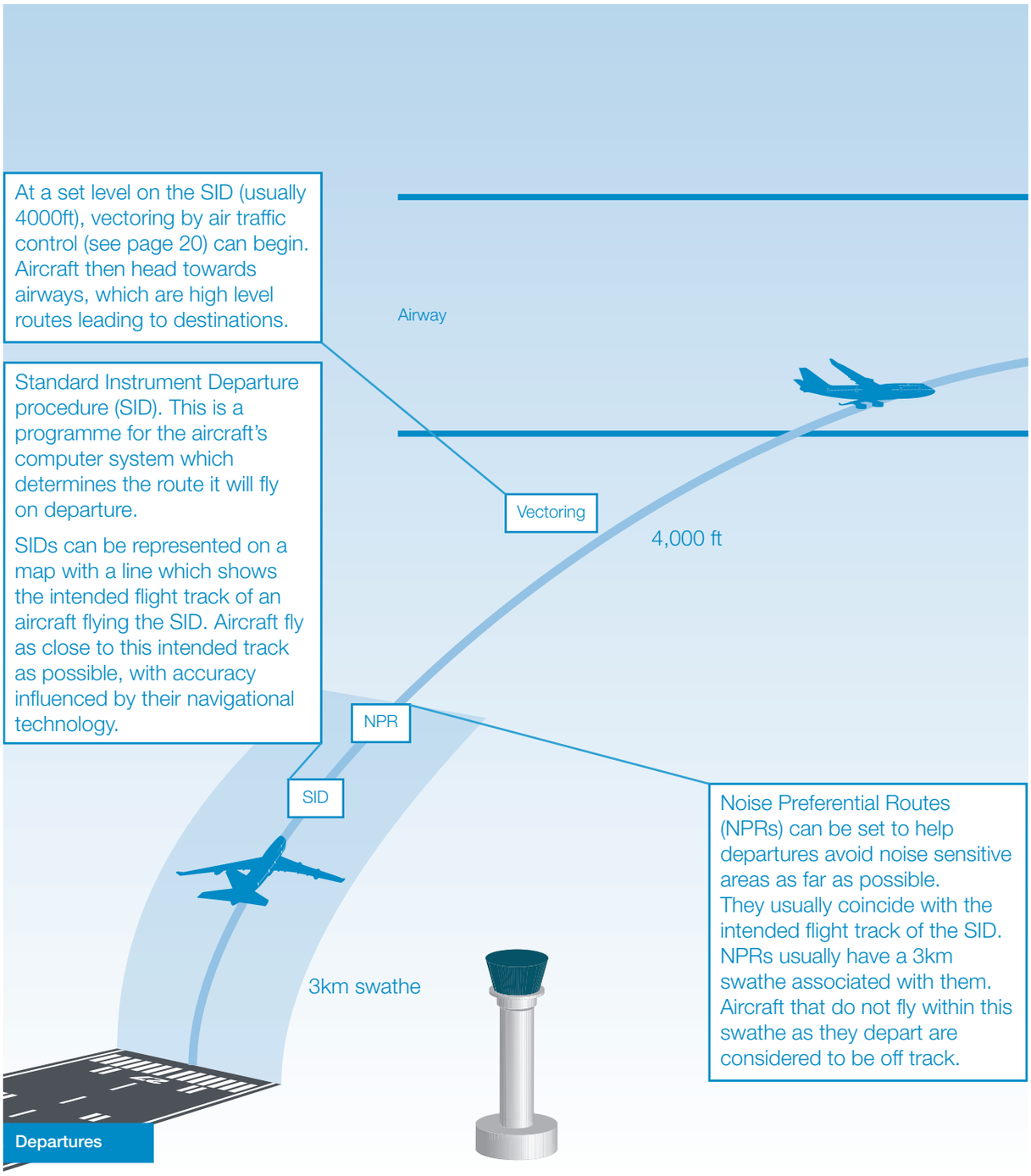

Airspace structures

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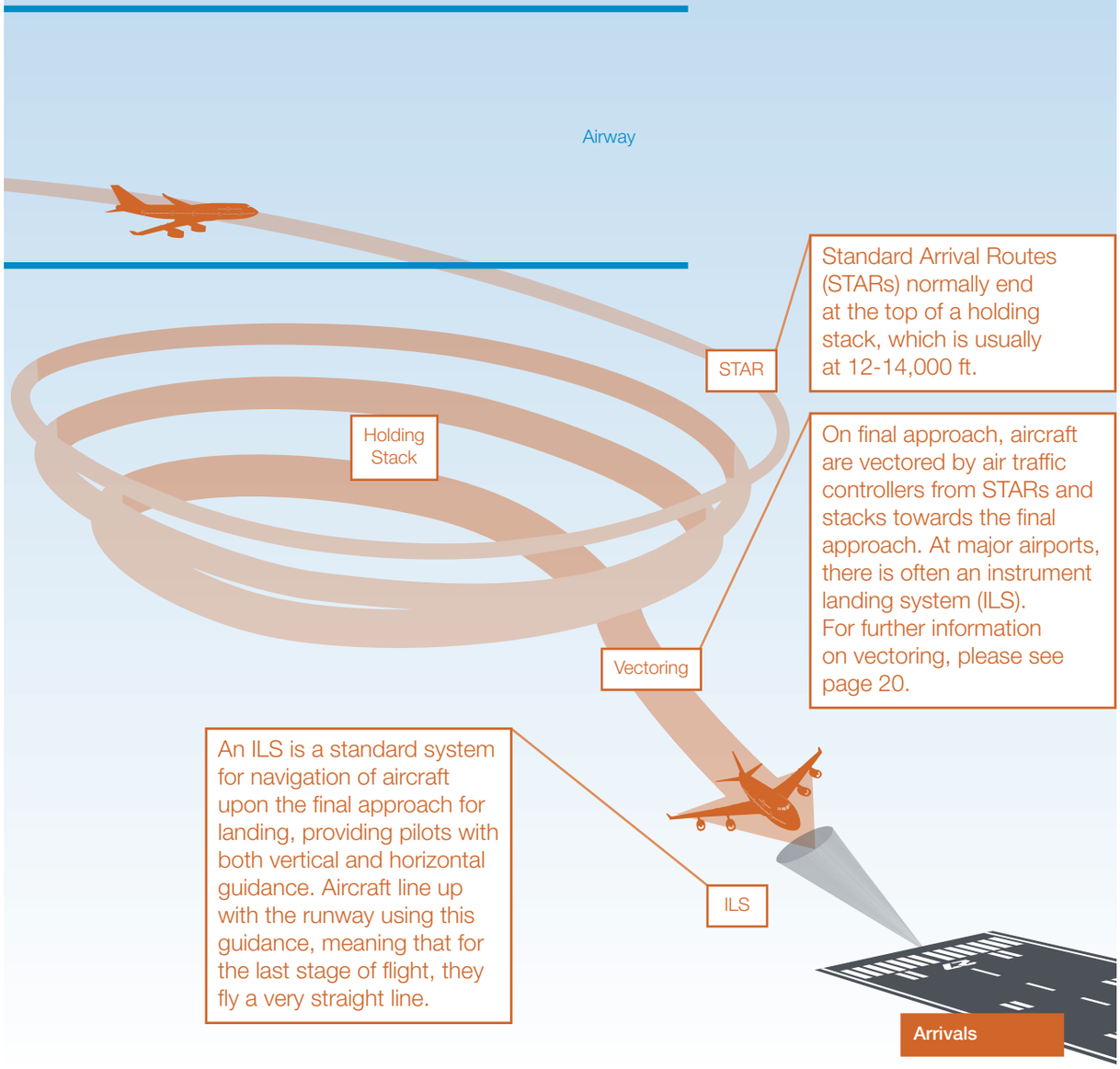
Airways are corridors of airspace where aircraft fly at higher altitudes (usually 7,000 feet and above) on their way to a destination. These corridors often take the most efficient routes. When aircraft are flying in airways, they are always separated by 1,000 feet vertically and 7-10 NM horizontally.



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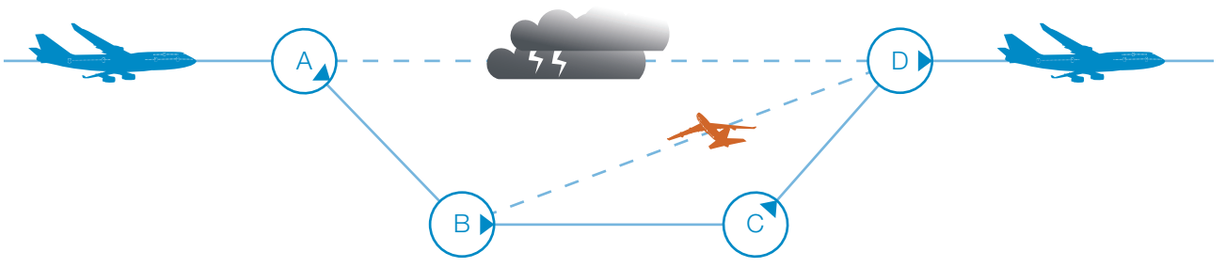
Vectoring is the practice of a controller giving a pilot a “heading”. A heading is a direction to travel towards, as a step on the way to a destination.

Controllers give headings depending on a number of factors such as the position of other aircraft, weather, etc.



In this scenario, the aircraft is unable to fly to most direct route due to bad weather. The controller gives a heading A.

At point B, the aircraft could turn towards its destination, avoiding the bad weather. But it cannot fly the most direct route (blue dotted line) because it would come too close to other aircraft (orange aircraft) in the airspace, so the controller gives it a heading towards point C.

At point D, the controller gives a new heading which allows the aircraft to continue to its destination.

Standard procedures

To some extent, the headings given depend on circumstances in the moment i.e. they are tactical. Air Navigation Service Providers (ANSPs) also have standard procedures, which may influence the headings a controller may give. ANSP standard procedures are published in:

- MATS Part I – standard to all ANSPs and published by the CAA. It is not location specific, and provides a general set of rules on vectoring for air traffic controllers.
- MATS part 2 – is an internal document, specific to an individual Air Navigation Service Provider (e.g. NATS). It gives location specific instructions.

Vectoring

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Airspace Modernisation

3.5 Airspace is an essential, but largely invisible, part of the UK's transport network. We depend upon it in order for our aviation sector to operate safely and make its crucial contribution to economic growth. Yet it is in need of modernisation, since most of the core infrastructure and procedures supporting landing and take-off, for example the use of ground based beacons, and the location of numerous flightpaths and holding stacks have remained largely unchanged in the UK for over 40 years. This prevents us from realising the full potential of modern satellite navigation technology which is fitted to today's aircraft.

3.6 In the absence of airspace modernisation, operational delays and cancellations are expected to increase as our skies get busier. Analysis commissioned by the DfT and carried out by NATS (the UK's main provider of air traffic control services) predicts total delays from air traffic management to rise from 78,000 minutes[6] in 2015 to 4.4 million minutes by 2030 and approximately 8,000 cancelled flights.[7] This delay is roughly equivalent to 3,100 days or 8.4 years lost to flight delays each year.

3.7 In addition, by 2030, the cumulative effect of several years of consistent delays would be expected to lead to almost 25,000 services that would otherwise have been scheduled no longer being run.[8]

3.8 Clearly, our airspace arrangements are expected to constrain the growth of aviation and the benefits it could bring unless they are modernised.

3.9 The diagram on pages 22 & 23 outlines how the benefits of airspace modernisation will be realised in practice. The combination of improved, satellite-based aircraft tracking will allow ATCs to exercise much higher levels of precision over the landing and take-off of aircraft, avoiding unnecessary taxiing on runways and eliminating the waste of both time and fuel. Through this, the modernisation of airspace initiative will help secure:

- Reduced delays through better planning of how airspace is used in real time;
- Cuts to per flight aviation emissions and savings on fuel through more direct routings and more fuel-efficient flying;
- Reduced noise from aircraft overflying communities, with less 'holding' at lower altitudes;
- Further enhancements to aviation safety.

3.10 The Government recognises that if we want our aviation industry and UK Plc to remain competitive and successful, we must upgrade our airspace structure.

6 Delays are flight minutes

7 See 'Upgrading UK Airspace: Strategic Rationale' p.59

8 See 'Upgrading UK Airspace: Strategic Rationale'

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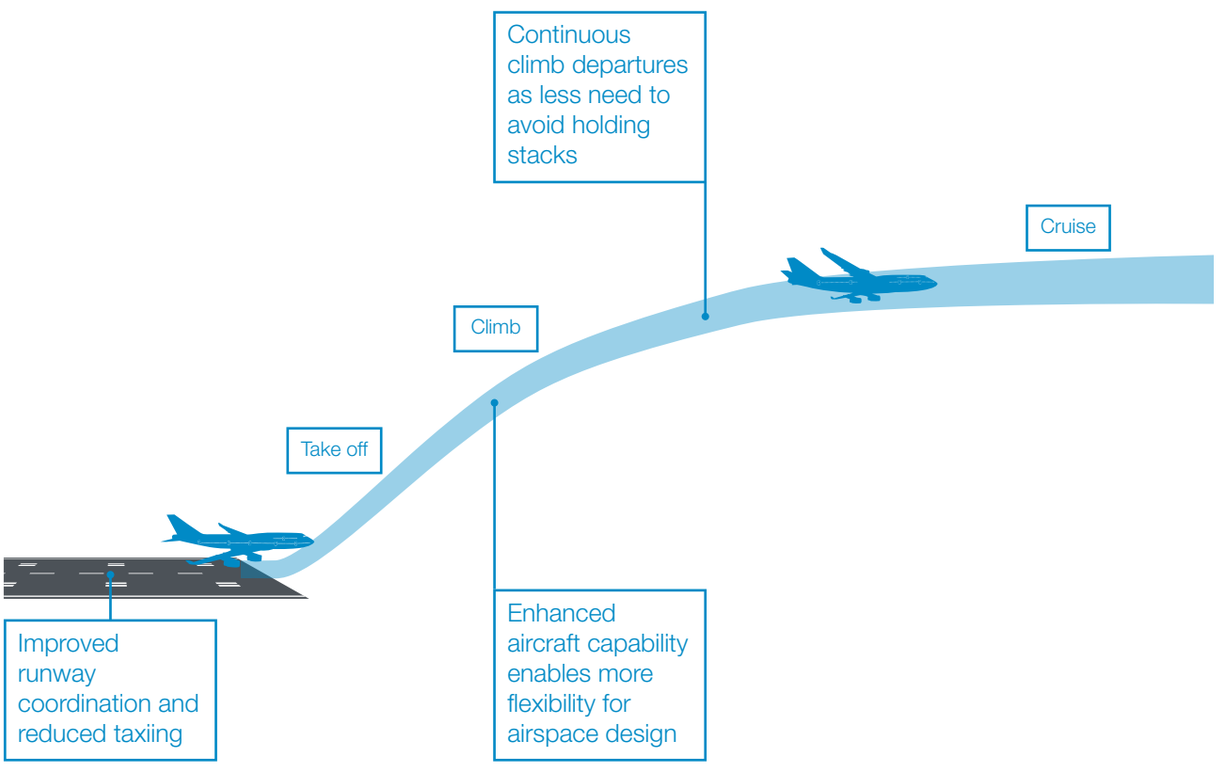
Airspace modernisation is a programme designed to update our airspace and air traffic management systems, some of which have been in place for around 50 years. This will bring our airspace in line with international best practice, and will enable us to improve performance and accommodate the forecasted growth in aircraft movements expected by 2030. Overall, airspace modernisation will mean enhanced safety, fewer delays, improved resilience to disruption, better passenger experience, lower costs and reduced environmental impact through less fuel burn and less noise per flight. The programme involves airlines, airports, air navigation service providers and many other aviation stakeholders working together on projects which bring in the use of modern technologies and procedures. Examples of these projects are illustrated below and on the following page.

Airspace Modernisation will see improved communication between Air Traffic Controllers ('ATCs') and aircraft. This will result in less need for controller intervention and will allow for better resilience in air operations, meaning that when there are difficult conditions (such as bad weather, or a problem with the runway which needs to be dealt with), airports will be able to recover more quickly.

Starting at the airport itself, better tracking technology will reduce the need for taxiing on the runway and avoid wasted runway slots.

Departures will benefit because aircraft will be able to follow more precise departure routes, making it easier to optimise routes and avoid flying over people.



Reduced use of holding stacks will create more airspace which will enable aircraft to adopt a smoother and more continuous climb profile, thereby reducing jarring engine noise.

Airspace Modernisation

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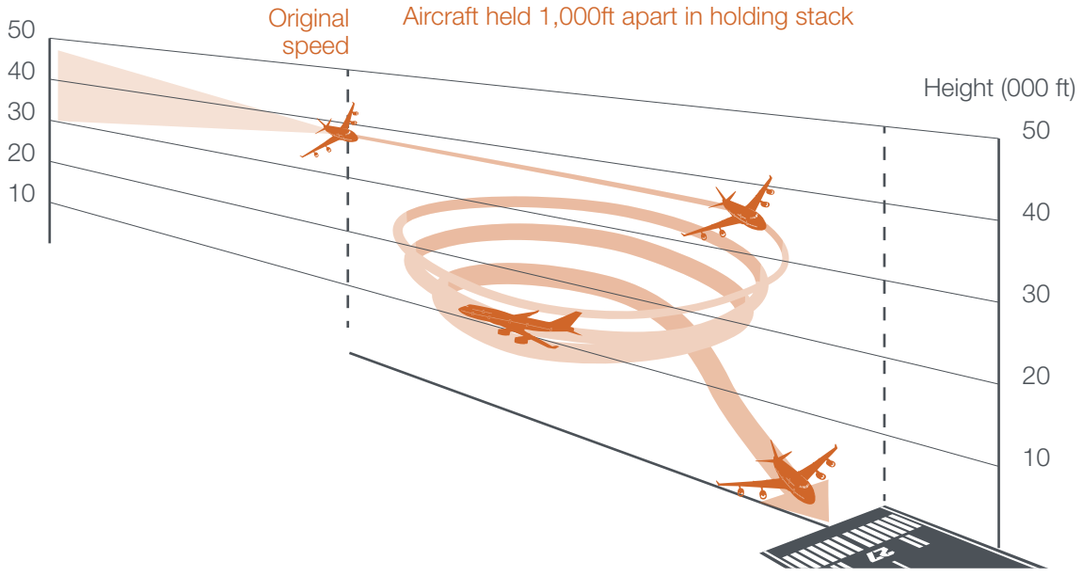
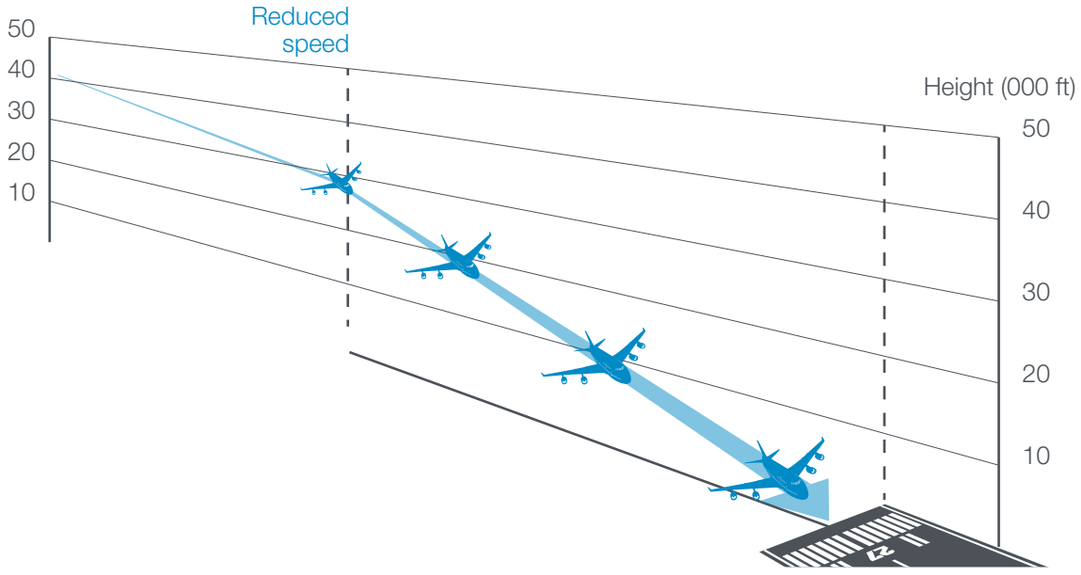
The use of holding stacks will be reduced because of improved arrival and landing arrangements. On approach to land, ATCs have traditionally only been able to see aircraft when they come onto their radar. New technology will allow aircraft to be constantly tracked from their original departure point and directed to adjust their speed so as to make the best possible use of airspace. This will enhance efficiency, including by greatly reducing the need to delay landing by keeping aircraft in holding stacks when the runway is busy.

Now



Future



For example, an aircraft might be instructed to slow down in its cruise and descent phases to absorb a delay, staying higher for longer and only descending when the airport is ready. Once cleared for landing, systemisation and advanced navigational capability will also will mean that ATCs are able to guide aircraft to land at a controlled rate, using continuous descent, allowing for maximum use of runway capacity.

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Challenges arising from airspace use and modernisation

3.11 Advances in aircraft technology have allowed for great improvements in the environmental performance of aircraft frame design and engines, in terms of noise and carbon emissions. This has had a substantial effect on the noise experienced on the ground. For example new generation aircraft such as the Airbus A350 and Boeing 737-MAX have a noise footprint that is typically 50% smaller on departure and 30% on arrival than the aircraft they are replacing. Overall, aircraft noise is expected to continue to fall in the future compared with today's levels. This trend has the potential to outweigh the noise from increases in traffic, for example as a result of the proposed airport expansion at Heathrow Airport.

