

CAA response to Transport Select Committee airspace management and modernisation inquiry

CAP 1532



Published by the Civil Aviation Authority, 2017

Civil Aviation Authority,
Aviation House,
Gatwick Airport South,
West Sussex,
RH6 0YR.

You can copy and use this text but please ensure you always use the most up to date version and use it in context so as not to be misleading, and credit the CAA.

First published 2017

Transport Select Committee – Airspace management and modernisation enquiry: Civil Aviation Authority response

Introduction

1. The Civil Aviation Authority (CAA) welcomes the Transport Select Committee's inquiry into UK airspace management and modernisation.
2. Modernising the UK's airspace, some of the most congested in the world, presents an opportunity that will benefit consumers, airlines, airports, general aviation and some local communities. Yet there are challenges that need to be addressed and wider stakeholder interests that need to be incorporated into the delivery of this modernised infrastructure to meet the increasing demands on airspace. Since the Select Committee's last inquiry into the use of airspace in 2008/9, the CAA, the Government and the industry have been working hard to create a system that works better for all stakeholders. Progress has been made and we have learned a great deal; but there is more to do.
3. Without modernisation, our airspace will not be able to cope with the predicted increase in demand, let alone the extra aircraft movements a third runway will allow for. Many aviation consumers in the UK already face unnecessary delays, while reliance on holding stacks and extended routeing increases CO2 emissions. At the same time, new generations of aircraft design are quieter and can fly more precise routes. This could reduce the impacts of aviation noise and enable noise to be more equitably distributed.
4. To achieve this vision of a modernised airspace, there needs to be a stronger system of determining how airspace is designed, how these designs are implemented, and how they are enforced. As we will outline in this submission, there are a number of important issues:

- a. More precise routes from satellite navigation can lead to a concentration of aircraft noise – an outcome that is understandably unwelcome by local communities adversely affected, while welcomed by those residents who benefit. While many airspace changes are uncontroversial – they take place in the upper airspace – those that take place around airports (lower airspace / terminal airspace) understandably cause the most concerns.
 - b. At present, there is no comprehensive mechanism in the airspace management architecture to compel all the necessary parties to bring forward airspace changes. Progress is dependent on the choices of competing commercial airport entities and NATS. Further, there is no mechanism for resolving trade-offs between competing commercial airport entities, but there ought to be.
 - c. There is currently no comprehensive mechanism for tracking and publishing whether aircraft fly in accordance with approved flight paths. Nor are there enforcement mechanisms for taking action against airlines and airports that do not adhere to these paths. This can undermine trust between local communities and the aviation sector.
5. The CAA considers there are six key requirements for the effective delivery of airspace change:
- Leadership and narrative: demonstrable leadership from the Government setting out the role of airspace infrastructure and the case for reform and modernisation.
 - Policy: development and implementation of the necessary policy from the Government about how trade-offs between different parties should be resolved.
 - Strategy: a clear ends, ways and means masterplan setting how UK airspace as a whole should be reformed based on analysis and evidence of future growth aspirations.
 - Process: a clear CAA decision-making process for individual airspace changes based on transparency of process, genuine engagement with all stakeholders and robust evidence.

- Accountability: mechanisms to require change to happen and hold parties to account for delivery of change.
- Resource: the right capabilities and capacity across industry to deliver the strategy.

6. In this submission, we outline:

- The rationale for modernisation (paragraphs 8-10).
- The CAA's role in airspace management and modernisation. We also set out what the CAA is not in a position to deliver (paragraphs 11-17).
- The Government's role in airspace modernisation (paragraphs 18-22).
- Our views on the changes to airspace policy that the Department for Transport (DfT) is currently consulting on (paragraphs 23-29).
- The progress of the UK's Future Airspace Strategy, as well as existing issues with changes to lower level airspace (paragraphs 29-32).
- Airspace capacity issues pertaining to runway expansion in the South East (paragraphs 33-43).
- A summary of the challenges to modernisation (paragraphs 44-49).
- The CAA's existing airspace change process, and the significant changes the CAA is making to it (paragraphs 50-66).
- The merits of an Independent Commission on Civil Aviation Noise (paragraphs 67-70).
- Our views on aviation policy with regard to the UK's future relationship with the European Union (EU) (paragraphs 71-75).