3.12 However, even as aircraft get quieter, there are challenges that new aviation technology will bring. One of the major components of airspace modernisation is Performance-Based Navigation (PBN) which allows aircraft to fly far more accurately than with previous navigation techniques (see Diagram on page 41). While this has obvious benefits in terms of noise, as populated areas can be better avoided, it also pose challenges – particularly the effects for those directly underneath flight paths experiencing a greater concentration of aircraft. Reaction to recent airspace changes has shown that the impacts of these changes can be especially noticeable in areas further away from airports where, although individual aircraft are comparatively quiet, there are more of them than was previously the case when traffic was more dispersed.

3.13 The Government recognises the work already being done by the aviation sector to manage its environmental impacts responsibly and to address the impacts aircraft noise can have on communities. For example: Sustainable Aviation is a unique coalition from across the sector who work together on initiatives to improve environmental performance; and recent airspace changes at Stansted Airport were developed with local communities involved from the outset – this has seen the benefits available from PBN harnessed effectively and as a result there has been a dramatic reduction in the number of people being overflown. However, there are also examples of changes where noise and community interests should have been better considered. The Government wants to be clear that it expects industry to be primarily responsible for seeking improvements in its noise performance and for ongoing engagement with communities.

3.14 Industry should, as far as is practical, proactively seek to avoid, minimise and mitigate adverse noise impacts, building on existing best practice. This is consistent with the overarching policy principle that the benefits of noise reduction brought about by new technology should be shared between industry and those affected by aircraft noise. This means that communities should benefit from noise reductions, while industry should have space to grow sustainably and serve passenger demand.

3.15 Alongside benefits to the UK associated with airspace modernisation outlined above, there are challenges; change in itself can be difficult, and while many communities will have reduced noise in the future, it is inevitable that some will remain for others. Even with the potential gains arising from new technology and airspace modernisation fully realised, we therefore recognise that there will be communities close to airports and flight paths who will continue to be directly impacted by noise emissions from aircraft. The aviation industry has an obligation to manage these impacts effectively, and make sure that impacts are properly considered when airspace changes are made. The Government has a role in setting out a suitable framework to enable this. The proposals in this consultation document are designed to create a better framework in which noise impacts can be considered and acted upon appropriately.

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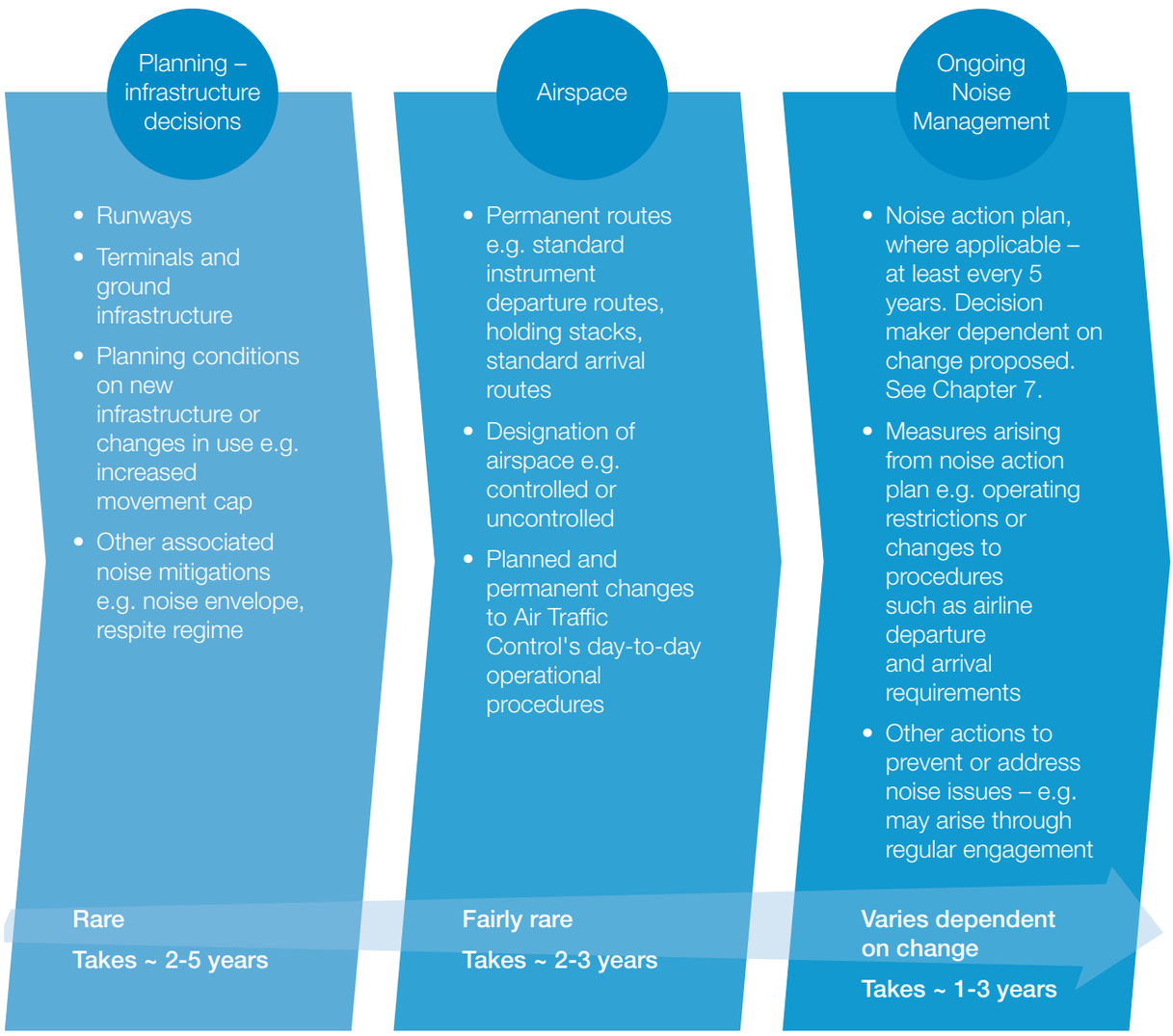
Decisions on Airspace and Noise Management

3.16 There are many decisions in the lifetime of an airport which affect how airspace is used and how noise is managed. These range from the initial stages of airport design or expansion, through to their continuous operation once up-and-running. The most important consideration in all decisions on airspace use is always safety. Providing the use of airspace is safe, decision makers will also consider a range of other factors, including: efficiency; the needs of aircraft owners and operators; the interests of other people such as communities on the ground; protecting the environment, such as by reducing carbon and noise emissions; the interests of the military; and national security.



Decision timeline

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3.17 It is important that there is clarity for communities about when they can influence decisions which will affect them. The diagram on page 25 shows a basic timeline of when decisions affecting airspace and noise management are made: during the planning process; during airspace change processes; and in ongoing noise management, informed by local engagement. This timeline applies for any airport but it is demonstrated directly in the timeline which the Government has set out for the proposed development of a new runway at Heathrow Airport.[9]

Infrastructure

3.18 Effective planning sets the parameters for subsequent decisions by ensuring that the environmental impacts which could result from new or increased aviation capacity, or other airport development, are properly accounted for at the outset. The decision to grant planning permission includes consideration of what the maximum acceptable environmental impact should be, taking into account the full range of planning factors and the different measures available to manage noise under the Balanced Approach (See Chapter 7 on Ongoing Noise Management). The planning process also identifies and addresses problems by preventing unacceptable impacts from occurring, and by minimising other adverse impacts through effective mitigation. This is therefore the best opportunity to consider whether operating restrictions are required to support development of new aviation capacity. Operating restrictions may include a cap on movements, night flight restrictions or a noise envelope, which can provide certainty to communities about the maximum noise that will be experienced.

3.19 If a planning decision means that new airspace arrangements will be needed (for example when there is a new runway or amendments to an existing one), the planning process can serve as a precursor to the airspace change process. Final decisions on the structure of the UK's airspace and detailed route design following new planning decisions need to go through the CAA's Airspace Change Process to ensure that all factors are properly balanced. However, the planning process can consider indicative routes and their potential impacts. Through planning, informed by engagement with local communities, the potential routes are developed to provide a picture of likely noise impacts. It is therefore through the planning and airspace change processes that aircraft routes needed for the operation of new infrastructure are developed from indicative to final, with further detail being established at each stage.

Airspace

3.20 Airspace changes may, of course, be needed outside of changes to infrastructure. All changes to the formal airspace structures for civil aviation are overseen by the CAA, as the UK's independent regulator of airspace. The framework provided by Government requires that change proposals must be safe and must balance the needs of those affected, including communities on the ground. The process is informed by formal consultation. The CAA is currently reviewing its process for airspace change and it is expected to bring forward proposals on new guidance later this year[10]. Later in this consultation document, we bring forward proposals on how the full range of changes to airspace use should be handled, such as those brought about when Air Navigation Service Providers (ANSPs) amend their operational procedures.

9 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/562915/heathrow-airport-expansion-summary-document.pdf

10 CAA response following consultation on proposals for a revised airspace change process 21st October 2016

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Ongoing Noise Management

3.21 Outside of planning and airspace changes, airports, working with airlines and air traffic control providers should engage in continuous activity to review and improve their noise performance. The current requirement for larger airports to produce a noise action plan at least every five years feeds into this. Such plans can take into account growth or changes in activity that have occurred at an airport since planning and airspace arrangements were put in place. There are also examples of airports working with their communities to solve specific problems outside of their regular noise action planning. Through this ongoing noise management, industry responds to changes that could lead to noise problems and identifies ways to share the benefits that the growth of aviation and improvements in technology bring.

The Decision Making System

3.22 In addition to clarity on when and how decisions affecting airspace use and noise take place, we recognise that there must be a clear picture of who is responsible for those decisions and why. The foundations of the decision making system that we are aiming to create are:

- That the level at which decisions are made should strike an appropriate balance between the different factors that must be considered and between local and national needs; and
- That for decisions to be effective, they must be informed by engagement at the local level, and we expect decisions to be taken locally or informed by local circumstances wherever possible.

3.23 Throughout this consultation document, we make proposals which aim to put in place a clear system for decision making, based on these principles, as well as the need for appropriate processes for each type of decision.

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4. Changes to Airspace

4.1 There is a range of decisions which are taken about airspace. Other events, such as changes in demand, can also affect its use. It is important that there are the right levels of scrutiny and transparency in place in relation to these if we are to be able to balance the needs of passengers, industry and communities on the ground. For communities, it is particularly important that changes to airspace which create changes to noise impacts are properly communicated and that decisions are taken with proper oversight. At the moment, there is not a clear set of standards which provide for suitable levels of scrutiny and engagement for the different types of changes which can occur in airspace use.

4.2 The Government recognises that when any change occurs to the noise levels that a community experiences, it is not necessarily important to that community how the change came about. Airspace is hugely complex and there are many layers of structures and procedures. However, the Government is clear that there should be suitable and proportionate levels of local engagement and transparency for the various types of changes that come about.

4.3 To help set suitable policies in these areas, we have described three tiers of airspace-related changes and the processes we would expect to be associated with them.

- **Tier 1:** Changes to the permanent structure of UK airspace – these changes are already covered by the CAA's formal airspace change process, which is currently undergoing significant improvement. The process would be further strengthened by the proposals in this consultation, such as the introduction of ICCAN, and guidance on how to assess significant noise impacts.
- **Tier 2:** Planned and permanent changes to ATC's day-to-day operational procedures (e.g. vectoring practices) – these procedural changes can have a very similar effect to changes to the permanent airspace structure because they may result in planned and permanent redistributions of aircraft traffic (PPR). Our objective is for there to be a suitable and proportionate change process in place for these changes and we set out detailed proposals on these kinds of changes, below.
- **Tier 3:** Changes to operations – for example significant shifts in the distribution of flights on particular routes. These may not be planned decisions to change the use of airspace, but shifts over time and in response to changes in demand. However, recognising both the need for the public to be informed and the need to avoid excessive bureaucracy, we would expect airport and air navigation service providers to engage and act transparently with regards to these kinds of changes.

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4.4 This chapter deals with who the decision makers should be, and how suitable processes should be established in respect of each of these three tiers of change.

Current Situation

Tier 1 airspace changes

4.5 The CAA determines the process which must be undertaken by sponsors of an airspace change proposal. The Government influences the contents of that process via its Directions to the CAA on air navigation and its guidance to them on how to take into account their environmental objectives. The process includes how sponsors must engage with all interested and impacted parties, and details how the CAA makes its decisions to approve or reject proposals within the legal and policy framework set by Government, and in accordance with ICAO and EASA requirements.

4.6 The Secretary of State (SofS) currently has role in tier 1 airspace changes, approving any airspace change proposal which is anticipated to have significant detrimental effect on the environment. This limits involvement of the SofS to a very specific circumstance, and does not reflect the full range of central Government's strategic national interests in airspace change. In addition, the trigger for SofS's involvement in an airspace change is not clear, as there is no guidance on what would be considered a significant detrimental effect on the environment.

Tier 2 airspace changes

4.7 Air traffic controllers give instructions to pilots on the exact route they should take. This practice is called "vectoring" and it usually happens near the beginning and towards the end of a flight, to get aircraft going in the right direction, or to bring them in to land. The practice is illustrated in more detail in the diagram on page 18.

4.8 Vectoring patterns are to some extent random, as they depend on the specific circumstances on the day, for example the weather, the time of day, the volume and location of air traffic, and the individual decisions of air traffic controllers. However, each air navigation service provider (ANSP) has a locally specific manual (MATS Pt II) which underpins how its air traffic controllers manage aircraft, and in turn influences their vectoring decisions. This manual heavily influences the consistent patterns of aircraft traffic that are created by vectoring.

4.9 Recently, several communities have raised concerns as to why changes to the formal airspace structure are subject to the CAA's airspace change process, and need to be consulted on, whereas changes to consistent vectoring practices can be implemented without any need to consult. This can be the case even when the noise impacts may be similar.

Tier 3 airspace changes

4.10 There are no formal arrangements currently in place for tier three airspace changes within the Government framework. We are aware of both good practice in this area, and examples of where tier 3 changes have caused issues for communities in terms of the noise they experience.

Analysis

Role of the CAA in airspace change

4.11 The CAA is the UK's independent regulator of airspace, and the Government believes that it should continue to be so. The CAA is the only body with the expertise to effectively balance all the factors which must be considered in regulating airspace. These factors are set out in detail in section 70 of the Transport Act 2000 (see Annex A), which gives the CAA its statutory duty in relation to its air navigation functions. This

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requires the CAA to give priority to safety and then to balance the needs of everyone affected by airspace change, including a duty to take into account the guidance on environmental objectives we provide.

4.12 We recognise that in recent years, some groups have expressed their mistrust of the CAA and around its focus on environmental impacts; we also recognise the CAA's work to address those issues. Our aim is to better support the CAA to put in place processes and rules which are clear, robust and proportionate, and which allow for balanced decisions in the regulation of airspace.

4.13 With this in mind, we see the CAA as having a role within airspace changes falling within each of the tiers outlined above. Our draft guidance provides detail on how we expect these roles to be carried out to ensure transparency throughout, for instance through the publication of an environmental statement with their decisions, to help communities understand how different factors have been weighed against one another.

Tier 1 airspace change

4.14 We acknowledge the need for an updated role for the SofS in tier 1 airspace changes. Our overall objective is to develop a strategic role for the SofS, consistent with our vision for the decision making system as described on page 27. To provide certainty for industry and minimise the costs of beneficial change, we also see it as a priority to clarify the circumstances under which the SofS would be involved in airspace change and how the decision would be taken.

4.15 The role of the SofS in tier 1 airspace changes should be:

- Proportionate;
- Transparent; and
- Defined

4.16 The SofS's role should also be reserved for cases that are considered to be of strategic national importance. This is because the CAA is best placed to make decisions on airspace changes in most cases. It has the required expertise to analyse and balance the impacts of changes on safety, operations and the environment, and to balance the needs of all those affected. Furthermore, we are strengthening our guidance to the CAA, including on the Government's environmental priorities, which must be factored into decision making. This will limit where Government intervention adds value over and above the CAA fulfilling its role to matters where the national interest comes into play.

Tier 2 airspace changes

4.17 The Government has considered when local communities should be engaged with about changes to vectoring practices which may affect the level of noise they hear, and what kind of change process should apply. *We accept that the current situation does not provide an appropriate level of transparency.*

4.18 We also recognise that vectoring by controllers is essential for the operation of the aviation sector, and will need to continue unless and until systemisation can offer viable alternatives. It is expected that as airspace modernisation progresses, there will be greater systemisation, and we can expect the use of vectoring practices to decline. For example, trials of new navigational technology (PBN) have shown that intervention by controllers at the early stages of the departure flight path are much reduced, possibly by as much as 90%. So there would be a gradual reduction in the overall amount of

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vectoring as modern routes are implemented on departures, and the potential realised for much less direct controller intervention on arrivals in the future.

4.19 Overall, we have concluded that a proportionate change process for when ANSPs amend their procedures would help to:

- Ensure that local communities are better informed by ANSPs of their current and future vectoring practices, thereby increasing transparency in how vectoring areas are being used;
- Increase the level of oversight undertaken by the CAA of changes to air traffic procedures that redistribute aircraft tracks and noise impact;
- Ensure that the needs of communities affected by aircraft noise are properly balanced with the needs of industry and passengers in decisions on PPRs; and
- Remove the anomaly in engagement levels caused by technical differences between different types of changes.

Tier 3 airspace changes

4.20 With regard to these kinds of changes, the Government believes that industry should take care to be more aware of the impacts associated with these changes and should take them into due consideration in communicating with its stakeholders, including local communities. There are structures in place which can help with this, such as Airport Consultative Committees and other relevant groups used to engage and inform their communities as appropriate.

4.21 The Government would not wish to unintentionally constrain development of new markets or reduce efficiency unacceptably by over-regulating tier 3 airspace changes. Rather, the approach here must be proportionate, taking into account the impacts of the changes and the local circumstances. For example, it can cause more disturbance to local communities to reverse a change in pattern which has happened slowly over time and which people are accustomed to. This is because often the most severe reactions to noise occur when the experience of it changes. As part of their ongoing noise management approach, airports should give due consideration to tier 3 airspace changes and whether any mitigations would be appropriate. Any such mitigations must be carefully thought through, and discussed with local communities, to avoid creating additional unintended consequences.

Proposals

Tier 1 airspace changes

4.22 Our proposal is to create a new call-in role for the SofS, and to ensure that the criteria to trigger this is set at a level which means that it would be only for airspace changes deemed to be of national importance. This would create the right function for Government, retaining the SofS's important role in determining the most significant proposals while minimising Government intervention and making sure that it is clear when and how that involvement could take place. As in the planning system, there would be no obligation on the SofS to agree to call-in a specific airspace change application, rather, it would be at his or her discretion.

4.23 It is proposed that the only environmental trigger would be the likely noise impact on local communities. This is because noise is a key priority in airspace change proposals below 4,000 feet above mean sea level (amsl) and it remains a substantial factor below 7,000 feet amsl. Environmental factors other than noise may be important to an airspace proposal, but these would only be a factor in a call-in decision if their impact was

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expected to be as significant as envisaged in the criteria proposed in paragraph 4.24 below.

4.24 Any party can ask for the SofS to call-in a proposal. If an airspace change proposal met the call-in criteria, the SofS will have a discretion whether or not to call it in. The proposed criteria for the SofS to call-in an airspace change proposal are that:

- It is considered to be of strategic national importance and was not linked to a planning decision which had already been determined by the SofS; or
- The proposal could have a significant impact (positive or negative) on UK economic growth; or
- It could 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[11] as well as having an identified adverse impact on health and quality of life.[12]

11 100% mode LAeq 16h noise exposure.

12 The assessment of the numbers of people affected and the associated adverse impacts on health and quality of life of the airspace change proposal should be carried out by the sponsor in accordance with the requirements set out in this Guidance.

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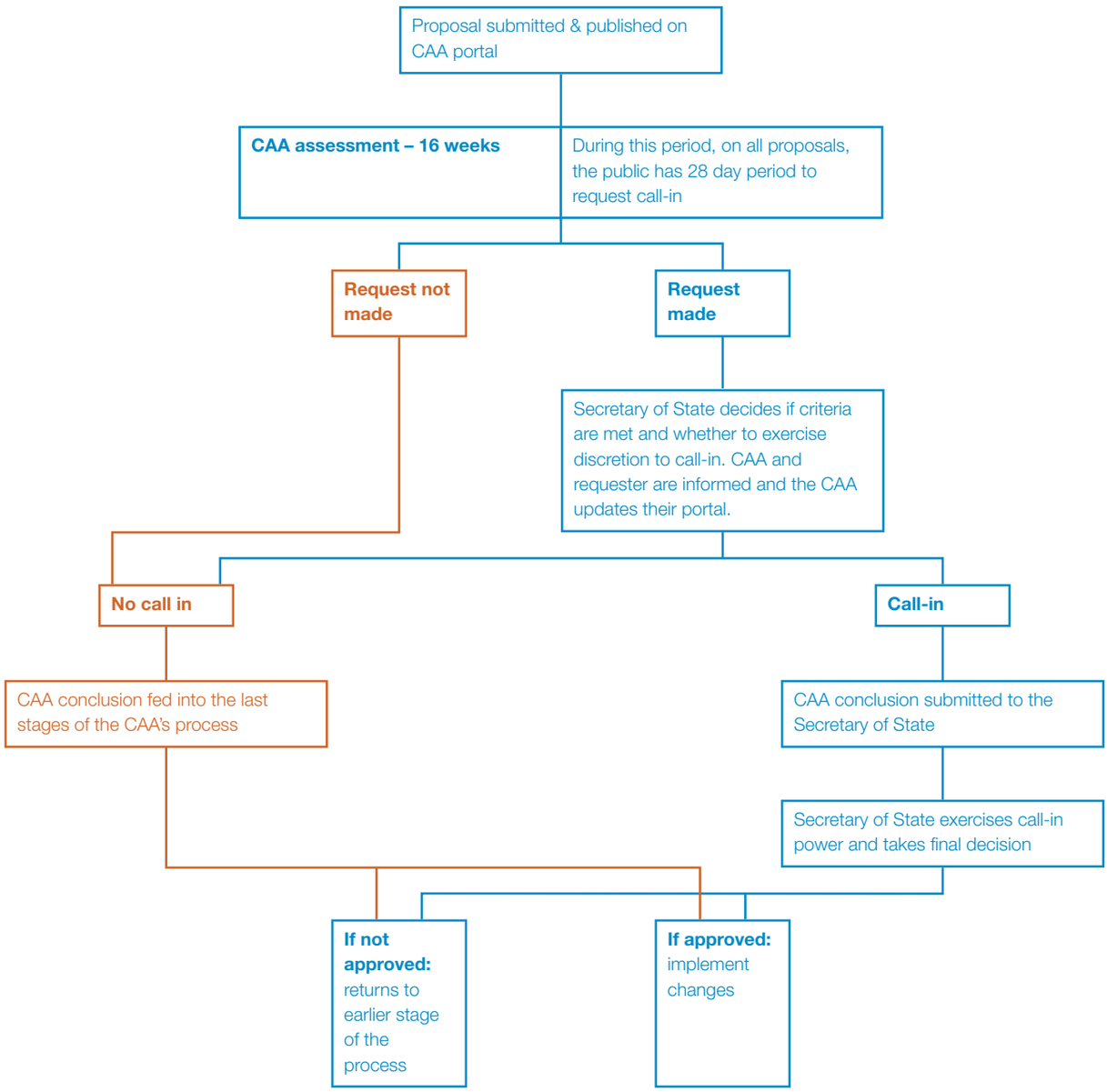
Please note that this is the fifth stage in the CAA's new Airspace Change Process. There are stages prior to this which govern the development of a proposal in the run up to a CAA assessment and decision.



Proposed tier 1 airspace change process indicating the proposed role of the Secretary of State

4.25 The process we are proposing for the SofS call-in function in tier 1 airspace change is illustrated in the diagram above. Any party could ask for the SofS to call-in a decision in the first 28 days after the proposal has been submitted to the CAA. If a request were made during that period, the SofS would make a decision as to whether the criteria for call-in were met and whether he/she agreed to the call-in request on the basis of the information supplied by the proposer. This decision would be communicated to both the CAA and the requestor before the CAA had finished its own assessment.

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4.26 If the proposal was not called in, the CAA would continue its process to conclusion and its decision would be final. For a called-in proposal, the CAA would be expected to carry out a full analysis and provide an expert opinion, but the final decision would be left to the SofS to make. To help this process, it is expected that the SofS would ask ICCAN (please see Chapter 6 for more detail) for its help with the consideration of any noise aspects of the proposal. The sponsor of the proposal would also have an opportunity to make their views known to the SofS on why they think the airspace change should be approved. More information on the proposed process can be found in the draft guidance published alongside this consultation document.

4.27 The call-in role would need to be exercised within the context of any relevant planning decision already agreed. In such cases, the airspace change process will need to consider whether the planning consent included references to airspace matters. If it did, the assumption is that the airspace change process should not override the original planning consent, but would seek to work within the framework granted by the planning consent. For example, in developing its application for a Development Consent Order (DCO) for its proposed new runway, Heathrow Airport Limited is expected to use indicative airspace arrangements, which will be considered and decided upon by the SofS. Any subsequent consideration of the airspace arrangements for a new runway by the SofS would not revisit what was agreed at the DCO stage, but would examine the further detail that had been developed in light of the planning agreement.

4.28 It is recognised that the call-in option has some drawbacks, such as:

- adding costs and delay to some airspace change processes; and
- creating uncertainty as a result of the possibility that the SofS may in some cases balance competing factors differently from the CAA in the national interest.

4.29 We acknowledge that delay and uncertainty are significant disadvantages for change sponsors and communities alike, and we would not want to delay the benefits of a change, including noise reductions. It is considered that some of these drawbacks can be mitigated within the process for the call-in function whilst ensuring that the key advantage of retaining a direct role for the SofS in the airspace change process is retained.

4.30 Overall, a call-in would continue to provide a strategic role for the SofS and democratic accountability in the airspace change process. It would enable the SofS to determine whether an airspace change proposal should be approved or not if the substance of that application is considered particularly important i.e. if it met the criteria for call-in.

Tier 2 airspace changes

4.31 The Government considers that it is right for ANSPs to assess whether a proposal to amend MATS Pt II could amend vectoring practices in such a way as to lead to a permanent and planned redistribution of aircraft (PPR). We therefore propose that:

- When changes are likely to cause a PPR and create a certain level of noise impact below 7000 feet amsl, ANSPs should engage with affected communities as appropriate on the proposal;
- The CAA should asses the proposal in terms of the factors set out at s70 of the Transport Act 2000, and in terms of sufficient engagement activity having been conducted. The CAA should give its approval for the procedural change before it is implemented; and

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- The CAA should establish a policy on an appropriate change process for tier 2 airspace changes in line with their duties under the Transport Act 2000, and to be consistent with better regulation principles and practices. This will include the level of engagement which is considered suitable, including where consultation is appropriate.

4.32 It is recognised that the suggested approach needs to be proportionate. Most changes to air traffic control procedures do not markedly affect the distribution or impact of noise and a balance does need to be made to ensure that the proposed increase in regulatory requirements does not have unintended consequences, particularly for smaller airports and their ANSPs.

4.33 We therefore propose to put in place a number of exclusions to reflect these concerns, including when there is an overriding need to maintain air safety, purely short-term airspace requirements, or military air activities. In addition, in order to provide clarity for ANSPs, we propose to provide guidance which will assist ANSPs and the CAA in determining when a PPR may create an impact that would mean it should be subject to consultation/engagement. More detail, including on the proposed exclusions, can be found in the draft guidance to ANSPs and CAA published alongside this consultation document.

Tier 3 airspace changes

4.34 The Government proposes that the CAA should put in place a suitable policy for industry to follow in respect of tier 3 airspace changes. This should include setting out expectations on transparency and engagement with communities, including on potential ways to mitigate adverse impacts. We wish to see the CAA take a light-touch approach here, working in conjunction with the new Independent Commission on Civil Aviation Noise to disseminate best practice and improve transparency where necessary. This is included in the draft guidance published alongside the consultation.

Summary

Tier	Decision Makers	Process
1	CAA in the majority of cases.	Change process established by the CAA under Government's framework.
	SofS can call-in proposals if they meet the criteria.	Call-in process established by the Government.
2	Where there is a PPR, CAA.	Change process established by the CAA under Government's framework.
3	Airports, where decisions are taken.	Policy on appropriate engagement established by the CAA, under Government's framework and in conjunction with ICCAN.

Proposed Airspace Change Processes

Compensation in Airspace Change

4.35 Industry should always seek the best noise outcomes possible in airspace change, taking into account the full range of factors which must be considered. Our policies on noise assessment, set out in the next Chapter are designed to assist with this. But there will sometimes be communities which are adversely impacted by noise as a result of airspace changes. As a fall-back, therefore, it is right that industry can seek to mitigate its impacts through compensation. Our priority is that the right balance can be struck between the economic and environmental effects of airspace change.

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Current Situation

4.36 The Government and airports have received many complaints regarding aviation noise in recent years. These have sometimes highlighted, amongst other issues, that residents do not feel they are being adequately compensated for changes to noise. A particular point raised is the discrepancy between the treatment of noise impacts associated with use of new airport infrastructure, where compensation is payable, and noise from airspace changes where no statutory compensation rights or government policy exists.

4.37 Legal obligations for compensating noise impacts for airport developments of new runways or airport aprons (ground movement areas) are set out in the Land Compensation Act 1973 and policy on compensation metrics are found in the current Aviation Policy Framework (see Annex D). The APF includes an expectation of a minimum of financial assistance towards insulation to residential properties where a development leads to an increase in noise of 3dB or more which leaves people exposed to levels of noise of 63dB LAeq16h or more, or assistance with the costs of moving if the property is exposed to levels of 69dB LAeq16h or more. As an illustration a 3dB increase in average continuous noise (the LAeq metric) is equivalent to a doubling of aircraft movements of the same noise level or a doubling of the average noise energy per event or some intermediate changes in each.

Analysis

4.38 In general, airports can and do go beyond minimum standards and it is right that decisions on what is proportionate and appropriate are made as part of the planning and airspace change processes. We would like airports and airspace change sponsors to look at examples at other airports to consider how their own compensation rules could be enhanced when changes are proposed which affect noise impacts.

4.39 The Government wishes to ensure that the right balance is struck between fair compensation for those affected by aviation noise and proportionate costs on the aviation sector. In turn, this could help facilitate beneficial change.

4.40 Our proposals in Chapter 5 include a requirement for airspace change promoters to produce an options analysis. This would help with consideration of any compensation offered; the expected financial benefits of any airspace change will inform whether and at what levels compensation may be realistic. In particular, clarity that compensation should apply to airspace change may help when options for multiple routes are considered (see Chapter 5). This is because options analysis may show that the fairest way to minimise the impacts of noise would be to affect fewer people by concentrating air traffic, while focussing compensation on those affected.

Noise Levy

4.41 The Airports Commission (AC) stated that 'the Government should introduce a noise charge or levy at major UK airports to ensure that airport users pay more to compensate local communities'.

4.42 Since the AC's Final Report, we have carried out further work on the noise levy recommendation. We have concluded that a noise levy applied to all major airports regardless of whether they are expanding would not be proportionate, particularly because:

- A national noise levy would count as a tax, and its application only at one or selected airports would have likely State Aid implications;

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- Many UK airports already provide ongoing compensation funding to their communities via existing section 106 agreements (under planning law) and voluntary payments; and
- Evidence collected on airport complaints suggests no strong case for further compensation at airports that are not expanding.

4.43 We therefore are not proposing moving forward with a national noise levy. Instead, the Government supports the development of an ongoing Community Compensation Fund at an expanded Heathrow Airport. Please see the draft National Policy Statement consultation, published in parallel to this document, for further detail.

Proposals

4.44 We propose four changes to aviation noise compensation policy, to improve fairness and make it more transparent. The purpose of this proposal is to incorporate airspace changes into the existing compensation policy so that compensation policy would be the same for all changes which affect noise impacts regardless of whether they are a result of infrastructure change or a tier 1 or 2 airspace change overseen by the CAA. In addition, we are proposing some refinements to existing policy with the aim of making it fairer to those impacted by higher noise levels.

4.45 The four proposed changes to current policy are:

1 Change the policy wording to remove the word 'development' in terms of when financial assistance towards insulation is expected so that compensation is applicable regardless of the type of change (infrastructure or airspace change);

2 Change the policy wording to allow for financial assistance towards insulation in the 63dB LAeq level or above to be applicable regardless of the level of change that causes a property to be in that noise contour level (i.e. remove requirement for a minimum 3dB change);

3 Inclusion of additional wording in the policy to encourage an airspace change promoter to consider compensation for significantly increased overflight as a result of the change based on appropriate metrics, which could be decided upon according to the local circumstances and economics of the change proposal; and

4 Include a requirement of an offer of full insulation to be paid for by the airport for homes within the 69dB LAeq or more contour, where the home owners do not want to move.

4.46 Changing the policy wording to remove the word 'development' would ensure that airspace changes would be taken into account in the same way infrastructure changes are now. This aims to address the lack of clarity with the term 'development' in the APF. It is not currently expected that airspace changes would fall under the definition, creating uncertainty for communities and industry, and potentially meaning that the benefits of an airspace change may not be shared. This option would clarify Government's intention that airspace changes should be included in the compensation policy.

4.47 Changing the policy wording to remove the 3dB change requirement would create a fair and consistent approach to compensation for those newly exposed in the same noise contour. Currently, someone who was impacted at the 61dB level before the change, and is subsequently in a 63dB contour would be treated differently to someone who was in the 59dB contour and is subsequently in the 63dB. In practice, this would mean

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that everyone newly exposed to noise at the 63dB level would be treated in the same way in regards to noise insulation compensation.

4.48 We recognise that the first two changes to policy mentioned in paragraph 4.45 would not in practice apply to many airspace changes. This is because in most cases, there are not usually many people close enough to the airport to be affected by the highest levels of noise. Often, impacts will be felt further from the airport, where noise levels are lower and increased frequency can also be an issue. For this reason it has been suggested that compensation for should be considered communities affected by increased frequency of planes overhead.

4.49 The third proposal is therefore intended to encourage airspace change sponsors to have a flexible approach to compensation, working with communities to establish a fair balance between the economic and environmental impacts of a change. This may be particularly important where the noise assessment and options analysis processes set out in chapter 5 indicate that a concentrated route is the best way to meet noise policy objectives. By using an approach to compensate communities affected by increased frequency of aircraft noise, change sponsors may be able to focus funds where they are needed most in order to limit and where possible reduce the number of people significantly affected by aircraft noise. To determine when compensation for a tier 1 or 2 change may be appropriate, change proposers could consider N- above contours, which measure the number of aircraft noise events per day exceeding a specified noise level, or overflight metrics as discussed in Chapter 5.

4.50 The fourth proposal would enable a home owner experiencing severe noise impacts the option of continuing to live in the same house with the full costs of insulation covered, if they would prefer not to move. Although airports are not currently precluded from making such an offer, current policy states that the minimum which should be offered to those who live in the 69dB contour would be assistance with insulation costs (rather than full costs) if they did not want to move. Latest DfT statistics show there are currently 3,400 people living within this noise contour, the majority of whom are around Heathrow, with the remainder around Gatwick and Manchester. Given that this is a relatively small number, extending the policy to cover those already living within the contour should not entail great financial cost, not least because we would expect most of these houses already to have some level of insulation.

Questions on Chapter 4

Q1. Please provide your views on:

a. the proposed call-in function for the Secretary of State in tier 1 airspace changes and the process which is proposed, including the criteria for the call-in and the details provided in the draft guidance.

b. the proposal that tier 2 airspace changes should be subject to a suitable change process overseen by the Civil Aviation Authority, including the draft guidance and any evidence on costs and benefits.

c. the proposal that tier 3 airspace changes should be subject to a suitable policy on transparency, engagement and consideration of mitigations as set out by the Civil Aviation Authority.

d. the airspace change compensation proposals.

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5. Making Transparent Airspace Change Decisions

Current Situation

5.1 The existing airspace change process has always balanced the factors which must be taken into account under the CAA's duty.[13] This means that decisions have been informed by the needs of all those affected by airspace changes, and the CAA has overseen decisions comprehensively. However, it has not always been easy for those not directly involved in the change to see how decisions have been arrived at, and how the different factors have been weighed against one another. The CAA has already done a lot to address this, including through its new Airspace Change Process, and through publishing their decisions.

Factoring Noise into Airspace Decisions

5.2 When decisions on airspace design and use are made, noise impacts are among the most difficult to assess and communicate effectively. The Government recognises the challenges that industry and the regulator face in being able to engage effectively with communities on the issue and to properly weigh noise considerations against other factors.

5.3 There are three primary policy considerations that inform how noise is taken into account in the design of airspace:

- The Government's policy on how different environmental factors should be balanced – known as the altitude based priorities (ABPs);
- The Government's overall policy on aviation noise (which is discussed in more detail later in this document); and
- The Government's policy on how noise impacts should be distributed – including whether it is better to concentrate noise over a single flight path or to share over multiple routes.

5.4 The ABPs state that noise should be the environmental priority for route design up to 4,000 feet amsl. They go on to say that noise and carbon emissions should be balanced between 4,000-7,000 amsl, and that above 7,000 feet amsl, noise is no longer an environmental priority. See pages 19 to 20 of the draft air navigation guidance for more information. We consider these to remain appropriate.

13 s70 of the Transport Act 2000. Please see Annex A for more detail.

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5.5 The Government's existing policy on concentration, as set out in the 2013 Aviation Policy Framework (APF) is that "in most circumstances, it is desirable to concentrate aircraft along the fewest possible number of specified routes" as is practicable, in order to limit the number of people significantly affected by aircraft noise. The APF went on to state however, that "where there is intensive use of certain routes, and following engagement with local communities, it may be appropriate to explore options for respite which share noise between communities on an equitable basis, provided this does not lead to significant numbers of people newly affected by noise."[14]

5.6 We are revisiting this wording as a result of the changes brought about through the introduction of new navigational technology. With conventional navigation, even when concentrating aircraft over as few routes as possible, there has been a degree of dispersal around the intended flight track. This meant that the effects of noise were shared somewhat among different communities. A key part of airspace modernisation has been the introduction of satellite-orientated Performance Based Navigation (PBN), which means that aircraft can fly their intended route far more accurately than before (see diagram on page 41).

5.7 The increased accuracy of PBN means that it is easier to avoid overflying certain areas and 'thread' routes between populated areas. While this can bring noise benefits, it can also have negative effects for some communities – particularly those closest to PBN flight paths who can experience increased concentration of aircraft. PBN also allows for multiple flight paths to be created that share noise.

14 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/153776/aviation-policy-framework.pdf

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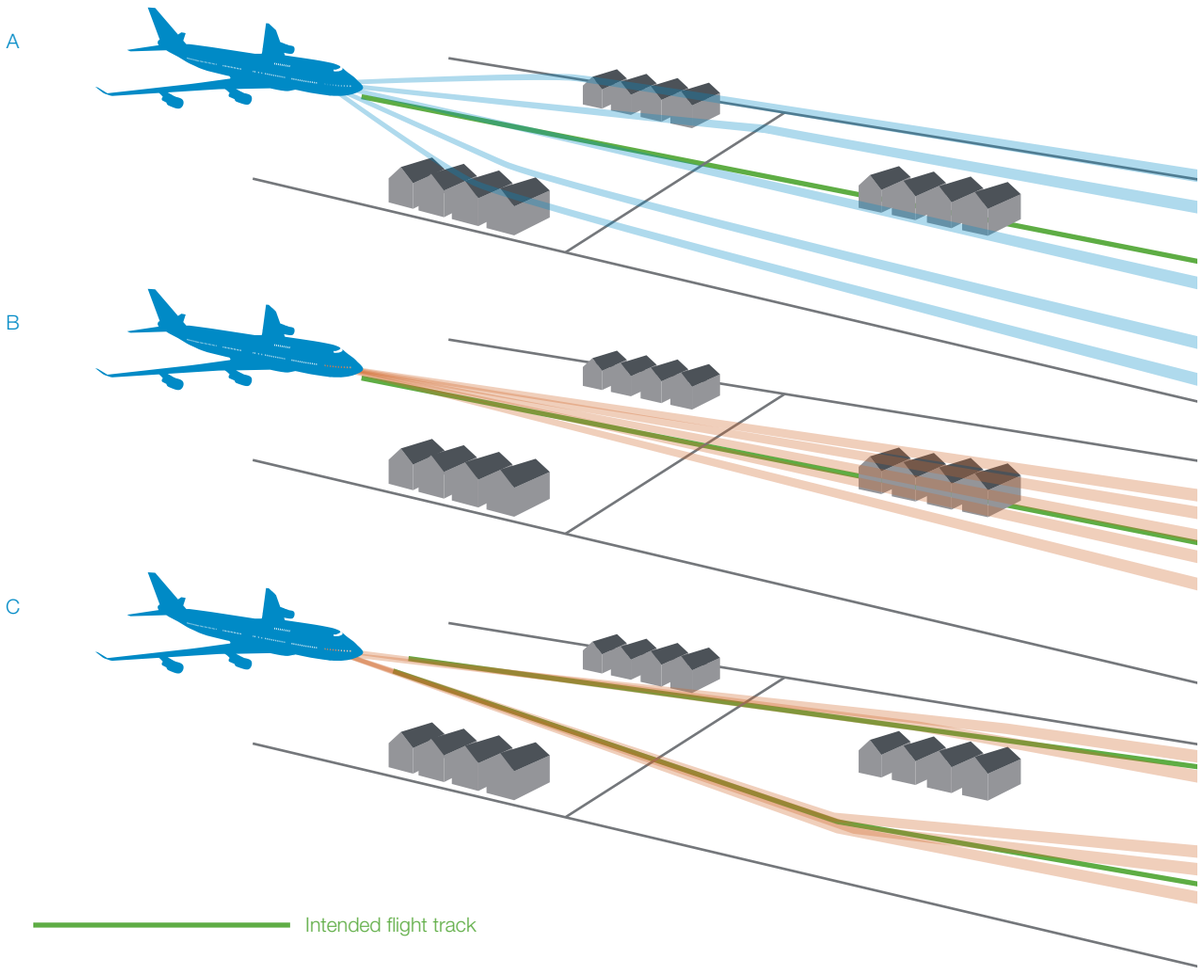
Aviation is moving towards a system that relies on Performance Based Navigation (PBN). PBN is satellite-oriented navigation, and will replace conventional navigation, which uses ground-based beacons. Conventional navigation is significantly less accurate than PBN which means that aircraft naturally disperse, or fan out, when using this technology. With PBN, there is less of this natural dispersal because aircraft are consistently able to follow a flight path very accurately. PBN flight paths therefore produce more concentrated traffic, because every aircraft flying a particular route is likely to be within a very narrow corridor.



A The natural dispersal created by conventional navigation means that aircraft flying a route are within a wide corridor. This means that a wider area is affected overall, but in a less concentrated way. This natural dispersal will not be possible with PBN.

B The increased accuracy of PBN will allow for flight paths to be routed very accurately to avoid impacting communities on the ground as far as possible. However in some cases, communities may be affected by more concentrated traffic.

C In these cases, it may be possible to create multiple concentrated PBN routes that are designed to disperse aircraft to some degree and provide relief or respite to communities exposed to noise. As multiple routes will have to be placed a minimum distance apart to offer a reduction in noise that can be heard, there will be limitations in how many routes it is possible to introduce within a given area without compromising safety or leading to a congested or inefficient airspace.