7. UK airspace policy is informed by a broad number of stakeholders, including local communities, airlines, air navigation service providers, general aviation users, the military, and passengers as well as national and supranational bodies. The resulting framework can be complicated, but understanding the various interactions is crucial in appreciating the challenges to progress.

The rationale for modernisation

8. The success of the UK's aviation industry over the last 50 years has been dependent on the quality of the infrastructure that underpins it. A key component of this system is the UK's airspace. For commercial aviation, the UK airspace allows aircraft to move passengers and freight safely in and out of the UK. For the military, our airspace provides a training ground to allow for the protection of the UK's borders. For the General Aviation community it offers the ability to fly light aircraft, balloons, gliders, microlights and other forms of aircraft freely in many parts of the country.
9. Rising incomes, liberalisation of global regulations and greater competition between airlines and airports has boosted demand for civil aviation services in the UK. However, the design of the airspace has not kept pace with this demand or modern aircraft navigational technologies. Many of the routes in and out of the UK's major airports remain unchanged since the 1970s, and rely on fixed navigational beacons on the ground. While safe, these constrain capacity and growth. Changes have been made in a piecemeal, uncoordinated and reactive fashion. In parts of the country, this has created significant aircraft congestion leading, for instance, to a reliance on extended routeing and high levels of air traffic controller management of each flight to make the system work. This has the unwanted effect of increasing both emissions and noise pollution for communities on the ground.
10. In order to rectify this, the Government and the CAA have already been changing their respective policies and processes so that the needs of all stakeholders are taken into account. The CAA's reforms to its airspace change process have been aimed at improved evidence, transparency and stakeholder engagement. This will be particularly important as we look towards a third runway at Heathrow, which could ultimately introduce upwards of 200,000 additional flights a year into the UK's airspace.

The CAA's role in airspace management and modernisation

11. The CAA was established as a statutory corporation in 1971. It is independent of the Government, and its functions are set out in legislation, chiefly the Civil Aviation Act 1982, Transport Act 2000 and Civil Aviation Act 2012. The main statutory functions of the CAA in relation to airspace are: safety regulation of aviation in the UK within the global and European aviation framework; deciding whether to agree individual changes to the design of UK's airspace proposed by stakeholders (usually airport operators or NERL); and the economic regulation of the dominant airports with substantial market power (currently Heathrow and Gatwick) and of the provision of UK en route air traffic services (through the Air Traffic Services Licence for NATS (En Route) PLC, "NERL").
12. The CAA also plays a role in providing independent policy advice on airspace issues to Government, which includes: collaborating externally with national and international aviation organisations and regulatory bodies; advice on changes to UK airspace arrangements that might have an effect on the environment; and on proposed European legislation affecting aviation.
13. With regards to airspace modernisation, following the Transport Select Committee's last airspace inquiry, the CAA facilitated the development of the UK's Future Airspace Strategy in partnership with DfT, the MoD, the Irish Aviation Authority, NATS and the wider industry. The Future Airspace Strategy, which is the responsibility of the industry to deliver, was developed to ensure that UK airspace benefits from being supported by modern technology and is kept in line with the Single European Sky initiative (an EU initiative to harmonise airspace design and management across Europe). The strategy sets out a range of measures that could be adopted to deliver this reform, but contains neither a detailed blueprint of what should be implemented nor a detailed masterplan of airspace changes that are required.
14. The Civil Aviation Authority (Air Navigation) Directions 2001 from Government give the CAA a broad role in the development of airspace

policy and strategy. The CAA interprets this broad duty to include, for example, the economic and safety regulation of NERL, classification of different types of UK airspace, providing clarity about which international legal obligations UK industry should implement, and making decisions about airspace change proposals submitted by change sponsors. It does not, however, give the CAA overarching responsibility either to develop or deliver an airspace strategy that sets out a comprehensive masterplan describing all the airspace, operational and technical changes that are required and who and how they should be delivered. This is for three important reasons - potential conflicts of interest, the importance of unelected regulators not making major policy decisions and trade-offs, and the current absence of comprehensive mechanisms to ensure a strategy is delivered.

15. **Conflicts of interest** The CAA is the decision-maker in respect of airspace change proposals usually made by airport operators or NERL. In that role, the CAA must assess any proposal for airspace change against the requirements of section 70 of the Transport Act 2000. Were the CAA to take responsibility for designing a detailed airspace strategy and masterplan, it would not be possible for the CAA to discharge its decision-making role in respect of airspace change proposals independently and without at the very least an appearance of bias. This could increase both the likelihood of challenge to any airspace change decision and exacerbate the local community engagement challenge that currently exists.