Performance-Based Navigation

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5.8 Taking into account the challenges and opportunities presented by PBN, as well as calls for greater clarity on how the altitude based priorities can be applied, we recognise there is a need for:

- Greater clarity on Government's approach to whether single or multiple routes are better; and
- A clear framework that allows the pros and cons of different options for route design to be compared against one another.

Analysis

5.9 In many Government and regulatory decisions, including decisions on transport investment, options analysis, following HMT Green Book guidance,[15] is used to show transparently how decisions have been reached and why. It can be used to demonstrate that several options have been thought through in terms of their costs and benefits, and that the one which strikes the best balance has been chosen. Options analysis is considered best practice in decision making, and the Government considers it appropriate for airspace change decisions. We recognise that in practice, options analysis has been taking place already in airspace change, but the discounted options may not always be presented in consultation and our view is that there are ways to improve transparency.

5.10 The Department for Transport publishes formal guidance on appraising transport schemes, known as WebTAG.[16] This is a peer reviewed, transparent and regularly updated toolkit which allows transport schemes to be assessed on an even basis, in both qualitative and monetary terms. It provides advice on best practice, as well as spreadsheet tools to assess impacts including aircraft noise and their effects on local communities.

Factoring Noise into Airspace Decisions

5.11 Options analysis would be an important tool in showing that noise has been properly taken into account in airspace decisions, including that the environmental factors have been accounted for according to the altitude based priorities. In order for noise to be factored into options analysis, there would need to be appropriate ways to assess noise impacts. We discuss this in more detail further on in this Chapter.

5.12 One of the key decisions that options analysis can assist with is whether single or multiple routes are appropriate. This is because the Government's view is that local circumstances and engagement should inform decisions on how noise can best be distributed and whether single or multiple routes are better in a given situation. For noise, single and multiple routes both have costs and benefits associated with them (see Figure on pages 43 & 44). A single route will tend to expose fewer people to noise compared to multiple routes. It may mean, however, that those people are exposed to higher levels of noise where there is a greater risk of adverse effects. Options analysis will be a mechanism for weighing up the costs and benefits of single and multiple routes.

15 See https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent

16 See https://www.gov.uk/guidance/transport-analysis-guidance-webtag

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Options for route design

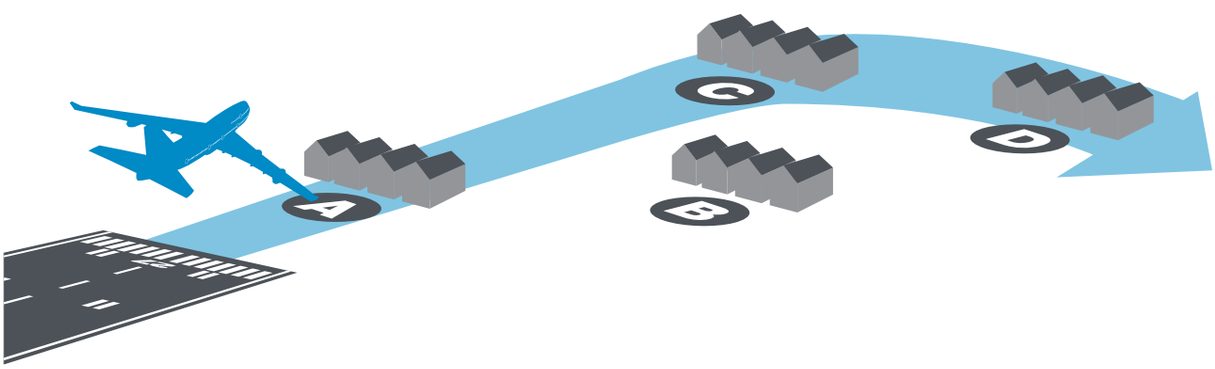
There are lots of different factors that need to be taken into account when a decision is made on airspace change, including on whether there should be single or multiple routes. Even in terms of just noise, there will be lots of trade-offs involved with deciding whether new flight paths should be concentrated over as few routes as possible, or whether multiple routes should be used to share noise amongst communities.

The three hypothetical scenarios below illustrate how there are different options for new flight paths, that will mean some communities may benefit from a reduction in noise from changes to airspace, while others will experience no change or experience new noise. Given these complexities and different local factors that will exist in each situation, how the noise impacts of airspace changes are distributed among communities is a decision that communities themselves should be engaged in.

If multiple routes are chosen, the exact mechanisms for how relief or respite could be offered to communities should ideally be agreed locally. The options for multiple flight paths illustrated below in options 2 and 3 might either operate on alternating days, or for alternating departures on the same day. Options to do this will be constrained by both the amount of airspace available in an area – due to safety purposes for instance, and also by the distance routes would need to be from one another to actually offer noticeable respite.

The scenario below is based on three hypothetical options for replacing a conventional navigation departure route with PBN departure routes and illustrates the difficult choices about who experiences more noise and who experiences less.

Option 1 for a single concentrated PBN departure route, replicating the conventional navigation flight path.



Communities A, C and D are under a concentrated flight path which is used by 100 planes a day. As these are now PBN routes they will be less dispersed than they previously were meaning those directly under the flight path would be expected to experience more noise than before.

Community B is situated away from the flight path, and while closer to the airport than communities C and D, they are not directly overflown by any aircraft, but may still experience some noise from aircraft.

Options for route design

Diagram continues overleaf.

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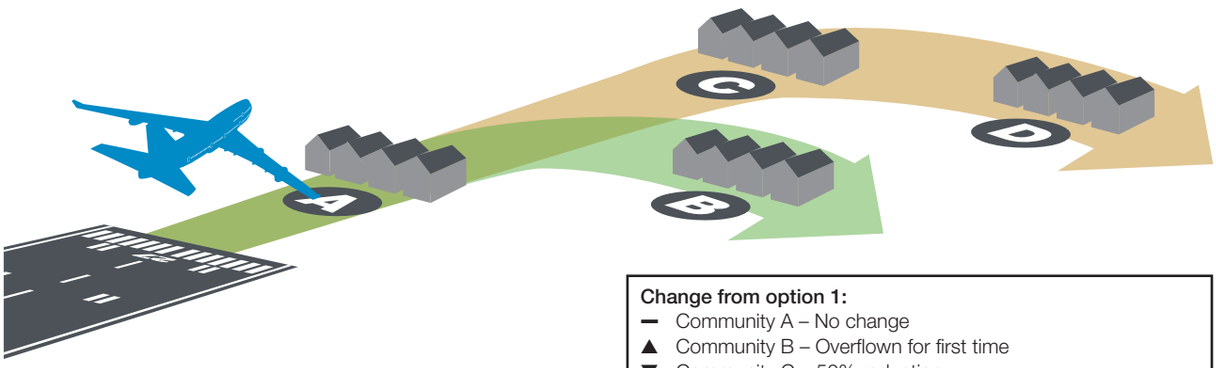
Option 2 for multiple concentrated PBN departure routes that affect new communities



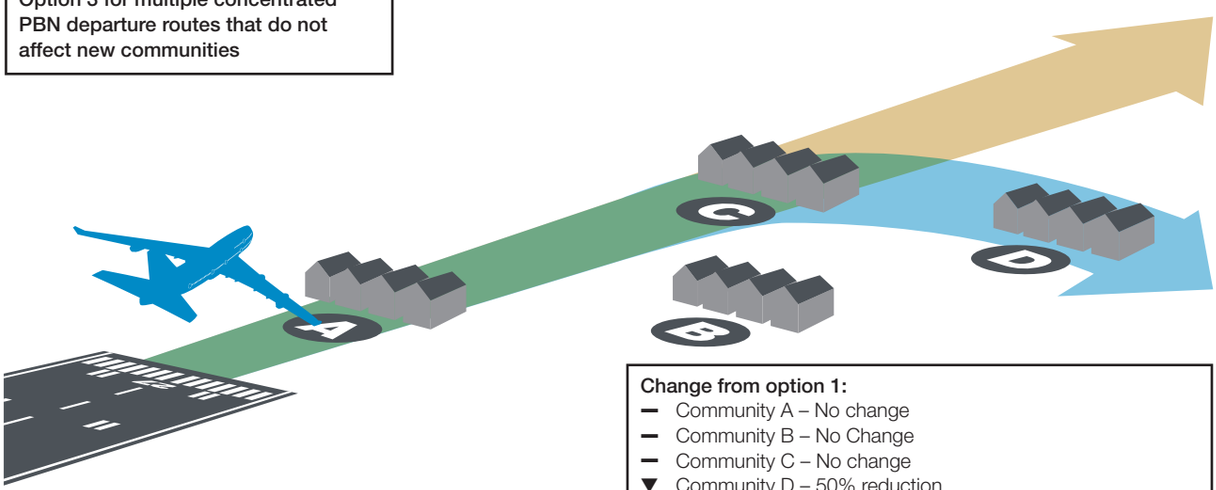
Change from option 1:
- — Community A – No change
- ▲ Community B – Overflown for first time
- ▼ Community C – 50% reduction
- ▼ Community D – 50% reduction

Given how close Community A is to the airport, multiple routes cannot be placed far enough so 100 planes will still use this route and will be more concentrated than under the previous conventional navigation departure routes.

Communities C and D will now experience 50 fewer flights using the route above them than they previously did, though these too will be more concentrated.

However Community B, who were never previously directly underneath a route, will now experience 50 flights a day using the route above them. As they are closer to the airport than communities C and D, these flights could be at lower heights and therefore noisier than those experience by Communities C and D.

Option 3 for multiple concentrated PBN departure routes that do not affect new communities



Change from option 1:
- — Community A – No change
- — Community B – No Change
- — Community C – No change
- ▼ Community D – 50% reduction

The route above Community A will still be used by 100 planes as it is not possible to avoid them.

Unlike in Option 2, Community C is still overflown to the same extent as in Option 1 and in a more concentrated manner than with the conventional navigation departure route.

To continue to avoid Community B, both routes still pass over Community C before they separate and flight path 2 moves away from Community D, who benefit from 50 fewer flights than in Option 1.

Options for route design

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5.13 Our noise policy is to limit, and where possible, reduce the number of people significantly affected by aircraft noise. To be consistent with this, priority should be given to reducing significant impacts rather than the number of people who will experience some aircraft noise. Therefore from a noise perspective, it will on occasions be better to have multiple concentrated routes that share noise among more people, than a single concentrated route which affects fewer people to a greater extent, providing large numbers of people are not exposed to aircraft noise for the first time.

5.14 Rather than a one size fits all approach to whether single or multiple routes are better, change proposers must consider the impacts of different options and decide what will work better in a given situation. These decisions should be informed by:

- Robust assessment of noise impacts; and
- Engagement with communities, including during the new design principles stage of the CAA's change process and during consultation.

5.15 We do not want to set hard thresholds or be over-prescriptive on when certain options should be considered – especially as some solutions may not be possible due to the other factors that need to be taken into account. Instead, we want there to be flexibility for options to be developed that take account of the needs of communities, while ensuring the CAA and airspace change sponsors know what is expected of them.

5.16 The advantages of single or multiple routes can also differ depending on the type of change that is being made:

- Concentrated routes will often be preferable from a noise perspective for airspace changes below 4,000 feet amsl. This will tend to limit the number of people exposed to higher noise levels where there are stronger associations with adverse effects on health and quality of life. When it is possible to route at this level over areas of low population, it can avoid affecting new people and allow the industry to focus mitigation and potentially compensation measures on the areas where it is most needed; and
- For changes above this height, noise levels will generally be lower, but the effects of change and concentration can be keenly felt. This is because aircraft have typically been more dispersed at these levels, due to vectoring. Therefore, greater consideration should be given to how aircraft are distributed further from the airport when designing routes, as options in which it is feasible to provide relief or respite may be beneficial in these instances. We discuss suitable metrics for assessing the frequency of noise events in the next section.

5.17 In all instances, the impacts on efficiency or other environmental factors will need to inform decisions and there will be limitations as to what can be achieved in terms of noise:

- In some cases, concentrated flight paths will never be fully able to avoid all communities or populated areas;
- The finite amount of airspace may mean multiple concentrated routes cannot be situated far enough from one another to offer perceptible relief or respite from noise; and
- Multiple concentrated routes could result in large numbers of new people being affected.

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5.18 This discussion relates primarily to options for departure flight paths. For arrivals, aircraft will always have to be aligned with the runway at the minimum safe distance which may limit the options available for route designs. There may however be opportunities to vary where an aircraft joins the final approach that could share noise to some extent. The future systemisation of airspace and new technology over the coming years may also allow new opportunities for sharing noise or better avoiding populated areas – for both arrivals and departures.

Proposal

5.19 We propose that options analysis should be carried out as part of change processes for airspace, as appropriate. This options analysis would allow communities to understand the options which have been considered, and the evidence that has informed a decision, including on whether single or multiple routes are appropriate in the circumstances. It would bring the appraisal of airspace changes in line with those for Government decisions on transport investment, including airport infrastructure. Options analysis will demonstrate an objective approach, and thereby ensure that the needs of different groups have been treated equally. This is particularly important when some groups are more able to engage with the change process than others. For example, when communities from different socio-economic groups or backgrounds are affected by an airspace change, some groups may have more time and ability to feed in their views than others.

5.20 Decisions on how aircraft noise is best distributed should be informed by local circumstances and consideration of different options. 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 provide relief or respite from noise.

5.21 Alongside noise impacts, assessment should also consider the impacts on carbon and air quality and explain how these have been balanced in line with the altitude-based priorities. There is also safety, and non-environmental factors such as, efficiency and impacts on other airspace users that will inform the eventual decision on which option is chosen. Single and multiple routes also have costs and benefits for these factors. For example multiple routes may mean it is not possible for aircraft to take the most efficient route, leading to increased fuel consumption. Alternatively multiple routes could offer greater resilience, or allow more aircraft to travel on a more efficient route to their destination.

5.22 The CAA should build this into its change processes, in line with guidance issued by the Government. They should publish an environmental statement with each of their decisions to further improve transparency. The CAA's Airspace Design Guidance[17] will also help sponsors and communities to understand some of these trade-offs associated with different options, as well as the technical capabilities of PBN, and should be used to inform the development of route options.

5.23 The guidance which accompanies this consultation document gives further details of how options analysis should be carried out to inform airspace change decisions.

17 CAP 1378 Airspace Design Guidance: Noise mitigation considerations when designing PBN departure and arrival procedures

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Assessing Aviation Noise

Current Situation

5.24 The Government's overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise as part of a policy of sharing benefits of noise reduction with industry. Feedback from stakeholders has suggested that the meaning of this policy is not always clear – especially the meaning of 'sharing benefits' and 'significantly affected'.

5.25 The Government currently considers a daytime aviation noise level of 57 dB LAeq 16hr[18] as marking the approximate onset of significant community annoyance. There are several issues with our use of this definition:

- This value is based on evidence dating back to the 1980s;
- There has been confusion as to whether our definition means that we only consider significant effects to occur above that level, and therefore whether the interests of those impacted below this threshold are deprioritised. It has also been misunderstood to imply that all people are significantly affected above this level of noise exposure;
- The focus on annoyance has led to criticism that health impacts are being overlooked; and
- It may encourage options for airspace design which prioritise reducing the number of people within the 57dB LAeq 16hr contour, even if it means those within it are affected to a greater extent by concentrating noise impacts on a smaller population.

Analysis

5.26 Our view is that our existing policy remains the correct aspiration. It is consistent with wider noise policy, and aims to balance economic, social and environmental priorities, which include noise impacts. However, we recognise that for the policy to be effective, we should set a clearer direction on how it should inform decisions so that the needs of communities affected by aircraft noise are properly taken into account, especially when it comes to airspace design.

5.27 First, we wish to clarify that sharing the benefits of noise reduction means sharing between industry and communities in support of sustainable development. We will therefore use this wording in the future.

5.28 We wish to be clear that our objectives in limiting and where possible reducing the number of people significantly affected by aircraft noise are to:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.

5.29 It is important that noise is properly taken into account along with the various other factors that need to be considered in options analysis for airspace change. But noise impacts are among the most difficult to assess and communicate effectively because of their technical nature. The Government recognises the challenges that industry and the regulator face in being able to engage effectively with communities on the issue and

18 See glossary for explanation of db LAeq.

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to properly weigh noise considerations against other factors. So we have considered how we can assist in improving the quality of noise data and how it is used in decision making.

5.30 In this context, and in light of the issues raised above with the use of the 57 dB LAeq 16hr contour, we recognise the need to define what we mean by levels of noise exposure which affect people significantly. There is also a need for a range of tools to use in assessing noise impacts so that the objectives above can be pursued when industry bring forward plans to change airspace and manage noise. We have examined a range of evidence sources in order to inform guidance on what levels of noise exposure should be considered significant and how noise impacts can be properly assessed.

Assessing the Adverse Effects of Aviation Noise

5.31 In recent years, evidence has emerged on the link between exposure to noise from all sources and chronic health outcomes. These include an increased risk of heart attacks, hypertension – which is a risk factor for stroke and dementia – as well as the risk associated with sleep disturbance.

5.32 Annoyance from aircraft noise is also believed to act as a risk factor for some of these health outcomes. Research has shown that it is possible to predict the likelihood of an individual or community experiencing significant impacts such as these as a result of different levels of aircraft noise exposure.

5.33 Noise can also impact quality of life. Quality of life is a difficult term to define, but can be considered as a subjective measure that refers to people's emotional, social and physical wellbeing. The effects of noise on quality of life can be small changes in behaviour such as occasionally turning up the volume of the television or speaking more loudly. Significant impacts on quality of life are those that cause larger changes in behaviour, such as having to keep windows closed at all times, or that prevent people enjoying the outdoors and natural environment. Research has shown that the effect of noise on quality of life at certain levels of noise exposure varies widely across the population and not everyone is affected in the same way.

5.34 In 2014 the Government commissioned a Survey of Noise Attitudes (SoNA) to investigate attitudes towards aviation noise and whether these have changed over the years. The results of this study have been published by the CAA[19]. It should be noted that SoNA's findings relate to quality of life effects described by annoyance and consequently for health impacts it only considers self-reported health ratings compared to noise exposure and reported annoyance. Within that context, SoNA suggests that:

- Some adverse effects of annoyance can be seen to occur down to 51dB LAeq 16hr; and
- Sensitivity to aircraft noise has increased, with the same percentage of people being highly annoyed at 54dB LAeq 16hr in SoNA as there was at 57dB LAeq 16hr in a past study that influenced aviation noise policy.

5.35 For night time noise, the World Health Organisation, in their 2009 Night Noise Guidelines for Europe, note that effects start to be witnessed as low as 40 dB Lnight. Furthermore, the Guidelines stated that above 55 dB Lnight, the situation is considered increasingly dangerous for public health.

19 http://www.caa.co.uk/cap1506

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Using a risk-based approach to noise assessment

5.36 In addition to the concept of significant community annoyance, the following terms have been used to refer to different levels of effects associated with noise, following the publication of the Noise Policy Statement for England:[20]

- NOEL – No Observed Effect Level: This is the level below which there is no detectable effect on health and quality of life due to the noise. In most situations, this is broadly the level at which noise is audible;
- LOAEL – Lowest Observed Adverse Effect Level: This is the level above which adverse effects on health and quality of life can be detected;
- SOAEL – Significant Observed Adverse Effect Level: This is the level above which significant adverse effects on health and quality of life occur.

5.37 Research has shown, however, that it is still difficult to set a level at which all people will experience an adverse effect, as this will be determined by many individual factors including the number and pattern of the aircraft they hear or if they have recently experienced a change in noise levels. Therefore, with regards to quality of life effects such as annoyance, it is not always possible to characterise the effect on an individual with a single indicator. However, a single value can be used to determine a LOAEL for a whole community.

5.38 Setting a LOAEL in this way allows the adoption of a risk-based approach to assessing aircraft noise. The advantage of such an approach is that it accounts for the subjective nature of how noise is experienced differently by individuals. This allows the risk of a person being significantly affected by noise at different levels to be properly reflected, rather than simply saying that at a given level of exposure, all people will or will not be significantly affected.

5.39 The LOAEL can therefore be regarded as the point at which adverse effects begin to be seen on a community basis. At any noise level above the LOAEL, there will be a proportion of the population adversely affected. As noise increases further above the LOAEL, there will be an increased risk that someone will suffer significant adverse effects. 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. The SOAEL is the point at which the average person would be expected to begin to experience significant adverse impacts on health and quality of life. The diagram below explains this concept in more detail.