16. **Regulators must work within a policy context established by parliament or the Government.** It is a well accepted principle and essential discipline that regulators who are unelected should not make key or strategic policy decisions. It would clearly not be appropriate for the CAA, as a technical and specialist regulator, to develop an airspace strategy that was inconsistent with the government's broader aviation strategy. The government is democratically accountable and best placed to determine the airspace strategy and airspace policy that serve the national interest, both in economic and environmental terms. For instance,

it would be unacceptable for the CAA to reach a view of the most efficient use or allocation of airspace, which had the effect of inhibiting the delivery of the Government's policy on airport expansion as expressed through a designated National Policy Statement.

17. **No comprehensive mechanisms are currently in place to require all the relevant parties to deliver.** Neither Parliament, through legislation, nor the Secretary of State, through Directions, have given the CAA a comprehensive suite of powers to require other parties to comply with any recommendations that the CAA might make in relation to airspace strategy. The Secretary of State has the power to issue environmental directions to air navigation service providers pursuant to section 39 of the Transport Act 2000. The CAA has no such power. Furthermore, the CAA cannot require stakeholders, such as airport operators, to bring forward individual airspace change proposals or to change their operating methods unless there is a significant safety consideration. In effect, this means that there is currently no mechanism whereby a coherent integrated airspace plan for the whole south-east of England can be devised and promulgated by any particular body.
18. The CAA strongly supports the publication of the Government's UK Airspace Policy consultation document in January 2017, which sets out the Government's role as being "*to set the policy framework that governs*" decisions relating to airspace changes. We will be responding to this consultation in due course.

The role of Government in facilitating improvements to the airspace

19. The Government has a leading role in the modernisation of UK airspace by setting key outcomes, the institutional framework and how trade-offs between different stakeholders groups should be resolved. Effectively, the Government needs to set out a holistic approach as a means of ensuring that the 'roads in the sky' fully reflect the scale and location of the facilities on the ground. The barriers to airspace modernisation that we will outline in this submission will require continued political leadership, a strong strategy, accountability and effective implementation.

20. No government since the 1970s has paid significant attention to airspace and the challenges modernisation presents. This is in part due to competing priorities, as well as the relatively recent emergence of understandable community concerns about aircraft noise and airspace change. The CAA has recognised this and within the framework of our role and legal duties, has taken a number of steps, including reforms to our own process for making decisions on airspace change proposals.
21. Further modernisation, particularly in the form of significant changes to the design of airspace in the South East, requires political leadership. For this reason the CAA has welcomed recent moves from the Government, and its consideration of airspace as a piece of critical national infrastructure. The CAA also recognises the strong support the Secretary of State has voiced for aviation as a key transport priority.
22. It is important that Government continues to work with all stakeholders to develop the appropriate framework to support the modernisation of the UK's airspace. This will require decisions to be taken about the trade-offs between interested parties, and Government has an active role to play in guiding the industry through this process and holding it to account for delivering the outcome.

DfT's airspace and noise consultation

23. The DfT is currently consulting on proposals to update its policy concerning airspace and noise and the draft guidance to implement them. The CAA works closely with the Government to ensure clarity around our respective policy and decision roles in airspace change.
24. Broadly defined, airspace change is the process by which an airport, air navigation service provider or other entity applies to the CAA to change the defined and published structure of UK airspace¹. The aim of the DfT's consultation is to update the current policy framework to allow the modernisation of UK airspace safely and in a way that delivers benefits to passengers and the economy weighed carefully with the interests of local

¹ Published in the UK Aeronautical Information Publication

communities. The DfT framework seeks to ensure that when decisions around changing airspace arrangements are made, they take proper account of the impact on local communities based on robust evidence, and are based on a transparent process that engages local communities at all stages of the airspace change process.

25. The CAA has worked alongside the DfT during the development of its proposed policy framework so that the changes to our process that we consulted on in 2016 have informed the DfT's development of its draft policy framework; and that framework is reflected in our proposed detailed guidance that we published for consultation on 31 March 2017.

Potential impact on current policy framework

26. The Government's proposals for airspace changes include, amongst other things, formalising the role of the Secretary of State in the process and making clear when s/he would get involved in individual airspace decisions. They also propose a new approach to considering noise impacts when developing proposals based on an assessment of their health impacts by introducing DfT's Transport Analysis Guidance (WebTAG) as the methodology for assessing the costs and benefit of changes. The CAA supports the increased certainty these proposals will introduce, and our proposed guidance takes all of them into account. They also propose introducing an Independent Commission on Civil Aviation Noise, which we discuss later in this submission.
27. In addition, the DfT has proposed two new tiers of change to airspace arrangements where it intends the CAA to have a greater statutory role than we do today. It describes these as Tier 2 and Tier 3 – with traditional airspace changes that changed the defined structure of UK airspace categorised as Tier 1.
28. Tier 2 changes are changes to air traffic control operational procedures that are planned and permanent and that can have similar environmental impacts to existing airspace changes, but are not currently regulated and do not involve a change to the defined structure of UK airspace. The DfT

proposes a new role for the CAA to assess the Tier 2 proposal in accordance with the Transport Act 2000 and identify an appropriate change and approval process with suitable consultation and engagement. This is a new role, and the CAA is not formally consulting on how we intend to enact a process until the outcome of the DfT's consultation is known, but is engaging stakeholders on their opinions, with a view to a future consultation.

29. Tier 3 changes are changes to operations that have a noise impact but are not under CAA regulatory control, are often outside the control of airports or air traffic control. For example, this could involve airlines using new aircraft types to fly existing routes or starting more flights to an existing destination along an existing route. Here, the DfT proposes that the CAA should establish a policy for industry to follow. For these changes, the requirement is proportionate to the fact that no actor has regulatory control over the types of change covered, and therefore the requirement is provision of information.

Progress of the CAA's Future Airspace Strategy in achieving its core objectives of reducing congestion, improving safety and taking advantage of new technologies to enable a more efficient airspace system

30. Following the recommendations of the 2008/9 Transport Select Committee inquiry into the use of airspace, the CAA facilitated the development of the Future Airspace Strategy alongside DfT, the MoD, the Irish Aviation Authority, NATS and the wider industry. Responsibility for implementing the strategy remains with the industry. The aim of the strategy was to guide the industry in modernising the UK's airspace; reflect the priorities of SES; and present a range of operational and technical options. Following extensive consultation, the Future Airspace Strategy was published in 2011. The stated vision of the Strategy is to establish a *“safe, efficient airspace that has the capacity to meet reasonable demand, balances the needs of all users and mitigates the impact of aviation on the environment”*.

31. The Future Airspace Strategy was ambitious in scale, and has delivered some benefits. While it is not appropriate for the CAA to outline industry's progress with implementation deployment-by-deployment, we believe the Strategy has been successful at realising the following benefits:
- a. **Increased collaboration** within the aviation industry around the modernisation programme. Before the strategy was in place, there was less awareness of airspace as a piece of national infrastructure in need of reform, and there was less dialogue between the industry stakeholders about their respective investment plans. There has been some alignment of industry investment plans, enabling greater dialogue and cooperation between competing commercial entities.
 - b. **High level guidance** about the factors that need to be addressed as part of airspace modernisation. The strategy itself was not intended to deliver the required changes, as that is the responsibility of individual industry parties, but has succeeded in creating some impetus for greater action and wide-scale airspace change.
 - c. **Research and development** programmes have received some funding through the UK en route charge paid by airlines for the FAS Deployment Facilitation Fund, which is worth £22.5 million over five years, enabling the industry to take advantage of new technologies. For instance, moving towards satellite systems for navigation (performance based navigation) has reduced the reliance on fixed navigational beacons on the ground, which opens up more airspace capacity.
32. Yet these are less significant changes than the overhaul of South East and London airspace that is needed. In this regard, and through early live trials and a number of other airspace changes, there are a number of important wider lessons that can be drawn from the initial phases of FAS implementation:
- a. Performance based navigation concentrates flights over communities - communities that are understandably and increasingly sensitive to

aviation noise, and have high expectations about airspace policy and decision making. All parties have become increasingly aware of this since the Future Airspace Strategy was launched in 2011 and is well evidenced by the research the DfT commissioned from the CAA into noise attitudes ([Survey of Noise Attitudes, 2017](#)). For instance, the Future Airspace Strategy research programme around performance based navigation demonstrated the impact that concentrated, satellite-based flight paths can have on the communities under particular arrival and departure routes. This sensitivity applies for short term trials as well as to longer term changes. At the same time, social media has enabled local community groups to share information about changes to airspace more readily, strengthening groups' ability to campaign effectively. These groups have placed greater expectations on some airports, NATS, the CAA and the Government to improve the quality of evidence, stakeholder engagement and transparency in decision making. We recognise this is an important feature of a modern democracy and therefore the policy and processes around airspace decision-making need to adapt.