20 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf

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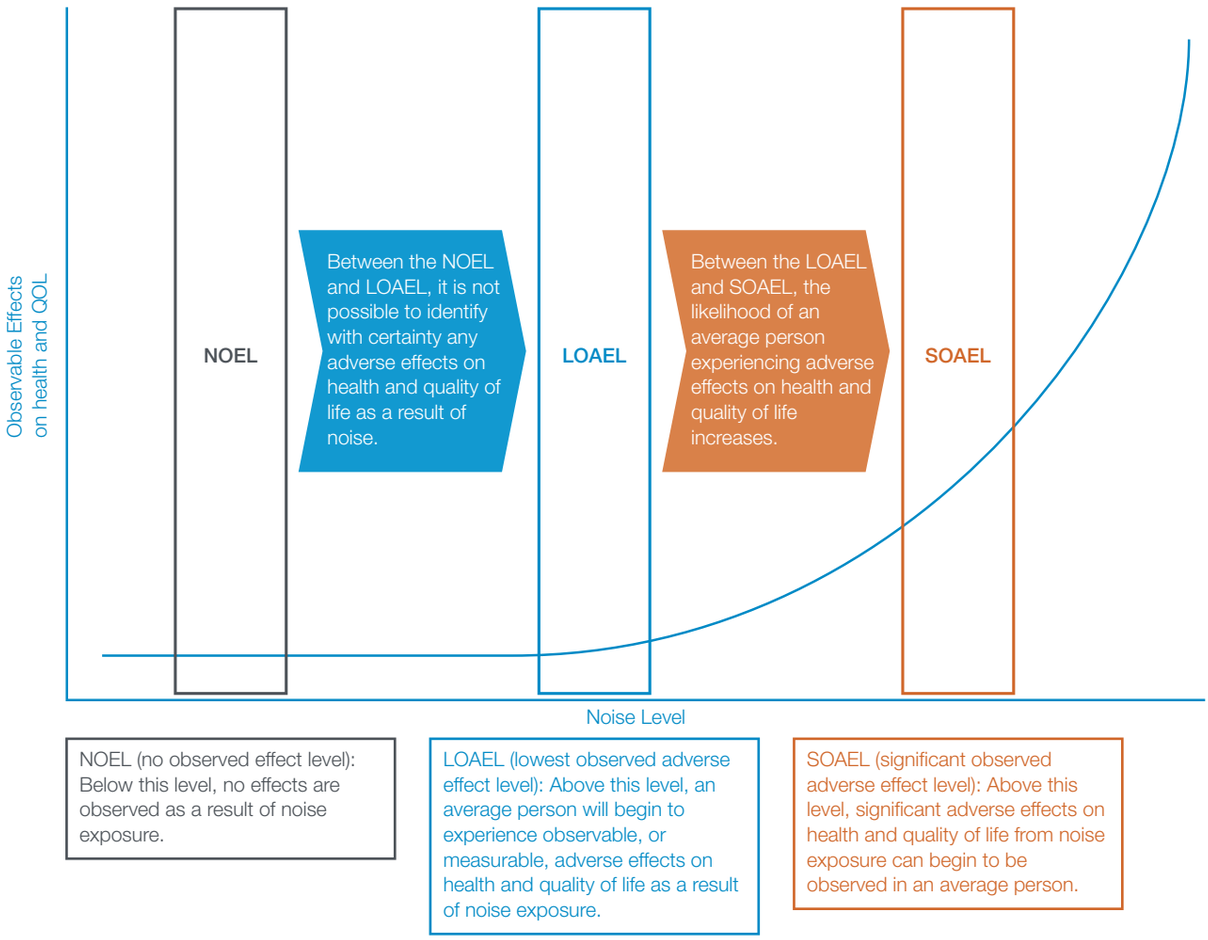

Observable noise impacts

5.40 Using this risk profiling approach, it is possible to predict the expected proportion of the population likely to be significantly affected by a certain noise exposure. Further, these effects can be quantified in terms of the costs of adverse impacts on health and quality of life. This means that it is possible to generate an estimation of the costs associated with a population experiencing a particular level of noise exposure.

5.41 WebTAG (see textbox on the following page) includes a module for assessing the impacts of noise,[21] including specifically from aviation, on health and quality of life. This allows decisions on transport schemes to take account of the costs and benefits of different options with regards to noise.

5.42 WebTAG can provide a monetised value for the impact of changes in noise exposure, based on Disability Adjusted Life Years (DALYs).[22]

21 WebTAG noise unit A3, available at: https://www.gov.uk/government/publications/webtag-tag-unit-a3-environmental-impact-appraisal-december-2015

22 One DALY can be thought of as one lost year of "healthy" life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability. http://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/

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WebTAG is the Department for Transport's guidance on appraising transport schemes. TAG Unit A3 includes an approach to analysing the possible health effects associated with aviation noise, based on WHO guidance and research reports from Defra and the Interdepartmental Group on Costs and Benefits (Noise). There is also an appraisal process for taking account of new evidence and incorporating it into the webTAG methodology. This means that the tool remains up to date with the latest evidence.

WebTAG considers the following impacts with relation to noise on health and quality of life:

- Sleep disturbance
- Amenity/annoyance (used interchangeably in this context)
- Acute myocardial infraction (AMI)
- Hypertension, through increased risk of stroke and dementia

Assessing the frequency of aircraft noise occurrences

5.43 As explained above, a small number of people may consider themselves adversely affected by aircraft noise at levels below the LOAEL. Reactions to recent airspace changes and trials have clearly indicated that increases in the number of aircraft that people are exposed to can be noticeable and can annoy individuals, even at a noise exposure below 51dB LAeq 16hr. We have therefore considered which additional metrics for assessing aviation noise could be included in our guidance.

5.44 N-above metrics have been suggested as a way to 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. This metric is often used to assess the impact of noise at night as 60 dBA corresponds to an indoor noise level of approximately 45 dBA and the WHO 1999 Guidelines for Community Noise recommend that individual noise events at night exceeding 45 dBA should be avoided[23].

5.45 There is insufficient evidence to link chronic outcomes on health with event-based noise metrics, and SoNA 2014 found these performed less well than LAeq 16hr as a predictor of annoyance. However the findings from SoNA do suggest it may be appropriate to use N65 as supplementary measure for daytime noise, which is recorded more often than N70 in areas with lower levels of noise exposure, as a metric to help understand the impact on those who will be affected by an airspace change. It also may help those who are affected to understand the impacts of proposals.

5.46 As well as N-above metrics, the CAA has proposed a definition of 'overflight' which is based on whether an individual will perceive an aircraft as overflying them.[24] This offers the opportunity to take account of overflight as it is actually experienced by those on the ground, including those outside of traditional noise contour areas – better reflecting the number of times an individual will feel like they have been overflown. It can therefore be used to explore the differences between different airspace arrangements, such as those based on single and multiple route options.

23 World Health Organisation. WHO Guidelines for Community Noise (1999) http://www.who.int/docstore/peh/noise/guidelines2.html
24 www.caa.co.uk/CAP1498

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Proposals

Assessing Adverse Effects of Aviation Noise

5.47 Our intention is to provide further guidance on our aviation noise policy in order to be clear about how it should inform decisions on airspace design and use. We want industry to be confident on how they go about complying with the policy, and we want communities to understand how noise has been assessed in decisions. We believe it is important for noise assessment to clearly relate to the real-life impacts of noise exposure.

5.48 We propose that our policy should be interpreted to mean that the number of people experiencing adverse effects as a result of aviation noise should be limited and, where possible, reduced. Adverse effects are considered to be those related to health and quality of life. These adverse effects should be assessed using a risk-based approach above the LOAEL, using webTAG. This is consistent with the approach endorsed by the World Health Organisation's methodological guidance for estimating the burden of disease from environmental noise.[25] It will ensure that effects on health and wellbeing can be assessed objectively, meaning that different people affected by a change can be shown to have been treated equally.

5.49 So that the potential adverse effects of any airspace change can be properly assessed, we propose that 51 dB LAeq 16hr should be regarded as the LOAEL for daytime noise. We also propose that a LOAEL of 45 dB Lnight should be set for assessing the impact of aviation noise during the night, in line with current webTAG methodology and consistent with the WHO 'Methodological guidance for estimating the burden of disease from environmental noise'. This will ensure that wherever it is possible to quantify noise impacts, they inform options for airspace structure and use.

5.50 A major advantage of this system would be in the development of airspace changes. Use of the risk-based noise assessment outlined above will allow options for airspace change to be compared quantitatively against each other, in terms of noise performance. We discuss how noise assessments can be used to inform options analysis in the following section.

Assessing the frequency of aircraft noise occurrences

5.51 To take account of people who may be significantly affected by aviation noise at levels that do not exceed the LOAEL, we propose to supplement the risk-based approach with guidance on metrics which can be used to assess the frequency of noise events. This will enable frequency to be one of the factors taken into account when airspace decisions are made. We propose that the CAA's metric for overflights should be used for this purpose as a means of understanding and explaining how noise will be experienced by those on the ground and that for night noise, N65 daytime and N60 night time metrics should also be used.

5.52 In general, we believe that different metrics, including those to assess frequency, can be useful for enabling communities to understand changes that are being proposed and allowing them to engage meaningfully in the change process. So it is useful for industry to use a range of appropriate metrics to communicate noise impacts. In particular, it will be useful for the frequency of overflight to be assessed when it comes to deciding whether or not it is beneficial to design multiple routes in order to disperse aircraft traffic.

25 Low exposure levels (Lnight < 45 dB(A)) were excluded from the analyses that contributed to their report, 'Burden of disease from environmental noise' because it was deemed 'the assessment of those noise levels was relatively inaccurate and other sources may be more important in situations with these low levels. http://www.who.int/quantifying_ehimpacts/publications/e94888/en/

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5.53 Draft guidance on our proposals has been published alongside this consultation document. Page 21 of that guidance deals with noise assessment. Guidance on the appraisal of airspace change proposals will be available on webTAG[26] in due course.

Questions on Chapter 5
Q2. Please provide your views on: **a. the proposal to require options analysis in airspace change processes, as appropriate, including details provided in the draft guidance.** **b. the proposal for assessing the impacts of noise, including on health and quality of life. Please provide any comments on the proposed metrics and process, including details provided in the draft guidance.**

26 https://www.gov.uk/guidance/transport-analysis-guidance-webtag

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6. Independent Commission on Civil Aviation Noise

Current Situation

6.1 In support of our policy objectives, the Government wishes to create a system for the design and regulation of airspace and noise which promotes effective local engagement and locally-informed decision making. Having the right decision-making structures in place, and a framework for good use of noise data are important steps towards our vision. However, if this new system is to work effectively, we recognise that there are gaps which need to be filled to improve trust and promote the consistent use of best practice.

Analysis

6.2 It is in the interests of industry to have a positive relationship with local communities and many UK airports have stable and productive relationships with their neighbours. But the Airports Commission's engagement and findings from recent experience at airports where changes or trials have taken place have shown that trust between communities and airports can easily be lost. It is clear that tensions are highly likely to arise when airport operations change or intensify in a way which changes how local communities experience noise impacts on the ground. It is therefore appropriate to consider how to manage airspace changes in a way which builds trust in the processes including ensuring a transparent and well informed way to make decisions.

6.3 We will therefore establish an Independent Commission on Civil Aviation Noise. We see the following as success criteria for the body:

- It establishes a credible and authoritative voice on aviation noise issues;
- Communities have and feel they have a greater stake in any process which proposes to make noise changes;
- Processes which change aviation noise impacts better and more transparently balance the needs of all parties, thereby making these processes fairer and less adversarial;
- Greater public confidence in the noise data published by the aviation industry and in the impartiality of the airspace change process;
- Industry is challenged to enhance its approach where necessary on assessing and mitigating noise impacts and engaging with communities;
- Improved relations and trust underpin local decision making on noise controls; and

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- The SofS is effectively supported in his role with regards to noise within strategically significant decisions.

6.4 It is important to note that ICCAN's Terms of Reference should make it very clear that it should not have a role in representing the interests any particular group. This is because the body's objectives are not to act as a lobby group or to oppose changes. Rather, it should have a role in facilitating industry and communities to communicate effectively with one another in order to reach balanced decisions and to provide expertise on noise management.

Structure and Governance

6.5 In establishing an ICCAN capable of delivering on the objectives outlined above, Government recognises that independence, credibility and accountability will be key. Timing is also a priority, as there will soon be live issues, such as the planning process for Heathrow's proposed third runway, should the Government's proposed National Policy Statement be adopted, and the urgent need for airspace modernisation. ICCAN could have a positive impact on these, and we wish to see the influence taking effect as quickly as possible. Proposals to establish ICCAN must also be considered in the context of wider Government policy of reducing spending and ensuring efficiency.

6.6 In addition to noise expertise, ICCAN would need access to a range of specialist skills to function effectively. We therefore anticipate ICCAN needing to attract good noise advisors, highly skilled communication and engagement experts, as well as a strong figurehead with excellent leadership skills for the Head Commissioner role itself. The Head Commissioner and ICCAN board do not need to be noise experts, as they can learn about noise impacts and management techniques as they progress and will have a strong secretariat and expert panel to guide them. The main characteristics of the Head Commissioner will be neutrality, strong leadership, effective communication skills and open mindedness to all sides of the issues ICCAN will face. ICCAN will also need the support of a secretariat and administrative functions.

6.7 The Government has considered several options to achieve the intended benefits of ICCAN when they are most needed i.e. to provide an independent voice on noise matters at the same time as to advise on airport development and airspace modernisation in the near future:

- A non-departmental public body established by the Department for Transport: This would have advantages in terms of greater independence in delivering its functions, with clear accountability for its use of public funds. It may however require legislation to create and would be more costly in comparison to adding functions to an existing body. It may also take longer to set-up than any of our other options described here and be challenging for a small body to attract the necessary people and expertise;
- An Expert or Advisory Committee of the Department for Transport: This model would be comparatively easy to set up and benefit from economies of scale for administrative functions. It could be supported by contracted CAA expert resource. However, it may be more difficult to demonstrate independence from Government if the body is both Government-funded and sitting within a Government department;
- Adding to the existing functions of an existing non-departmental public body: There are limited options which meet the necessary criteria for adding to functions within an existing NDPB. It would need to have the authority to do the work in the whole of the UK, as airspace is a reserved matter. It would also need to be able to give adequate

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priority to such a high profile function relative to the body's existing functions and noise would need to be a complementary function to its current remit; and

- A separate legal entity attached to an existing non-governmental body: As with adding to the existing functions of an NDPB, there are limited options which meet the necessary criteria. It would need to have the authority to do the work in the whole of the UK, as airspace is a reserved matter. If the funding, appointments and Terms of Reference of ICCAN were controlled by the Secretary of State, it is likely that the new body would itself need to be treated as a function of central government. In this instance, to avoid conflicts with the interests of the parent body in the way it is governed and accounts for its use of public funds, it would be necessary to ensure that routes for the flow of funding and accountability comply with Government controls on the existence of public bodies and the use of public money.

6.8 The primary purpose of ICCAN is to help rebuild the trust lost in industry by communities and to advise on upcoming airspace and infrastructure changes. If ICCAN is successful, ultimately there may be little need for a separate entity to continue some of its functions in future years. Any functions that would need to continue once trust is rebuilt could be transferred to a body that currently exists. This should be a consideration, since it is good practice to set review periods to look at objectives and success and ICCAN should be no exception.

6.9 Given the potentially time limited nature of our proposal, ICCAN should be funded via public funds. The benefit of using public funds is that ICCAN can be set up relatively quickly while maintaining independence from industry. Cost recovery was a consideration but would require legislation, which would be impractical in the short term.

Proposals

Functions

6.10 We propose that in order to achieve the success criteria above, ICCAN should have functions in the activities set out in the table below. For each of these activities, we expect that ICCAN would:

- Advise on the best noise management techniques;
- Advise on the accessibility of noise information, making communities better placed to engage and comment on proposals;
- Verify noise forecasts and noise data; and
- Influence proposals through best practice guidance.

Activity	ICCAN Role
Airspace change	• Respond to all formal airspace consultations to advise that the most appropriate and best available noise mitigations have been considered appropriately. ICCAN would not choose between different route options. This is because there would be other non-noise factors at play such as safety and efficiency, and these also need to be taken into account when deciding on a best option. • Where a change sponsor has deviated from ICCAN advice on any noise management techniques, the sponsor should describe their reasoning behind their decision not to follow the advice. The CAA would take into account any relevant ICCAN advice in its environmental assessment, and in doing so, can decide on whether a change sponsor's reasoning for deviating from the advice is justified. • If the proposal in Chapter 4 is taken forward, an airspace change decision could be called-in by the Secretary of State. If a decision were to be called in under the proposed new system ICCAN would give any expert advice required. • Consulted as part of the CAA's Post-Implementation Review process following a change taking place e.g. to assess the outcomes of any noise mitigations.

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Planning and Ongoing Noise Management	• Advise airports and relevant competent authorities in the process to agree operating restrictions including advising the competent authority whether they consider the ICAO balanced approach to have been followed. • As an example, ICCAN should have a role in advising on the design of noise envelopes (see glossary) where one is being developed, such as has been suggested at Heathrow for the proposed new northwest runway. • Advise local authorities when requested when they are considering noise implications of an airport's planning application. • Provide input to planning inquiries relating to airport infrastructure as appropriate.

6.11 Outside of ICCAN's roles in these particular activities, we propose that they have broad functions that would help to improve relationships and drive up standards across the board.

6.12 **Best Practice** – ICCAN should publish and promote best practice guidance including on noise management, engagement on noise issues, use of enforcement tools, and the role of conciliation in disputes. Best practice should be produced in a manner which allows for local circumstances to be taken into account, and should not create onerous demands on airports that already demonstrate good noise management practice. As the CAA also develops best practice in many areas of aviation, the two should work together to ensure their work is complementary. ICCAN should also propose further areas where it may be beneficial for the CAA to use its information powers to encourage transparency and to drive improvements. For example, through the publication of airline statistics on noise related matters. The development of best practice will be instrumental in helping to increase industry's awareness and drive improvement in their behaviours on noise impacts.

6.13 **Research** – ICCAN should review recent research and where gaps in evidence exist, undertake or commission independent research, collaborating with and learning from others where possible. This could include evidence on the best means of monitoring and reporting aircraft noise, as well as its association with annoyance and impacts upon human health and possible mitigation measures.

6.14 **Monitoring and Quality Assurance** – ICCAN should work to monitor and quality assure airports' noise measurements and reporting. This would help to re-gain lost trust between communities and airports and improve the credibility and transparent nature of the information. In many cases current voluntary or required practices could benefit from an independent review. A good example of when this may be useful is when airports create plans to manage noise at the local level. As the current noise information is compiled and published by the airport, if communities do not trust it, there could be a lack of trust in the information and the plan could be undermined. ICCAN would be able to quality assure the information that will be used and published to ensure it is fit for purpose and follows best practice.

6.15 Our view is that the functions outlined above are the right ones to allow ICCAN to address the issues identified; namely, issues around trust and consistency in the standards of noise management. These functions complement the rest of the package outlined in this consultation, for example the emphasis we have placed on industry's obligations to manage noise effectively and the broad role we have described for the CAA.

6.16 With ICCAN advising on best practice in the use of compliance mechanisms as discussed in Chapter 7, and with the CAA as the UK's independent regulator of airspace, there will be the right incentives and mechanisms for industry to effectively

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manage their noise impacts. This means that ICCAN would be working with industry and communities to develop and promote best practice in noise management and the use of compliance tools. We believe that compliance activities other than developing best practice on the subject would potentially conflict with this work to drive up standards through collaboration, and so enforcement activities should continue where they already exist. Also, as ICCAN's remit would be limited to noise, they would not be best placed to investigate breaches. This requires a broad understanding of the context for individual breaches, such as safety and air navigation matters, to ensure that decisions take into account all factors. We discuss the enforcement mechanisms available, and the advisory role of the CAA in Chapter 7 and at Annex E.

6.17 ICCAN's role in change processes should apply whenever a change is proposed which is subject to the CAA's approval i.e. tier 1 and 2 airspace changes, including smaller aerodromes (for example leisure and business jet airports). Also, although it will focus on larger aerodromes for its other functions, as that is where the most severe noise impacts are felt, smaller aerodromes should consider how they could apply the best practice disseminated by ICCAN. ICCAN should not be responsible for advising the Ministry of Defence (MoD) on noise impacts from military flights, but the MoD may wish to consider the best practice developed by ICCAN and use it where appropriate.

Structure and Governance

6.18 The Government's lead option is to establish ICCAN as an independent body within the CAA. The major advantages to ICCAN being attached to the CAA would be faster set-up and economies of scale for a small organisation. A further advantage is that highly technical aviation noise expertise already exists in the CAA and by moving much of that expertise to ICCAN, it would be well placed for quick and relatively easy operation. Under ICCAN's independent leadership, this would allow those experts to focus on the objectives of ICCAN and build up its knowledge base quickly and efficiently.

6.19 If we were to pursue this route of establishing ICCAN, we recognise the expectation that ICCAN should be able to function independently from the CAA if it is to be successful in building trust, so have examined governance models which could achieve this. We would therefore propose to direct the CAA under our legislative powers to establish ICCAN as a separate legal entity. In order to ensure the necessary independence from the CAA yet still work towards the objectives of ICCAN, we propose that the Secretary of State would set Terms of Reference, establish the appointment process for the Commissioner and Board members of ICCAN, and agree its funding. To maintain credibility however, it would be up to ICCAN's Board to set a yearly work programme based on the Terms of Reference and its agreed funding.

6.20 For public accounting purposes it is likely that a new body established in this way would be classified as a function of central Government, this may require bespoke arrangements to ensure Parliament's expectations of accountability for the use of public funds are maintained. Should the final proposal for ICCAN have the effect of creating a new central Government arm's length body (ALB) then this is likely to need to go through a separate Government approval process.

6.21 One of the Board members would be a senior official from the Department for Transport with a limited remit to ensure that ICCAN's work programme remained consistent with the Terms of Reference. ICCAN's governance would include total functional separation between it and the CAA: they would work on separate work streams with no cross-over. As a subsidiary of the CAA, the CAA Board would maintain appropriate financial oversight of ICCAN. Although ICCAN's views would be a relevant factor in any event,

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it is expected that the CAA would be required by the Secretary of State to take the outcome of some of ICCAN's work streams into account when the CAA is performing its own functions. The CAA Board would also be formally responsible to DfT for the funding passed through the CAA to ICCAN. Through this structure, the ICCAN board would decide on the work programme without interference from the CAA Board or the Government as long as it remained within its Terms of Reference. Arrangements would also include separate IT, data storage and website from the CAA.

6.22 There are benefits and disbenefits to all the options we have considered, but the Government believes that the model above can allow for ICCAN to function effectively as an independent entity and to deliver on its objectives. We realise that although ICCAN may not appear sufficiently independent as an arm of CAA to some, we believe that it can be independent by following the governance steps as set out. None of the options however are rejected outright, but we see this as the most expedient and logical option to make quick progress.

6.23 To ensure consistency in its delivery and accountability against its Terms of Reference, we propose that ICCAN would report annually to government. This report would cover its proposed work programme for the year ahead, and its achievements in the year just gone.

6.24 The work of ICCAN would be subject to a sunset review after five years. The review would allow Government to consider the ongoing role for ICCAN. If ICCAN were to meet its objectives during this period, to support change, build trust and drive up standards, the need for an independent aviation noise body might reduce, and its functions could be placed elsewhere. Alternatively depending on the outcome of the review, its functions could potentially be expanded.