- b. **The architecture of organisations involved in the planning and delivery of airspace change is complex** and while there are controls on deciding whether to accept proposed airspace changes (through the CAA and the Secretary of State's role), there is currently no comprehensive set of levers that would require all relevant stakeholders to require changes to occur. Delivery of changes is reliant on the airports, NATS and other entities deciding that it is in their individual interests to elect to propose changes. There needs to be a single party coordinating the various changes, highlighting whether all the potential changes in the short and longer term are consistent and feasible and being held to account for delivering the changes.

- c. **There is currently no mechanism by which action can be taken against aircraft operators or airport operators in respect of aircraft**

that do not adhere to approved flight paths. The CAA as airspace regulator does not have regulatory powers and tools that enable it to require airports to monitor whether aircraft are adhering to specified routes (e.g. Standard Instrument Departure) and to take enforcement action in respect of non-compliance, whether against airlines, airports, NATS or other entities (see paragraph 33). Airport operators may, but are not obliged to, apply financial incentives (through differential charges or penalties on airlines) to deter non-compliance with approved flight paths and are not required to monitor such compliance. The CAA does undertake a one off post implementation review approximately one year after an airspace change is implemented to assess whether the change delivers the benefits originally planned.

The essential changes that need to be made to UK airspace, particularly those associated with the development of an additional runway in the South East

33. The airspace in the South East is used by five large, growing, independently owned and competing airports, as well as by the General Aviation community and the military. It is in the process of being modernised through the London Airspace Management Programme (LAMP), a key component of the Future Airspace Strategy. LAMP aims to deliver some capacity improvements; improved punctuality through more systematic air traffic routings that require less air traffic intervention; and lower fuel burn. It is also the programme that will deliver a number of the UK's state obligations set through the SES and SESAR programmes (SESAR is a programme within SES that facilitates the modernisation of air traffic management systems across Europe).
34. The first phase of LAMP, phase [1a](#), was implemented in February 2016, with changes to the airspace used by London City and Stansted airports. These changes included the introduction of performance based navigation at London City, increasing the accuracy of departure routes, as well as a Point Merge arrival system for the airport. At Stansted, LAMP 1a introduced a new standard instrument departure to allow aircraft to climb

faster. It is worth noting that the original proposal for LAMP 1a was significantly more ambitious, with proposed changes also made to the departure routes at Gatwick Airport. However, Gatwick withdrew its support for the proposed changes due, as we understand, to the extent of community concerns.

35. The next phase, LAMP2, will require detailed change plans to be prepared, and will include more fundamental changes to the routes for Stansted, as well as for Heathrow, Gatwick and Luton airports (which are interlinked with those from Stansted). This phase of work may require decisions about the competing priorities of these different airports for airspace. In addition, LAMP2 will also need to factor in airspace changes to accommodate a third runway at Heathrow and an estimated extra 200,000 flights into the South East. LAMP2 will be a challenging and complicated programme, and will require significant quantities of specialist airspace design and community engagement resource within change sponsors.
36. UK policy and longstanding practice, in accordance with ICAO guidance (International Civil Aviation Organisation), is that NERL, the UK's en-route air traffic services provider, is responsible for airspace changes above 7,000 feet. Individual airports are responsible for airspace changes below 7,000 feet. This gives individual airport operators accountability for those routes closest to the airport and, therefore, those which create the greatest levels of noise for local residents. This distributed framework for airspace change means no single party holds an overarching masterplan looking at the consistency of proposed changes.
37. The current policy and decision-making framework for airspace changes was established at a time when three of the five main London airports (Heathrow, Gatwick and Stansted) were in common BAA ownership. Therefore, the overall level of competition between the five largest airports in the South East was very different from today. While the CAA recognises competition between airports has been hugely successful in improving services for customers, it has had the consequence of creating

different priorities for individual airports when it comes to airspace changes and modernisation.

38. Under the existing framework, the delivery of LAMP2 and a third runway will require NERL and all five major airports to *elect* simultaneously to plan, consult and implement a series of airspace changes. At present, there is no such masterplan for the package of airspace changes required, meaning that individual airspace changes are submitted by different entities and are considered on a first come, first served basis.
39. Given the scale of the LAMP2/ third runway challenge and that some airspace changes at some airports will be driven or influenced by airspace change at other airports, the coordination and cooperation required to achieve these changes under the current architecture would be substantial. Even if such cooperation is forthcoming, individual airports will act to protect their own interests and will be limited in the extent to which they can cooperate, so as to comply with UK competition law requirements.
40. It is crucial that the LAMP2 strategy is compatible with the Government's broader policy objectives, and getting this right should be a priority. While we recognise that some stakeholders might think the CAA is best placed to deliver either a master plan for airspace changes in the South East, or propose individual changes, the CAA does not believe this is possible as it would create a significant conflict of interest (see paragraph 14).
41. In summary, the LAMP2 and airspace changes needed for a third runway will be much more challenging to deliver under the current architecture than those changes that have already been delivered, as:
- They will involve creating new, concentrated routes over densely populated parts of London, albeit potentially offering respite.
 - They are likely to require decisions about which airports have priority access to airspace in both the short term (years) and long term (decades).

- There is no masterplan for the full suite of LAMP2/third runway airspace changes, meaning that airports, NERL and the CAA do not know whether an individual change proposed is consistent with future planned airspace changes over the short and long term.
- There are multiple competing commercial entities that would be required to cooperate at a time when their respective commercial interests may not be aligned.
- Other than Heathrow, which has an imperative to deliver airspace change for a third runway, the other entities (four London airports and NERL) do not have an obligation to bring forward airspace changes.
- Given the diffuse responsibility for airspace change, there is no comprehensive mechanism to *oblige* NERL or airports to plan and deliver the change. Nor is there a mechanism to hold them to *account* for delivering it.
- Neither the CAA nor the Transport Secretary (under the DfT's current policy proposals, the Transport Secretary would have a potential decision-making role on airspace changes) can directly get involved in designing airspace changes for both practical and legal reasons.

42. Given the nature of the decisions required, the CAA believes that further work is required by Government, the CAA and industry to: change the architecture's mechanisms to require a detailed masterplan for inter-related airspace changes to be prepared; to create a comprehensive suite of mechanisms to require change to occur; and to develop appropriate and proportionate enforcement mechanisms. Options for addressing this issue include:

- Requiring a single industry entity to produce a robust analysis of the airspace implications of industry's future growth aspirations. This should be the basis of preparing a masterplan that highlights the consistency and coherence of these changes and potential conflicts.

- Creating a comprehensive suite of powers for an individual or an organisation to direct a single industry entity, or a number of relevant entities, to deliver airspace change proposals.
- Creating requirements for adherence to approved flight tracks, where they exist, to be monitored and proportionate mechanisms to be in place to tackle non-conformity.

43. The CAA is currently in discussions with the Government about these issues and possible solutions.

The barriers to modernisation of airspace, including the environmental and community considerations arising from changes to the current arrangements for managing UK airspace

44. Aside from the barriers highlighted as part of our comments on the Future Airspace Strategy and the third runway referred to above (notably understandable local community sensitivity to noise and airspace processes, the absence of accountability measures and enforcement mechanisms relating to the use of airspace), there are other issues which prevent airspace modernisation.

45. Firstly, NERL had initially planned to implement LAMP2 in the current regulatory period (2015 to 2019 inclusive, known as Reference Period 2, RP2). However, in 2015 it was decided in light of several key challenges to delay the implementation of LAMP2 to the next regulatory period (RP3, 2020 – 2025) and instead take the opportunity to accelerate the implementation of new technologies and systems to replace ageing infrastructure. There was no effective regulatory mechanism to compel NERL to deliver this original plan. As airspace redesign has been delayed from RP2 to RP3 and plans for airport capacity expansion are moving ahead, it is critical that airspace change is delivered over the period 2020-2024.

46. As a result of these events, the CAA tightened NERL's licensing regime. A new requirement to develop, consult and publish detailed airspace and technology programmes for the remainder of the regulatory period was

included in the licence. In addition, the CAA may now appoint an independent reviewer to scrutinise NERL's reporting of, and delivery against, its airspace and technology programmes. These changes are intended as a step towards making NERL more accountable for delivery of its plans, by requiring more detail and scrutiny.