Summary

6.25 If our lead option were taken forward, in order to make ICCAN's set-up within the CAA a success, we would propose:

- Total separation of CAA's and ICCAN's functions, set out in clear and robust governance;
- That the ICCAN Board is responsible for developing and delivering against a work programme in line with terms of reference set by Government and is accountable to Government, with a sunset review after five years; and
- That ICCAN is funded publicly in the first instance.

Questions on Chapter 6
Q3. Please provide your views on: **a. the Independent Commission on Civil Aviation Noise's (ICCAN's) proposed functions.** **b. the analysis and options for the structure and governance of ICCAN given in Chapter 6, and the lead option that the Government has set out to ensure ICCAN's credibility.**

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7. Ongoing Noise Management

Current Situation

7.1 The decision timeline on page 25 described the processes of ongoing noise management which airports carry out. For example, they respond to emerging noise issues and engage regularly with communities on what improvements can be made. Under the Environmental Noise Directive, and implementing domestic legislation[27] some airports are required to perform regular noise mapping and to consider measures to address noise every 5 years within a noise action plan.

7.2 Noise management methods could include:

- Traditional mitigation measures, such as noise bunds and barriers to mitigate for ground noise;
- The provision of assistance towards double glazing or secondary glazing, acoustic vents and loft insulation;
- Economic incentives such as landing charges structured according to certified noise levels of aircraft;
- Operational procedures, which govern how an aircraft will fly, such as a noise preferential route or minimum climb gradient; and
- Operating restrictions, which limit the capacity of an airport, such as a night flight restriction or a cap on the number of movements allowed.

The Balanced Approach and Noise Management

7.3 As explained in the diagram on page 73, ICAO's Balanced Approach lays down a common framework for managing noise. The Balanced Approach requires a noise problem to be addressed in the most cost effective way, and identifies four pillars for managing noise; reduction of noise at source, land-use planning, operating procedures and finally operating restrictions – which should only be applied if no other measure can address the noise problem.

7.4 While reduction of noise at the source and good land-use planning are the most effective tools for preventing noise problems, they may not be able address all current or predicted noise impacts. These are also areas that are largely beyond the control of individual airports. Therefore operational procedures that determine how and where

27 SI 2006/2238 – The Environmental Noise (England) Regulations (EN(E)R) 2006, as amended.

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aircraft fly, and operating restrictions, such as night flight restrictions, also represent effective tools for airports in managing noise.

7.5 A new EU Regulation came into force on 13 June 2016 requiring a competent authority to be appointed to oversee decisions on noise-related operating restrictions at major airports[28]. The role of the authority is to ensure noise is assessed on a regular basis, and where operating restrictions may be required to address a problem, to ensure that the Balanced Approach is followed, that the cost effectiveness of potential restrictions is assessed and appropriate consultation takes place, and to inform the European Commission and other Member States before restrictions are introduced. The authority must also follow up and monitor the implementation of operating restrictions and make relevant information available.

7.6 This competent authority must be independent of any organisation which could be affected by noise or the restriction, so airports cannot carry out the role as is currently the case. We make proposals, below, on appointing this competent authority.

The Designated Airports

7.7 Currently in the UK, there are different mechanisms for managing noise at different airports. Most airports have historically been responsible for their own noise controls, either on a voluntarily basis or more often as locally agreed conditions of planning permission. The Secretary of State, for airports in England and Wales, and Scottish and Northern Ireland Ministers in relation to airports in their respective territories, are also able to set noise controls for the purposes of avoiding, limiting or mitigating the impacts of noise. The Government has designated Heathrow, Gatwick and Stansted for these noise control purposes since 1971.

7.8 Controls set at the designated airports by the Government are similar to those in place at many other airports. They include:

- The night flights regime – operating restrictions that limit the number of flights that can take place and the amount of noise that can be emitted during the night, as well as restrictions on the types of aircraft that can operate;
- Noise preferential routes (NPRs). The use of NPRs is an operational procedure that seeks to avoid noise sensitive areas as far as possible and give certainty about where aircraft can be expected to be heard; and
- Other noise operating procedures, such as departure noise limits and requirements for continuous climb and descent that require aircraft to be flown in a manner which minimises noise for those on the ground.

7.9 Due to the regulatory nature of these controls and the associated processes any changes need to go through, the noise operating procedures set by Government at the designated airports have not changed for many years and now represent minimum industry practice. Therefore, they do not necessarily reflect the latest developments in noise management or the measures that an airport could put in place if they were not bound by the Government's controls.

7.10 Specific issues have been noted with the noise preferential routes at the designated airports. For example: they were designed for aircraft with different capabilities and so flying them now can create unintended consequences; and they have begun to inhibit

28 The airports in the UK which currently meet the definition of major airport in the Regulation are Heathrow, Gatwick, Stansted, Manchester, Edinburgh, Luton and Birmingham.

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the use of more effective noise control measures. By contrast, the Government is aware that there are examples of non-designated airports who use their NPRs to very good effect in their local engagement and noise management strategies.

7.11 NPRs at the designated airports have their origins in the 1960s, when the Government owned and operated these airports. Over the years a number of other airports have established NPRs. Some of these were set voluntarily by the airport, whilst others were created following local planning (Section 106) agreements with local authorities as has been undertaken, for example, at Luton and Manchester airports.

Analysis

7.12 The Government wishes for ongoing noise management tools to be used to best effect, and for the right balance to be struck between economic and environmental considerations. As such, our aim is to ensure that noise management strategies are developed and decided upon locally wherever possible, and that Government's involvement is focussed where there are strategic decisions to be made. This, along with ICCAN's new functions, will help ensure that controls are:

- Optimum for the local circumstances;
- Balance local and national needs where appropriate;
- Keep pace with best practice; and
- Innovative and ambitious.

The Balanced Approach and Noise Management

7.13 The Government believes that the most effective way for appropriate operating restrictions to be considered is to align decisions with the land use planning process when airport development takes place. The planning process requires a full consideration of the environmental impacts associated with any development, including consideration of the maximum level of noise that affected communities should be exposed to – and therefore when operating restrictions will be necessary. In practice it has historically been the case that most new or amended operating restrictions at airports have come about through the land use planning process. However, there will also be instances when operating restrictions may be required separately from any planning decision, for example following development of a noise action plan.

The Designated Airports

7.14 The designation of Heathrow, Gatwick and Stansted for noise management purposes was previously reviewed as part of the Aviation Policy Framework in 2013 and at that time it was decided not to make any changes to these arrangements.

7.15 In light of the requirement to appoint a competent authority to comply with Regulation (EU) 598/2014, and the noise controls that will form part of the eventual decision on the expansion of Heathrow Airport, the Government has again reviewed the rationale of designation. We think that strategic importance remains the right criteria for Government intervention and that in most instances, proposals on noise management will be best developed locally. Therefore, we have concluded that it would be best to determine Government involvement according to the significance of the decision, rather than the airport in question, in line with our aims for the decision making system described on page 27.

7.16 As with operating restrictions, other noise controls associated with new infrastructure may be considered as part of planning decisions. However, it is also important that

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airports have the ability to update these in response to changes that take place at an airport, or following improvements in technology. It is clear that the current centrally imposed noise controls can inhibit more ambitious or effective noise management measures being set. Engagement with the designated airports and their communities strongly points to the desire for more innovative and responsive approaches to mitigating noise. The last few years have seen both Gatwick and Heathrow drawing on the experiences of those living near these airports to develop community driven approaches to managing noise, and Stansted work with communities to develop an airspace change. Our view is that greater local control over how noise is managed at the designated airports would see this trend continue and solutions to problems developed more quickly and with fewer obstacles.

The Role of the CAA in Ongoing Noise Management

7.17 The Government sees the regulator's strategic role as complementary to ICCAN's role and the role of airports as outlined throughout this Chapter. We want the CAA to influence the aviation industry's performance in ongoing noise management through its leadership, advisory role and its duty regarding the publication of information on the environmental effects of UK air travel and mitigations for them. Through its Information Duty, the CAA is already able to request that existing environmental information be shared with the CAA, which it can then publish. The CAA should set out how it aims to influence airports to develop and implement better noise management approaches as they work with their airline customers, contracted ANSPs and their local communities. In doing so, the CAA should have regard to the factors outlined in their duties in relation to air navigation. We intend to direct the CAA to perform this function. This means the CAA could provide leadership at a strategic level, and could advise airports, airlines or ANSPs to take action if they are presented with compelling evidence and conclude that the factors are not appropriately balanced. For example, this could be because the right balance is not being struck in the way noise is being accounted for in operations, in the noise control measures being used or in how airports are incentivising airline or ANSP behaviours.

7.18 In the case of noise, the CAA could be informed by ICCAN's work in the new system we are proposing. For example, the CAA could consider ICCAN's best practice guidance when it is seeking to establish if noise has been adequately taken into account following evidence being presented to them. ICCAN could also allow the CAA to focus predominantly on this balance, because it would independently verify the way noise is assessed and handled.

7.19 We would not expect the CAA to become involved in every issue across the country relating to noise management. This would be disproportionate, and would not be consistent with our focus on local relationships for resolving issues. We would expect the CAA, alongside ICCAN, to influence the sector through their guidance to balance the factors which are important in airspace and noise management. We would also expect the CAA to be consistent with better regulation principles and practices and to use risk assessments to assess and prioritise issues in order to determine when they should provide advice. If the CAA felt that its advice on appropriate balance was not being given proper consideration and appropriately followed by industry, we would consider the need for further regulation.

Compliance with Noise Controls

7.20 Once noise controls are in place at airports, communities will want assurance that the aviation sector is adhering to these controls and all parties will want assurance that the

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effectiveness of the controls is kept under review. It is therefore important that all noise controls are accurately monitored, performance levels are reported, and that appropriate compliance regimes are in place to incentivise continuous improvement in performance and potentially to sanction poor performance. Transparency is key, so we expect airports to publish clear and accurate data on performance against all noise controls which can be scrutinised by interested parties.

7.21 Information is a key tool to incentivise better performance and we encourage airports to publish comparative performance information, such as Heathrow's Fly Quiet League Table. In some cases, penalties may be appropriate to incentivise performance and to show that breaches are taken seriously. Annex E sets out the powers available to airports to set penalties for breaches of noise controls along with examples of how these powers are used. This shows that airports do make use of these powers, though we recognise the perception that airports, for commercial reasons, may be reluctant to fine their customers. We expect the use of these powers to be kept under regular review in order that enforcement of noise controls is proportionate and targeted in response to performance. We also expect ICCAN to develop best practice in the field of noise controls and compliance in a way which would raise standards. With the CAA using its influence as the UK's independent regulator of airspace to advise industry and provide leadership, and ICCAN advising on best practice in the use of the full range of compliance mechanisms available to airports, there will be the right incentives and mechanisms for industry to effectively manage their noise impacts.

7.22 In the case of controls which are set through the planning process, the various provisions and other requirements that a S106 agreement contains are usually enforceable by the local planning authority in whose area the development takes place. Enforcement for S106 agreements is undertaken by seeking an injunction through the Courts. Enforcement of planning conditions is more straightforward since it generally involves the use of the planning enforcement system.

Proposals

The Balanced Approach and Noise Management

7.23 We propose two different routes for decisions on operating restrictions being taken within the planning process. In most cases for both routes, the airport itself would be expected to lead the development and consultation on any proposed restrictions, with the competent authority ensuring the correct process is followed.

7.24 For operating restrictions which are associated with planning decisions in England and Wales:

- **Operating restrictions associated with strategically significant decisions:** The SofS would be appointed competent authority for all operating restrictions delivered through the planning process in the case of Nationally Significant Infrastructure Projects (NSIPs), as well as any local planning decisions that are called-in by the Secretary of State.
- **All other planning-related operating restrictions:** The local authority deciding on a planning application would be appointed competent authority.

7.25 As the Scottish and Northern Irish devolved administrations have separate powers to set noise controls, and the planning system is also devolved, these administrations will wish to make their own arrangements for appointing a competent authority for any airports within their territories that fall within the scope of the EU Regulation.

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7.26 For those occasions when operating restrictions may be brought forward by an airport outside of the planning process, such as those resulting from Noise Action Plans or similar processes, we propose that the CAA would be appointed in the role of competent authority for approving any such restrictions.

7.27 More detailed information on what is required by the competent authority and how this role should be performed is included at Annex F.

Operating Restrictions at the Designated Airports

7.28 These proposals would have implications for future night flight regimes at Gatwick, Heathrow and Stansted where the Government has historically set restrictions. In line with our proposed policy that Government involvement should be determined according to the significance of the decision, rather than the airport in question, our objective would be that night flight restrictions are considered through the planning process or otherwise agreed locally where possible.

7.29 Expected developments at some of these airports provide such an opportunity. The draft Airports National Policy Statement includes an expectation for a night flight ban at Heathrow Airport, subject to consultation with local communities and relevant stakeholders in accordance with the International Civil Aviation Organisation's Balanced Approach to noise management. The Secretary of State would therefore have a role in approving these restrictions in line with our proposal. Stansted also expects to be bringing forward a planning application later this year to seek an increase in the level of its planning cap so that it can make maximum use of the capacity provided by the existing runway. This would provide an opportunity for local consideration of the future conditions on night flights, as well as other noise controls.

7.30 In the meantime, we need to ensure that existing controls do not lapse, which is why the Government is currently consulting on what night flight restrictions should apply until 2022. We have made clear in our night flights consultation that we do not want to preclude more bespoke arrangements being put in place at each airport – either through arrangements tied to the planning process or other means. If such locally agreed arrangements, which have been subject to appropriate consultation and take account of the Balanced Approach, can be put in place before the end of this proposed five year period, we believe it would in principle be appropriate for the Government controls to end before October 2022. If no such arrangements have been agreed by the end of this period we will consider the future role for Government at that time.

Other Noise Controls at the Designated Airports

7.31 In order to allow the designated airports to manage noise in the way that best reflects the issues faced by their communities, we propose that responsibility for setting other types of noise controls is transferred to the airport. They could then be agreed locally or decided through the planning process or airspace change processes, making use of ICCAN's best practice in the future. This would be consistent with the situation at other airports, and with our aim to ensure that solutions are developed locally where possible.

7.32 Under this approach, there would still be a role for the Secretary of State in approving any noise controls associated with Nationally Significant Infrastructure Projects, such as the development of a new runway at Heathrow Airport. There would also be a similar role for local planning authorities in local planning decisions. Outside of the planning process, airports would be able to make changes to these controls as and when they are needed, so that they continue to reflect best practice.

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7.33 Our proposal would incentivise airports to engage and consult with their local communities and other industry partners to develop innovative and bespoke solutions to managing specific noise problems. Because the current controls set by Government are minimum industry practice, we would not expect them to be removed unless improved controls are introduced in their place. We envisage that the airports would build upon the existing controls and respond more quickly to any future issues as a result of the removal of Government bureaucracy. Airports will be incentivised in this through ICCAN's best practice and Government's clear agenda for industry set out in this consultation.

7.34 The Government would retain its powers to set noise controls at these airports, should it be necessary again in the future.

Noise Preferential Routes at the designated airports

7.35 We propose to transfer the ownership of the NPRs at the designated airports (Heathrow, Gatwick and Stansted) to the respective airports, as with the other noise management measures (other than operating restrictions) discussed above. At the same time, we are proposing that these airports should publish data on their departure routes and track keeping performance – more details can be found in the revised draft guidance published alongside this consultation document. This would assist in providing greater transparency to communities about where aircraft are actually flying, how often, and would make it easier to see changes over time. We also intend to encourage all other major UK airports to publish similar data in the interests of transparency where practicable. But the exact amount of information provided should be determined by the respective airports and in consultation with their local communities.

7.36 It is important to recognise that the proposal relating to the NPRs at the designated airports would not change existing flightpaths, how they are amended, or where aircraft are actually flying. This because an NPR is an administrative tool, and distinct from the standard instrument departure (SID) which aircraft actually fly. Any subsequent changes to flightpaths will still require the CAA's airspace change process to be followed, and the views of respondents taken into account by the proposer. The three designated airports would be able to retain and manage the NPRs if they wished to, and would be able to do so in a way that was more suited to their individual circumstances, through local engagement. If this policy is progressed, the Department would engage with all three airports to ensure that at the point of transfer the future arrangements are clear and publicly available.

7.37 The three designated airports could decide to retain, amend or create NPRs to best reflect the needs of their local communities. And the relevant planning authorities, as part of any relevant planning processes, could create or amend NPRs which are appropriate for the development under consideration. This is consistent with the situation at other airports, and will enable noise issues to be addressed more thoroughly at the local level than is currently the case.

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Summary

Type of Control	Competent authority for the application of the Balanced Approach and decision maker for other controls: *In Planning Process*	*Outside of Planning Process*
Operating Restriction	Planning authority: – usually Local Authority – Secretary of State for NSIPs or called-in planning applications.	The CAA[29]
Other controls including operating procedures	Planning authority: – usually Local Authority – Secretary of State for NSIPs or called-in planning applications.	Airport

Ongoing Noise Management

Questions on Chapter 7

Q4. Please provide your views on:

a. the proposal that the competent authority to assure application of the balanced approach should be as set out in Chapter 7 on Ongoing Noise Management and further information at Annex F.

b. the proposal that responsibility for noise controls (other than noise-related operating restrictions) at the designated airports should be as set out in Chapter 7 on Ongoing Noise Management.

c. the proposal that designated airports should publish details of aircraft tracks and performance. Please include any comments on the kind of information to be published and any evidence on the costs or benefits

d. whether industry is sufficiently incentivised to adopt current best practice in noise management, taking into account Chapter 7 on Ongoing Noise Management, and the role of the Independent Commission on Civil Aviation Noise in driving up standards in noise management across the aviation sector.

29 With the exception of operating restrictions set by the SofS under s78 of the Civil Aviation Act 1982, should they choose to exercise these powers, in which case the SofS would be the competent authority.

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8. Conclusions

8.1 The Government's aim is to ensure that the airspace policy framework is up to the challenges ahead in modernising airspace and delivering the new northwest runway at Heathrow. To do that we have made proposals to achieve:

- Greater transparency in decision making and the way noise is handled;
- Increased focus on engagement and locally-informed solutions;
- Improvements to the evidence base which informs how airspace decisions are made, particularly evidence on the noise impacts; and
- Clarity and consistency in the level at which decisions are made, and why.

8.2 The diagram on the next page illustrates our intended framework for airspace and noise management decisions.

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Nationally significant decisions
The Government sets the national policy and decides on issues that are nationally or environmentally significant

- Approves noise related operating restrictions for Nationally Significant Infrastructure Projects (NSIPs)
- Assesses called-in airspace change proposals, and makes decisions to accept or reject them
- Approves Noise Action Plans

The UK's independent regulator of airspace
The CAA balances the interests of all parties in delivering their functions and ensures that decisions they oversee are in line with Government policy

- Sets processes for airspace change
- Assesses change proposals, and makes decisions to accept or reject them
- Submits called-in airspace changes to the Secretary of State with its conclusion on the proposal
- Sets expectations for industry engagement with communities on operational changes which affect noise
- Can advise that action should be taken if it is deemed that key factors (e.g. noise and efficiency) are not being appropriately balanced in ongoing noise management

Locally significant decisions and ongoing noise management
Industry, communities and their representatives work together to manage noise, informed by local circumstances and with the objective to share the benefits of improvements to aircraft technology

- Ongoing engagement and transparency, including engagement with communities on operational changes which affect noise
- Develops and consults on Noise Action Plans, and implements them
- Agrees noise controls, including certain operating restrictions for non-NSIPs
- Monitors and enforces noise controls
- Identifies options/goals for airspace changes and makes proposals informed by local circumstances and engagement and in accordance with the CAA's processes

Government | Civil Aviation Authority | Industry, Communities, Local Authorities, Airport Consultative Committees

Independent Commission on Civil Aviation Noise

Enables effective decision making at all levels by assuring noise information and improving how communities can engage with proposals. Drives improvement in noise management standards through best practice guidance

- Advises airspace change sponsors about noise management options
- Responds to airspace change consultations
- Promotes the use of best practice e.g. noise operating procedures or noise envelopes
- Back-stop role in conciliation of high-level disputes
- Advises industry on how noise information and concepts can be communicated accessibly

The decision making system

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8.3 The diagram shows that ongoing noise management and locally significant planning decisions should be taken at the local level, informed by engagement with all stakeholders, including communities. We wish to be clear that we expect industry to continuously seek improvements in its noise performance where practicable, to engage with communities and to consider noise when delivering airspace modernisation.

8.4 Airspace change decisions must be taken by the CAA, as it has the expertise to ensure that decisions prioritise safety while balancing all of the factors that must be taken into account, including local views. There will also be some occasions when it is appropriate for the Government to intervene directly. Some planning decisions at airports, including that to expand Heathrow Airport, are clearly significant for the whole of the UK. As the Government has responsibility for whether such Nationally Significant Infrastructure Projects (NSIPs) should go ahead, it is also right that Government ensures that communities are properly protected during such development, while the benefits of increased capacity are secured. And in the airspace change process, there will be some decisions which could have significant impacts on the environment or the UK's wider interests. Again, it remains important that Government has a role in balancing these complex and competing priorities. We have therefore developed a criteria for when decisions go beyond those which are best made through the local or regulator processes and require Government to intervene.

8.5 The new Independent Commission on Civil Aviation Noise (ICCAN) will support the decision making system across the board, underpinning them through assurance and best practice. It will improve the foundations of decisions by facilitating more effective engagement and accessible communication of noise impacts and management options. This improved dialogue will feed into decisions not only at a local level, but through the CAA and Government alike. ICCAN will also drive improvements in the standards of ongoing noise management, providing best practice so that decisions on noise controls can be made based on the latest information and options available.

8.6 The proposals in this consultation set out our view on how decisions on airspace and noise should be made, and by whom. The changes proposed would ensure that decisions can be made which better support the effective management of airspace and the noise impacts which its use can create.

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Annex A: Current Policy

A.1 Throughout this consultation we make reference to the overarching policy and legal framework that is in place for airspace and aviation noise. A summary is provided below.

Current Policy and Legal Framework

International and Domestic Context

A.2 Aviation is clearly an international sector. Much of the rules and regulations which govern its operation are necessarily international, in order to ensure that aircraft can fly with ease between different countries. The diagram below shows how the international framework feeds through to domestic and local controls. The table below gives more detail about the arrangements in place in the UK governing airspace and noise.

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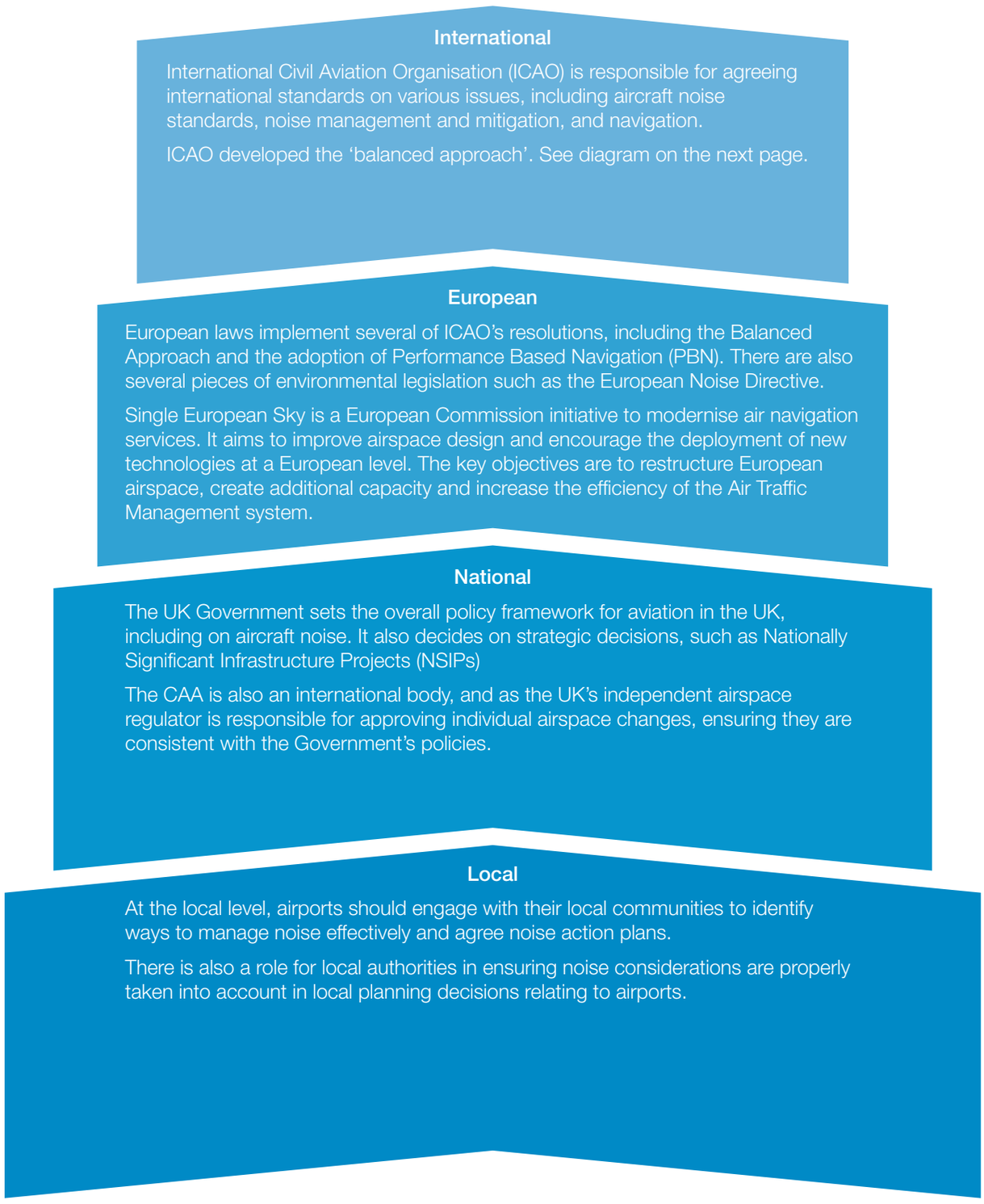

Current framework

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The Balanced Approach

The Government's approach to managing aircraft noise is based on the principles of International Civil Aviation Organization's (ICAO) Balanced Approach. The goal of the Balanced Approach is to address noise problems on an individual airport basis and to identify the noise-related measures that achieve maximum environmental benefit most cost-effectively using objective and measurable criteria. The measures identified under the Balanced Approach for addressing noise are:

1. **Reduction of noise at source:** Much of ICAO's effort to address aircraft noise over the past 40 years has been aimed at reducing noise at source. Aeroplanes and helicopters built today are required to meet the noise certification standards adopted by the Council of ICAO. The latest standards which the UK was instrumental in agreeing, includes the requirement for large civil aircraft, from 2017, to be at least 7dB quieter on average in total, across the three test points, than the current standard. Standards for smaller aircraft will be similarly reduced in 2020.

2. **Land-use planning:** Land-use planning and management is an effective means to ensure that the activities nearby airports are compatible with aviation. Its main goal is to minimize the population affected by aircraft noise by introducing land-use zoning around airports. Compatible land-use planning and management is also a vital instrument in ensuring that the gains achieved by the reduced noise of the latest generation of aircraft are not offset by inappropriate residential development around airports.

3. **Noise abatement operational procedures:** Noise abatement procedures enable reduction of noise during aircraft operations to be achieved at comparatively low cost. There are several methods, including preferential runways and routes, as well as noise abatement procedures for take-off, approach and landing. The appropriateness of any of these measures depends on the physical lay-out of the airport and its surroundings, but in all cases the procedure must give priority to safety considerations.

4. **Operating restrictions:** Under the Balanced Approach, an operating restriction is defined as "any noise-related action that limits or reduces an aircraft's access to an airport." Examples of operating restrictions include restrictions on the number of flights allowed during certain periods, such as at night, or those which place restrictions on noisier types of aircraft

How is it used?

Where there is a noise problem at an airport, **European legislation requires it to be addressed in accordance with the Balanced Approach and to** be managed in the most cost efficient manner.

Operating restrictions should only be introduced at airports if there are no other ways of achieving the desired benefits.

There may be occasions that operating restrictions are necessary, but the process for deciding on these should be performed in accordance with the Balanced Approach **and EU requirements**.

Balanced Approach

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Legislation, Policy or Framework	Details
Aviation Policy Framework (APF)	The APF, published in March 2013, outlines the Government's objectives, principles and guidance on the issues which will challenge and support the development of aviation across the UK at a local and regional level. This guidance covers: noise impacts, air quality, environmental impacts, the roles of industry and the Government, and the aims for local collaboration with all key aviation stakeholders (including communities). The APF sets out that the Government's 'overall objective on noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise.' It includes the statement that 'we expect the aviation industry to make extra efforts to reduce and mitigate noise from night flights through use of best-in-class aircraft, best practice operating procedures, seeking ways to provide respite wherever possible and minimising the demand for night flights where alternatives are available.' The proposals in this consultation would update and ultimately replace the noise elements of the APF.
Transport Act 2000	The Transport Act 2000 sets out the Secretary of State's and the CAA's high level duties with respect to air navigation, and the Secretary of State's power to issue Directions to the CAA and ANSPs. Section 70 sets out a general duty for the CAA with respect to its air navigation functions. More details below.
Section 70 of the Transport Act 2000	Section 70 of the Transport Act sets out a general duty for the CAA with respect to the exercise of its air navigation functions. The general duty requires the Civil Aviation Authority (CAA) to exercise its air navigation functions so as to maintain a high standard of safety in the provision of air traffic services as a priority. Section 70 then goes on to set out that the CAA must exercise its air navigation functions in the manner it thinks best calculated to achieve a number of factors (and where a conflict arises between these factors to apply them in the manner it thinks is reasonable). The factors are: • to secure the most efficient use of airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic; • to satisfy the requirements of operators and owners of all classes of aircraft; • 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; • 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; • 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; • to take account of the interests of national security; • 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).
Air Navigation Directions	The Secretary of State imposes duties and confers powers on the CAA with regard to air navigation in a managed area. It also sets out the current arrangements for the SofS's role in airspace change. The Air Navigation Directions outline specific consultation requirements for an airspace change using the same criteria above, whereby the sponsor of the change needs to '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…' It also requires consultations with the manager of aerodromes and local authorities for airspace changes that have the same effect under the arrival tracks and departure routes followed by aircraft.
Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions (Air Navigation Guidance, ANG)	Refreshed in 2014, the Air Navigation Guidance to the CAA takes into account policy and technical developments, including providing clarity to the CAA and the aviation community on the Government's environmental objectives relating to air navigation. It sets out the key objectives on improving efficiency in airspace, mitigating the environmental impact of aviation noise (including the altitude based priorities) and reiterates the need to consult local communities when airspace changes are being made at airports. The guidance also reflects significant developments such as the creation of the Future Airspace Strategy, the Single European Skies, and the Aviation Policy Framework.

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Legislation, Policy or Framework	Details
Civil Aviation Act 1982	The Civil Aviation Act 1982 includes the ability for the Government to designate individual airports and set specific noise controls. This has led to the Government introducing operating restrictions at airports, and other technical controls, such as a minimum height requirement and noise limits for departing aircraft. The most significant controls currently set through these powers are the night flight regimes at Heathrow, Gatwick and Stansted. This Act also gives the SofS a power to direct any with reference to its charges for the purpose of encouraging quieter aircraft. Section 84 gives the CAA power to obtain information for certain purposes, including information on the number of aircraft and passengers passing through a licensed aerodrome.
Civil Aviation Act 2012	Section 84 of the Civil Aviation Act 2012 contains provision for the CAA to publish, or arrange for the publication of information and advice it considers appropriate relating to: • the environmental effects of civil aviation in the United Kingdom; • how human health and safety is, or may be, affected by such effects; and • measures taken, or proposed to be taken, with a view to reducing, controlling or mitigating the adverse environmental effects of civil aviation in the United Kingdom. The CAA may also publish guidance and advice with a view to reducing, controlling or mitigating the adverse environmental effects of civil aviation in the United Kingdom. Section 85 gives the CAA a power to obtain information in order to perform the function under section 84..
Integrated Aeronautical Information Publication (AIP)	Aeronautical Information Publication (or AIP) is a document produced to inform those operating aircraft in the UK's airspace. It is designed to be a manual containing thorough details of regulations, procedures and other information necessary for flying aircraft in the particular country to which it relates, for example routes and landing procedures. The UK's AIP is published by NATS, under authority from the CAA and Government. It is regularly updated. The format and contents of the AIP is set by ICAO, and all members produce one.
EU Environmental Noise Directive	Under European law, Member States are required to publish a strategic noise map for the main sources of environmental noise (including roads, railways, airports etc.) every five years. Major airports are required to produce Noise Action Plans which must be based on the results of the noise mapping, and they must review these plans at least every five years. Plans must be designed to manage noise issues and effects, including noise reduction if necessary and; meet the objectives in Article 1(c) of Directive 2002/49/EC (Environmental Noise Directive, END); amongst other aims.
Land Compensation Act 1973	The Act provides that compensation can be claimed for residential property that has been reduced in value due to physical factors such as noise and pollution caused by public works (including airports), even though no land is acquired.

Current Policy and Legal Framework

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Annex B: Full list of consultation questions

Question Number	Chapter	Question
1	Changes to Airspace	Please provide your views on: a. the proposed call-in function for the Secretary of State in tier 1 airspace changes and the process which is proposed, including the criteria for the call-in and the details provided in the draft guidance. b. the proposal that tier 2 airspace changes should be subject to a suitable change process overseen by the CAA, including the draft guidance and any evidence on costs and benefits. c. the proposal that tier 3 airspace changes should be subject to a suitable policy on transparency, engagement and consideration of mitigations as set out by the Civil Aviation Authority. d. the airspace change compensation proposals.
2	Assessing Noise in Airspace Decisions	Please provide your views on: a. the proposal for assessing the impacts of noise, including on health and quality of life. Please provide any comments on the proposed metrics and process, including details provided in the draft guidance. b. the proposal to require options analysis in airspace change processes, as appropriate, including details provided in the draft guidance.
3	Independent Commission on Civil Aviation Noise	Please provide your views on: a. the Independent Commission on Civil Aviation Noise's (ICCAN's) proposed functions. b. the analysis and options for the structure and governance of ICCAN given in Chapter 6, and the lead option that the Government has set out to ensure ICCAN's credibility.
4	Ongoing Noise Management	Please provide your views on: a. the proposal that the competent authority to assure application of the balanced approach should be as set out in Chapter 7 on Ongoing Noise Management and further information at Annex F. b. the proposal that responsibility for noise controls (other than noise-related operating restrictions) at the designated airports should be as set out in Chapter 7 on Ongoing Noise Management. c. the proposal that designated airports should publish details of aircraft tracks and performance. Please include any comments on the kind of information to be published and any evidence on the costs or benefits. d. whether industry is sufficiently incentivised to adopt current best practice in noise management, taking into account Chapter 7 on Ongoing Noise Management, and the role of the Independent Commission on Civil Aviation Noise in driving up standards in noise management across the aviation sector.
5	Guidance	Please provide any comments on the draft Air Navigation Guidance: guidance on airspace & noise management and environmental objectives published alongside this consultation.

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Annex C: Glossary

Acronym	Term	Meaning
A-Weighted Scale		The A-weighted scale incorporates a frequency weighting approximating the characteristics of human hearing
ACP	Airspace Change Process	The Civil Aviation Authority'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 Civil Aviation Authority (Air Navigation) Directions 2001 (incorporating variation Direction 2004)". These directions set out the CAA's air navigation duties and were jointly issued by the SofS for Transport and the SofS for Defence.
ANG	Air Navigation Guidance	The 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.
ATM	Air Traffic Management	The combination of the airborne and ground-based functions (air traffic services, airspace management and air traffic flow management) to ensure the safe and efficient movement of aircraft during all phases of air operations.
ATMs	Air Transport Movements.	The landings or take offs of aircraft engaged in the transport of passengers or freight on commercial terms.
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 process by which airspace change sponsors develop their proposals for amending the UK's airspace structure.
	Airspace Structure	The detailed airspace layout and procedures as set out in the AIP. 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

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	Concentration	This is where aircraft are instructed by controllers or follow procedures which mean that they fly the same route consistently with minimal dispersion.
dB (or dBA)	Decibel	Units describing sound level or changes of sound level. Expressed as dBA when it relates to the A-weighted scale.
Defra	Department for Environment, Food & Rural Affairs	The lead UK Government Department for overall environmental policy
DfT	Department for Transport	The lead UK Government Department for aviation policy and the author of the Air Navigation Guidance.
	Dispersion/ Dispersal	Dispersal 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.
EASA	European Aviation Safety Agency	The European Aviation Safety Agency (EASA) is an agency of the European Union (EU) with regulatory and executive tasks in the field of civilian aviation safety
EC	European Commission	The executive body of the European Union responsible for proposing legislation, implementing decisions, upholding the EU treaties and managing the day-to-day business of the EU.[2]
	Engagement	A catch all term that covers a variety of activities such as consulting, seeking feedback, and informing stakeholders. It can also involve meetings, workshops, town hall meetings etc.
ERCD	The Environmental Research and Consultancy	The team in the CAA which, as part of its activities, estimates the noise exposures around London airports (Heathrow, Gatwick and Stansted) on behalf of the Department for Transport
EU	European Union	The union of 28 European member states.
FAS	Future Airspace Strategy	The agreed UK plan to modernise airspace by 2030.
	General Aviation	Any civil aircraft operation other than commercial air transport or aerial work.
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.
ILS	The Instrument Landing System	The standard system for navigation of aircraft upon the final approach for landing.
LAMP	London Airspace Management Programme	The NATS led project to modernise the airspace structure across southern England.
LDEN		The 24-hrLeq calculated for an annual period, but with a 5 decibel weighting for evening and a 10 decibel weighting for night to reflect people's greater sensitivity to noise within these periods.
Leq (or LAeq)	Equivalent sound level	The measure used to describe the average sound level experienced over a period of time (usually 16hr for day and 8hr for night) resulting in a single decibel value. Leq is expressed as LAeq when it refers to the A-weighted scale.
Lnight		The equivalent sound level between 2300 and 0700 over the course of a year.
	Multiple Route Options	The availability to the airspace user of more than one routing option on the ATS route network. Options for airspace design that are based on multiple flights paths. These can potentially offer relief or respite from aircraft noise.

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MATS II	Manual of Air Traffic Services Part II	The document containing the ATC operational procedures used by the ANSP. It does not change the notified structure of the UK's airspace.
NATS	National Air Traffic Services	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 areas on a map showing where equal levels of noise are experienced.
	Noise Envelope	A concept that creates balance between aviation growth and noise reduction and incentivises the reduction of noise at source. A noise envelope should be agreed among stakeholders, take account of new technology and be appropriate for the airport in question. Noise envelopes can give local communities more certainty about the levels of noise they may expect in the future and could take the form of a movement cap, a maximum contour size, a quota count system or a limit on passenger numbers among others.
	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 impacts.
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.
PPR	Permanent and Planned Redistribution	This is where an ANSP makes a conscious decision to amend an air traffic control procedure which results in the permanent shift of some air traffic.
	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.
SEL	Sound Exposure Level	The steady noise level, which over a period of one second contains the same sound energy as the whole event. It is equivalent to the Leq of the noise event normalised to one second.
SI	Supplementary Instruction	This is the means by which a proposed permanent change to ATC procedures is incorporated into the next MATS II edition.
	Sustainable development	Economic development that is conducted without depletion of natural resources.
SIDs	Standard Instrument Departure routes	These are the established departure routes which are published in the AIP and which must 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.
s106		Section 106 Agreements of the Town and Country Planning Act 1990, which allows interested people to ask for conditions to be applied to particular planning applications.
	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.

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Annex D: Compensation Policy and Legislation

Extract from Aviation Policy Framework – Noise insulation and Compensation

D.1 *"The Government continues to expect airport operators to offer households exposed to levels of noise of 69 dB LAeq,16h or more, assistance with the costs of moving.*

D.2 *The Government also expects airport operators to offer acoustic insulation to noise-sensitive buildings, such as schools and hospitals, exposed to levels of noise of 63 dB LAeq, 16h or more. Where acoustic insulation cannot provide an appropriate or cost-effective solution, alternative mitigation measures should be offered.*

D.3 *If no such schemes already exist, airport operators should consider financial assistance towards acoustic insulation for households. Where compensation schemes have been in place for many years and there are few properties still eligible for compensation, airport operators should review their schemes to ensure they remain reasonable and proportionate.*

D.4 *Where airport operators are considering developments which result in an increase in noise, they should review their compensation schemes to ensure that they offer appropriate compensation to those potentially affected. As a minimum, the Government would expect airport operators to offer financial assistance towards acoustic insulation to residential properties which experience an increase in noise of 3dB or more which leaves them exposed to levels of noise of 63 dB LAeq, 16h or more.*

D.5 *Any potential proposals for new nationally significant airport development projects following any Government decision on future recommendation(s) from the Airports Commission would need to consider tailored compensation schemes where appropriate, which would be subject to separate consultation.*

D.6 *Airports may wish to use alternative criteria or have additional schemes based on night noise where night flights are an issue. Airport consultative committees should be involved in reviewing schemes and invited to give views on the criteria to be used."*

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Current Policy

Compensation for loss of value

D.7 Part 1 of the Land Compensation Act 1973 provides that compensation can be claimed for residential property that has been reduced in value due to physical factors such as noise and pollution caused by public works (including airports), even though no land is acquired. Claims cannot be made until a period of 12 months from the date of opening/ adoption has passed. The Limitation Act 1980 provides that a person who is entitled to make a claim must do so within six years of the first claim day.

D.8 This form of compensation will potentially be most relevant to new runways. The most recent examples of its application to airports were Manchester's second runway and runway extensions at East Midlands and Southend Airports. Difficulties arise with the compensation process of this Act however, in proving loss of value due to noise disturbance (which requires a detailed analysis of the factors affecting the local housing market), and the difficulty in separating new noise disturbance caused by use of the new infrastructure from noise made by additional movements which may have occurred without the development.

D.9 The Land Compensation Act 1973 specifically excludes the claiming of compensation where there has been intensification of use. There is no statutory requirement for compensation to be paid to those who live next to public works, such as roads and railways, purely because traffic has increased. The view is taken that those who purchase property near existing roads or railways do so in the knowledge that traffic can change in composition or volume, and that it would not be right to require the relevant authorities to pay compensation solely because traffic patterns have altered in this way.

Non-statutory compensation

D.10 Most major airports currently have discretionary schemes which offer financial assistance towards noise insulation to properties near the airport. Each airport's scheme has different criteria but in most cases will comply with the minimum criteria set out in the APF (see above extract from Aviation Policy Framework – Noise insulation and Compensation)

Current compensation offers

D.11 Many airports have gone beyond the policy and legislated compensation amounts. In April 2014 Gatwick introduced a new noise insulation scheme which is calculated on the 60dB LAeq (daytime) noise contour based on airport operation at maximum capacity handling 45 million passengers per annum. The contour boundary has been amended to reflect local geographic layout resulting in an uneven boundary line. The airport has decided to extend this line 15km, both east and west outside the furthest contour to reflect aircraft noise impacts from all arriving aircraft established on the centre line. In practice this extends eligibility to some properties within the 51dB LAeq contour. The scheme pays up to £3,000 per property for double glazing or acoustic loft insulation. Around 2,000 homes are eligible.