47. NERL is required to submit to the CAA its detailed airspace and technology plan up to 2020 by the end of March 2017. Given the scale of its investment plans, the CAA will consider whether regulatory mechanisms and incentives are required to strengthen NERL's accountability for delivering promised investment plans.
48. The proposed revisions to the regulatory regime for NERL that are before Parliament as part of the Vehicle Technology and Aviation Bill will modernise the regulatory regime for NERL and give the CAA appropriate powers to amend NERL's licence and enforce breaches against NERL's licence requirements.
49. Finally, it is worth noting that under the existing policy and legislative framework, and before any changes are introduced as a result of the Government's current airspace policy consultation, NERL has little accountability for the noise impacts for air traffic services it provides under its licence, for example where it changes its current vectoring practices. This is because there are no Government Directions to NERL (under section 39 of the Transport Act), nor guidance to the CAA in respect of air traffic services. However, if NERL proposes an airspace change, the CAA will require it to consider noise and air quality impacts as it does for any sponsor.

The effectiveness and adequacy of engagement with affected communities when planning and introducing airspace changes and the lessons to be learnt from recent trials, particularly at Heathrow and Gatwick

50. The Government and the CAA have both recognised that elements of their respective policy and processes do not meet expectations regarding transparency, evidence and the levels of community engagement.
51. The Government's current policy guidance to the CAA is that it will not usually be necessary for change sponsors to consult on temporary airspace changes or airspace trials due to their short term nature. However, the likely impact of the proposed change on the environment should be considered by the sponsor prior to implementation and this information used to help the CAA to determine whether a proportionate consultation is required.
52. In the case of Heathrow, an airspace trial can either be the testing of a new operational procedure within the existing airspace structure or the testing of a new airspace structure itself. The rationale for trials is different in any given case. In the instance of Heathrow's Operational Freedoms Trial, which completed in 2013, the purpose was to reduce delays and increase runway resilience by using both runways for arrivals when there were disruptive conditions. There were no changes to the existing airspace design.
53. As a result of some recent trials, such as the Gatwick trial that impacted the village of Warnham in 2014, significant concern has been expressed by local communities, particularly in regard to the noise impacts of the trials. The Government has recognised this, and as outlined above, in its current consultation is looking to introduce Tier 1C changes, which will, if introduced, ensure the airspace change process better covers airspace trials.
54. The Government has also listened to community concerns regarding changes to operational procedures that are permitted within the

established rules of Air Traffic Control, yet have the effect of changing long established air traffic patterns over the ground. See paragraph 28 of this submission for a summary of their proposed Tier 2 airspace change, which aims to address this issue.

55. With respect to permanent changes to airspace structures, the CAA is working to create a more engaging, transparent change process. In 2015, the CAA commissioned an independent consultancy, Helios, to conduct a review of such decision making processes (as set out in the CAA's publication, [CAP 725](#)). Helios concluded that there was a perceived lack of transparency and consistency in the airspace change process, particularly with regard to stakeholder consultation. In order to assess how the process could be made more open and transparent, how consultation with local communities and airspace users can be more effective, and how a more consistent evidence-base can inform decisions, the CAA conducted a consultation on a revised process between March and June 2016 (which is set out in the CAA's publication, [CAP 1389](#)). In October 2016, the CAA published its response to that consultation, in which we analysed all consultation responses and set out the revised process we are now developing.
56. Following that consultation exercise, the CAA is currently consulting on draft guidance to revise the airspace change process to ensure it is as transparent, impartial and evidence-based as possible. We recognise that we can do more to require better engagement by change sponsors with their local communities and be better engaged with stakeholders and communities ourselves. (In part, this will be achieved through a newly established Community Discussion Forum for general issues of process and policy, and with local airport communities are defined points in the revised airspace change process.) In introducing changes to our process, we are mindful of the need to act fairly, impartially and proportionately. The CAA is proposing changes to the current airspace change process because:

- The CAA needs a rigorous process for ensuring that we can make robust and lawful decisions about those proposals. We will not make a change simply because it enables modernisation; we will do so once we have also given consideration to the range of factors and stakeholders we have a duty to consider under section 70 of the Transport Act 2000. Airspace modernisation and a third runway at Heathrow will require the CAA to consider airspace change proposals on an unprecedented scale.
- Those affected should have the ability and opportunity to respond to consultation before a change is made. The CAA's decisions on airspace change must balance and take proper account of the needs and interests of all affected stakeholders.
- Airspace is a finite resource and there are competing demands for it from airspace users with differing needs (commercial air transport, General Aviation, military, unmanned aircraft and so on).
- Communities close to airports increasingly demonstrate their interest in the management of aviation noise and the impact it has on those communities. Some recent airspace change proposals have highlighted a lack of trust between some local communities, the aviation industry and the CAA as regulator. This can sometimes create an impasse on airspace changes – even when the outcome might improve the situation.