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D.12 Birmingham have a section 106 planning obligation in place that requires them to fully insulate for sound within the 63dB LAeq contour from 2002 although that contour has shrunk in size since.

D.13 Bristol have a section 106 planning obligation in place that requires them to have a community fund linked to passenger numbers (£130, 000 in 2015) available each year which provides noise insulation grants. 100% grants (up to £5,000) are available to residents within the 63dB LAeq contour. Residents within the 60dB LAeq and 57dB LAeq contours can apply for grants for 50% of costs (up to £2,500). Grants are for high specification acoustic double glazing for windows and doors for habitable rooms.

D.14 Luton provides insulation works, determined on an annual basis, to any habitable rooms at homes that are:

- Within the 63 dB LAeq, 16h summer daytime contour based on actual aircraft movements at the airport for the summer period (16th June to 15th September) in the immediately preceding calendar year.
- Any bedrooms at homes within the 55 dB LAeq, 8h summer night-time contour based on actual aircraft movements at the airport for the summer period (16th June to 15th September) in the immediately preceding calendar year.
- Any bedrooms at homes where the airborne noise level in excess of 90 dB SEL occurs at an annual average frequency of once or greater during the night-time (23.00 to 07.00).

Additional runway capacity offers

D.15 Heathrow's compensation package offer for its proposed North-West runway scheme applies to homes within the future 55db Lden or 54 dBLeq contour, whichever is the greater, that would be eligible for noise insulation. This is expected to stretch to Windsor in the west and Richmond in the east and over 160,000 homes could be eligible. Homes close to the airport would qualify for full costs paid with those further away receiving up to £3,000. Heathrow has also proposed compensation of 25% above market value, all legal fees, and stamp duty costs for a new home for anyone whose home needs to be purchased (about 750 homes), and has extended this offer to homes in villages close to the new runway which will not be compulsorily purchased (about 3,750 properties would be eligible).

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Annex E: Compliance Mechanisms

Introduction

E.1 The Government's overall policy on aviation noise is to limit and where possible reduce the number of people significantly affected by aircraft noise. In support of this policy, we expect industry to continuously strive for best practice and to be transparent in how it does this (consultation, noise action plans) and on its performance (monitoring and information).There are a number of levers in place to incentivise noise reduction, right up to sanctions, and most airports use a range of these.

E.2 Airspace and noise issues are often at the forefront of community concerns around airports. Complaints are often raised that current compliance measures are not transparent, and that communities are unaware of what steps have been taken, or are being taken, to rectify an issue. To help with this, as seen in the main body of this consultation document, the new noise body, ICCAN should encourage best practice, including in the use of compliance mechanisms and should be part of the airspace change process to ensure noise impacts and mitigation options are properly considered. We do not consider at this stage that ICCAN should have a direct enforcement function in respect of individual breaches of noise controls. This is primarily because its remit would be limited to noise and understanding the reasons for individual breaches would require a wider investigation function, potentially encompassing air navigation and safety matters. It is also important that enforcement of noise controls does not create perverse incentives leading to worse outcomes in other areas such as emissions, safety or efficiency.

E.3 This paper aims to set out the mechanisms, standards and policies currently available to the Government, local authorities, airports, and other interested bodies as well as how these are used.

Compliance Levers – International, EU and National

International Noise Controls

E.4 ICAO, as part of the UN, set standards and regulations for environmental protection from impacts due to aviation, and in particular noise certification standards which apply to new aircraft types. The definition of the specification that an aircraft needs to reach are detailed in the relevant Chapter in Annex 16 of the 'Environmental Technical Manual on the use of Procedures in the Noise Certification of Aircraft'.[30] The latest standard, known

30 ICAO, Aircraft Noise, http://www.icao.int/environmental-protection/pages/noise.aspx

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as 'Chapter 14' requires new types of large civil aircraft, from 2017, to be at least 7dB quieter in total, across the three test points, than the current standard. Airports are able to set noise charges based on these standards.

E.5 Noise Abatement Departure Procedures (NADP) are a series of airline operational techniques that help reduce noise, which are endorsed by ICAO. A recent review of these procedures can be found through ICAO[31]. ICAO also encourage Member States to adopt a 'balanced approach' with regards to the decision making process around aircraft noise and its environmental impacts, which has been explained above.

European Noise Controls

E.6 In order to ensure a regulated and fully functioning single air transport market between EU Member States, the European Commission issues Directives and Regulations, including in the field of noise regulation. For further information on the status of these regulations as a result of the referendum on the UK's membership of the EU, please see page 15 of the consultation document.

Regulation	Description	Where or How is it Used?
Regulation of the operation of aeroplanes (EC Directive 2006/93 on the regulation of the operation of aeroplanes covered by Part II, Chapter 3, Volume 1 of Annex 16 to the Convention on International Civil Aviation, second edition (1988))	To ensure that all civil subsonic jet aircraft landing at their airports comply with at least the standards in Chapter 3	At all airports
Rules and procedures with regards to the introduction of noise-related operating restrictions with a balanced approach (EU Regulation 598/2014)	Wider definition of operating restrictions in order to facilitate the implementation of operational measures which could reduce noise impacts without affecting operational capacity	Came into force in June 2016 and will be applicable for any new changes that require operating restrictions
Assessment and management of environmental noise (EC Directive 2002/49 relating to the assessment and management of environmental noise implemented by the Environmental Noise (England) Regulations 2006)	Create noise maps for relevant[32] airports to then create a Noise Action Plan	Undertaken every 5 years[33]
Common rules for the allocation of slots at Community airports (Council Regulation (EEC) No 95/93 (as amended))	Administer a scheme of sanctions to control air carriers who repeatedly and intentionally misuse airport slots at the UK's six coordinated airports (currently Heathrow, Gatwick, Stansted, Manchester, Luton and London City, with Birmingham to be added summer 2017).	ACL, the slot coordinator applies these sanctions (last update 2015)

EU regulations for Compliance

31 http://www.icao.int/environmental-protection/Documents/ReviewNADRD.pdf

32 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/276226/noise-action-plan-airport-operators-guidance-201401.pdf

33 The Action Plan must be designed to manage noise issues and effects, including plans for noise reduction if necessary. Action Plans must: Be designed to manage noise issues and effects, including noise reduction if necessary; Aim to preserve quiet areas in agglomerations; Address priorities which must be identified having regard to guidance; Apply to the most important areas as established by strategic noise maps; Include consultation with the public, whereby they must be given early and effective opportunities to engage with the creation and review of the plans.

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National Noise Controls

E.7 The competent authority for designated airports is the Secretary of State, giving him the powers under section 78 of the Civil Aviation Act 1982 to consult and decide on noise controls, including abatement procedures and the night flight regime. Non-designated airports have equivalent powers in section 38A-38C of the Civil Aviation Act 1982 (not Northern Ireland) to impose controls that mitigate noise impacts. Local authorities can also secure similar noise controls through the planning system, either as conditions on airport development or as planning agreements known as section 106 agreements. The proposed implementation of the recent EU regulation on the balanced approach referred to above would make local authorities the competent authority for non-strategically significant decisions. Competent authorities must ensure that decisions on operating restrictions have followed the Balanced Approach and that appropriate consultation has taken place.

Name	Description	Where applicable
Penalty scheme Section 78A Civil Aviation Act 1982	A designated airport can establish a penalty scheme if the operator of an aircraft does not comply with any of the requirements imposed under section 78(1) of the Civil Aviation Act 1982 in relation to aircraft taking off or landing.	Heathrow, Gatwick and Stansted
Non-designated Airports Section 38A Civil Aviation Act 1982 (except Northern Ireland) Regulate noise and vibration	Powers to regulate noise & vibration from aircraft similar to those conferred to the Secretary of State under section 78. Airports can establish penalty schemes for the failure to comply with these requirements.	Birmingham, Bristol, Luton, London City, Manchester
The Town and Country Planning Act 1990 – Section 106 agreements	Allows local planning authorities to include a legally-binding planning obligation or agreement with a landowner alongside the granting of planning permission. These can often include operational restrictions which can lead to noise abatement. The various provisions and other requirements that a S106 contains is usually enforceable by the local planning authority in whose area the development takes place. Enforcement for S106 agreements is undertaken by seeking an injunction through the Courts. Enforcement of planning conditions is more straightforward since it generally involves the use of the planning enforcement system.[34]	Birmingham, Bristol, Luton, London City, Heathrow, Gatwick, Stansted, Manchester

National Regulations for Compliance

Airports' Use of Compliance Mechanisms

E.8 Airports have several mechanisms that they can use to manage and reduce noise. Legal mechanisms arise from section 38-38C powers or Section 106 planning agreements as outlined above, while some are voluntary on the part of the airport. If they are not adhered to, it is the local planning authority who has the legal right to challenge the non-compliance and will have levers in place to stop the unwanted behaviours. In addition to legal mechanisms which compel airline behaviour there are also economic incentives,

34 http://planningguidance.communities.gov.uk/blog/guidance/ensuring-effective-enforcement/planning-enforcement-overview/

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such as differential landing charges which favour the use of quieter and cleaner aircraft, and 'soft' measures such as the publication of comparative information to drive better performance, (the CAA has published a report on the use of environmental landing charges at UK airports in 2013). We provide examples below to illustrate current use of the potential compliance mechanisms. These are given as representative examples: there are many other airports also managing and reducing noise in similar ways across the country.

Breaches for Departure Noise Limits	Flying off track or persistently flying outside NPRs
Heathrow	Stansted
Gatwick	Manchester
Stansted	Bristol14
Birmingham	Southend
East Midlands (night only)	Luton
Bristol	
Luton	
London City	
Manchester	

Airports that fine for breaches

Heathrow

E.9 In addition to the noise action plan outlined above, the introduction of a 'Fly Quiet League' table was put in place to encourage airlines to use their newest fleets at the airport and operate them in a quieter manner. Whilst there are no sanctions directly tied to the league table, Heathrow believe that airlines want to be at the top of the table , and report that airlines who have featured near the bottom have sought advice on how to improve. They have a number of noise mitigation schemes which can be accessed on their website[35] along with the most recent Fly Quiet League table.

E.10 Heathrow is aiming to ensure that all movements are ICAO Chapter 4 compliant by 2020 meaning the technology used for noise reduction will be some of the most modern available. Their 'Quieter planes' scheme includes variable landing charges depending on the chapter of aircraft. For example, Peak Landing charges are £8,977.84 for Chapter 3 'high' aircraft, and £1,760.77 for Chapter 4 'high' aircraft.[36]

E.11 Heathrow also have a NOx emission charge, where airlines pay £8.82 for each kg of NOx emissions.[37]

35 Heathrow Airport Limited, 'Environmental Noise Directive, Noise Action Plan 2013-2018, http://www.heathrow.com/file_source/HeathrowNoise/Static/Noise_Action_Plan.pdf, p. 21

36 Heathrow Airport Charges 2016, http://www.heathrow.com/file_source/Company/Static/PDF/Partnersandsuppliers/heathrow_airport-airport_charges_decision_2016.pdf

37 Heathrow Airport Limited, Conditions of Use, Schedule 5, http://www.heathrow.com/file_source/Company/Static/PDF/Partnersandsuppliers/HAL-Conditions-of-Use-Amendment-SCHEDULE5-Up_date-25April2014.pdf

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Gatwick

E.12 In addition to the noise action plan, Gatwick restricts operations of marginally Chapter 3 aircraft (Chapter 3 high (least noise efficient of Chapter 3)) so that they cannot operate at Gatwick. From 2015 it expects that at least 83% of aircraft movement will be Chapter 4 or equivalent aircraft.

E.13 They have now introduced a 'fly quiet and clean' programme in conjunction with airlines. They will then be ranked in a league table and measured on metrics such as compliance with abatement techniques, fleet age, engine fit and passenger loads per km.

E.14 All fines for breaches of noise abatement requirements are paid annually to The Gatwick Airport Community Trust, which then invests the money into the local community. Gatwick will continue to fine aircraft who breach departure noise limits and are seeking to increase the fining levels in order to penalise repeat offenders.

Stansted

E.15 Besides their noise action plan, Stansted fine airlines when their aircraft fly 'persistently' outside the NPRs, and send all funds to the Stansted Airport Community Trust Fund. Stansted have also raised fines for daytime breaches and doubled it for night time breaches.

E.16 As part of their most recent noise action plan, Stansted have introduced a tiered fining level (beginning at £1,000) for breaches over the 94dB daytime limit.

Southend

E.17 Southend also fine aircraft that continue to operate off of NPRs despite previous warnings. They assign the level of the fine based on the Quota Count of the aircraft (see below for more information on Quota Count).[38]

Scale of Fines	1st Fine	2-5 Fines	5+ Fines
Aircraft QC1 or less	£500	£1,000	£2,000
Aircraft QC1-QC2	£1,000	£2,000	£4,000
Aircraft QC2+	£2,000	£4,000	£8,000

Stansted Fine Levels

Luton

E.18 Luton have introduced navigational technology which is designed to keep aircraft within the NPR. As a result they fine operators when a track-keeping infringement occurs. Luton believes that this effectively incentivises operators to stay within the swathe, which was modified in 2015 to be more effective. This is enforced as part of their section 106 agreement.

38 London Southend Airport Ltd, Noise Action Plan, http://www.southendairport.com/images/corporatecommunity/environmentalresponsibility/pdfdownloads/NAP-2014.pdf

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Quota Count

E.19 The Quota Count system[39] was designed for the night flight regime at the three designated airports (Heathrow, Gatwick and Stansted) and applies from 2330 to 0600. The QC system allows aircraft to be classified separately for landing and taking off according to their noise performance and limits the amount of noise generated by aircraft during night time operations. Some other airports now have similar regimes in place. The current night flight regime for the designated airports ends in October 2017 and the government is currently consulting on options for the next regime.

E.20 Airlines are incentivised to use quieter aircraft by use of the quota count system in order to maximise the number of movement that can take place. The quieter the aircraft according to the quota count system, the more flights an airline can fly at night, subject to the overall movement limits. The airports however, are given flexibility to manage their allowance, and may carry-over unused movements or quota from one season to another, or may over-run in one season which leads to a deduction in the following season. At no time has this ever been exceeded, but if it were the airports would lose twice as much quota in the following season as it used,[40] so it is incentivised not to exceed the seasonal limits.

Airport Coordination Limited (ACL) – Slot sanction scheme

E.21 ACL, the appointed coordinator of the UK's coordinated airports, has powers to deal with misuse of slots by imposing fines upon airlines. The UK's slot coordinated airports are currently Heathrow, Gatwick, Stansted, Manchester, Luton and London City, with Birmingham to be included summer 2017. This can help control slots being used at the wrong times which either cause noise at unexpected times or congestion that also leads to increase noise impacts. This is particularly useful to incentivise against late running into the night period.

E.22 ACL introduced the UK's sanction scheme in 2007 and has developed it over time. Under the scheme ACL can impose fines upon airline operators who intentionally and repeatedly use slots in a way differently from that for which they were allocated, or else operate without a slot. The five types of misuse ACL fine for can be found on their website.[41] The fine amounts vary between £1k and £20k per operation.

E.23 The scheme has proved very successful in driving compliance by operators but continues to be required to maintain compliant behaviour. It is not straight forward to accurately calculate the overall effect the scheme has had on slot adherence when considering operational times that are different from the allocated slot time as there are several reasons why air services do not follow their schedule. However, what can be seen is that there has been a general improvement in the number of ad hoc movements. A better measure than time differences of how effective this has been is how the number of un-allocated slot operations has reduced. In the first year of the scheme the number of operations without allocated slots dropped overall by 85.5%. ACL has seen this level of adherence maintained in 2014/15.

39 For more information, see page 26 of: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66837/consultation-document.pdf.

40 The absolute maximum overrun is 20% of original limit

41 http://www.acl-uk.org/UserFiles/File/Enforcement%20Code%20Report%202014_15_v2.pdf

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E.24 The scheme is intended to promote good practice and compliance, and not as a means to generate revenue. ACL constantly reviews the effectiveness of the fines, and should they conclude that the current fines are no longer dissuasive, they will consider increasing the fine level or, as an alternative sanction, withdraw specific slots from airlines.

Conclusion

E.25 There are numerous ways that airports and airlines can be incentivised to adopt noise reducing practices, from the use of section106 planning obligations, self-enforcement, and slot-sanctioning to the Quota Count system and powers under the Civil Aviation Act.

E.26 The commercial aviation sector has and will continue to have responsibility for its impacts and Government expects it to strive to reduce those impacts. As the industry grows, more changes will be necessary to increase efficiency and capacity in the air and on the ground. This in itself will help incentivise industry to use best practical means to reduce noise as there will be continued pressure to do so if it wants to pursue that growth.

E.27 The compliance and review provisions outlined in this paper will be complemented by the introduction of ICCAN which will be able to provide an independent view of best practice and any gaps in regulation and encourage the aviation industry to improve its noise performance where needed.

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Annex F: Guidance on the introduction of noise-related operating restrictions

Overview

F.1 This guidance is relevant only for when airports in England or Wales, with more than 50,000 civil aircraft movements per calendar year, are considering the introduction of operating restrictions. The power to set noise controls are devolved to the Scottish and Northern Irish administrations. The Competent Authority responsible for the introduction of operating restrictions will depend on the process by which operating restrictions are being considered. For operating restrictions which are associated with planning decisions in England or Wales, the Competent Authority shall be the body responsible for deciding on the planning decision:

- The SofS is the proposed Competent Authority for all operating restrictions associated with Nationally Significant Infrastructure Projects (NSIPs), as well as any local planning decisions that are called-in by the SofS; and
- The local planning authority deciding on a planning application is the proposed Competent Authority for all other operating restrictions associated with planning decisions.

F.2 For operating restrictions associated with noise action plans, or other processes which identify a noise problem, the CAA shall be the appointed Competent Authority, unless the Government chooses to exercise its powers under s.78 of the Civil Aviation Act 1982.

Process for deciding on operating restrictions

F.3 When a planning application for development at an airport may lead to a noise problem, but does not meet the criteria for a NSIPs under sections 14(1)(i) and 23of the Planning Act 2008, the local planning authority shall ensure that the airport has assessed noise in accordance with Directive 2002/49/EC[42]. The local planning authority shall also ensure that the airport has consulted on measures to address noise in line with the requirements under Regulation (EU) 598/2014 (See 4.7 to 4.9 below).

42 The airport is the Competent Authority for assessing noise under the END, except for the non-designated airports where it is the SofS.

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F.4 If the SofS decides to call-in a local planning application, he shall ensure that the airport has assessed noise in accordance with Directive 2002/49/EC. This will include ensuring that the airport has consulted on measures to address noise in line with the requirements under Regulation (EU) 598/2014[43] given in the following pages.

F.5 For NSIPs, the SofS shall ensure that the requirements under Regulation (EU) 598/2014 are complied with.

F.6 For operating restrictions that are considered separate from any planning application, and which are not set under the Government's s.78 powers, the CAA shall ensure that the airport has assessed noise in accordance with Directive 2002/49/EC. The CAA shall also ensure that the airport has consulted on measures to address noise in line with the requirements under Regulation (EU) 598/2014.

Requirements under Regulation (EU) 598/2014

F.7 The common requirements below also apply to the Competent Authority for all types of operating restrictions.

F.8 If the noise assessment indicates new operating restrictions may be required to address a noise problem, the Competent Authority shall ensure that the airport has satisfied all requirements identified under Regulation (EU) 598/2014, including that:

- Each type of measure to address noise under the Balanced Approach is assessed in line with the requirements set out in Annex I of the Regulation;
- Technical co-operation is ensured to examine best noise mitigation measures;
- Local residents or representatives are consulted and local authorities providing relevant technical information;
- The cost effectiveness of the different measures to address noise is assessed in Accordance with Annex II of the Regulation;
- The Consultation process is organised in an open and transparent manner with a minimum of three months for consultees to respond before operating restrictions are adopted; and
- That operating restrictions are only introduced if the other measures identified to manage noise are unable to achieve the environmental objective established for that airport.

F.9 Before any new operating restrictions are introduced the Competent Authority shall ensure that:

- The Member States, the Commission and the relevant interested parties are given six months' notice, this notice must end two months prior to determining the boundaries of slot co-ordination for the airport's scheduling period;

43 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014R0598

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- A written report is provided along with the above notification outlining the reasons for the introduction of operating restrictions, the noise abatement objective being established, measures being considered in meeting this objective and an evaluation of its cost-effectiveness; and
- If reviewed and notified by the Commission that the operating restrictions do not follow regulations the Competent Authority must examine the notification and inform the Commission of intentions before introducing the proposed operating restrictions.

Right of appeal against decisions on operating restrictions

F.10 Following the adoption of operating restrictions, there shall be 21 days to launch an appeal against their adoption.

- For appeals against operating restrictions introduced as conditions attached to local planning permission, the SofS shall act as the appeal body. If the planning decision as a whole is appealed to the SofS, appeals on operating restrictions will be heard as part of this process; and
- For appeals against operating restrictions associated with an NSIP or local planning decision called in by the SofS, the right to appeal shall be Judicial Review.

Other requirements

F.11 Competent Authorities shall ensure that Implementation of operating restrictions is followed up and monitored and action is taken where required and relevant information is provided free of charge to residents and is readily available

F.12 Competent Authorities may, to avoid economic hardship in the case of developing counties, exempt marginally compliant aircraft from noise operating restrictions. This can only be done on the provision that these aircraft are:

- Granted noise certification to the standards specified under the Chicago Convention[44];
- Were operated in the European Union during the five year period preceding its entry into force of the regulation;
- Were on the register of the developing country concerned in that five year period; and
- Continue to be operated by a natural or legal person established in that country.

F.13 In some cases, Competent Authorities may authorise individual operations in respect of marginally compliant aircraft which could not otherwise take place under this regulation, these exemptions are to be decided on a case by case basis.

44 The Convention on International Civil Aviation, signed in Chicago, 7 Dec 1944 which established the International Civil Aviation organization.

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