57. The revised process introduces new steps to provide greater oversight of proposals by the CAA in a transparent way, and increase certainty for sponsors and stakeholders around when they will have the chance to input; how the CAA will validate sponsors' work; and what evidence is necessary to secure CAA approval.

58. In introducing these changes, we are mindful of the cost to change sponsors of the process and the need for proportionality. In particular, we have scaled the process into proportionate 'Levels', with the most demanding process and consultation required only for those changes that have most impact on local stakeholders including communities. In these cases – known as Level 1- the new process would take a planned two

years, which compares with recent experience of around four years in respect of LAMP1a.

Environmental considerations

59. Consideration and assessment of the potential environmental impacts resulting from proposed airspace changes is necessary as part of the CAA's decision-making process, and it also enables those who are affected by the proposed change to better understand those impacts and engage in the decision-making process.
60. The CAA's proposed decision-making process is designed to ensure that the CAA considers all changes to airspace in line with the factors laid out in Section 70 of the Transport Act 2000. One of these factors is to take account of the DfT's environmental guidance. The proposed revisions to our regulation of airspace changes are based on the draft guidance on which the DfT is currently consulting. This guidance clarifies the environmental altitude-based priorities the CAA should consider when assessing change proposals at differing heights.

Altitude	Priority	Associated CAA Level
Ground – to below 4,000ft above mean sea level (amsl)	Minimise the noise impact of aircraft and the number of people on the ground affected by it, particularly with regard to noise disturbance above 51dB LAeq16hr* or 45dB Lnight**;	Level 1
At and above 4,000ft amsl – to below 7,000ft	Minimising the impact of aviation noise on populated areas – particularly with regard to noise disturbance above 51 dB LAeq16hr, but the CAA may also balance this requirement by taking into account the need for an efficient use of airspace and expeditious flow of traffic that minimises emissions	-Level 1
At and above 7,000ft	The most efficient use of airspace with a view to minimising overall aircraft emissions meaning that mitigating the impact of noise is no longer a priority	Level 2

61. The CAA's proposed Levels of airspace change reflect these differing priorities and afford stakeholders a clear way of understanding the likely environmental impacts of a proposed change.

** LAeq16hr is the standard measure of average aircraft noise over a 16 hour period.*

*** Lnight is the equivalent for a night period*

Increased community engagement

62. In contemplating any airspace change proposal, it is essential that the change sponsor considers the impacts on others and the implications those impacts may have, and engages with them appropriately. This includes other airspace users, airport operators, air navigation service providers, the general public and their elected representatives, and environmental interest groups. From previous experience, it is evident that the public have not had as much information and opportunity to engage in the process as they should have. We are determined to ensure in future that everyone has suitable information and opportunity to have their say on changes that might impact them.
63. Our proposed guidance sets out what we expect from sponsors in terms of engagement – both for permanent as well as temporary changes - what will be required for us to approve their submissions at each gateway, and what the CAA views as best practice in terms of consultation and engagement. This will include how sponsors engage with those communities who benefit from airspace changes through reduced aviation noise, who in the CAA's experience are considerably less vocal in the airspace change process than those adversely affected.
64. A prime objective of the airspace change process is that it is as transparent as possible throughout. Openness also allows change sponsors to see more clearly what is expected from them, and build trust between all involved. The default position is therefore that all material in relation to a proposal is published.
65. Airspace change sponsors will be required to use a new CAA-hosted portal for their formal consultation process. All material related to

proposed changes; consultation documents; consultation responses; and decision and implementation documentation will be published on the portal, which will be accessible to all. To ensure that stakeholders are confident their views are being heard, we will publish consultation responses and other feedback while the consultation period is ongoing.

66. The new airspace change process cannot and will not give everybody everything that they want with every change. The process is not designed to be a referendum on views, but it is designed to reach an outcome fairly, having regard for the views of all the various stakeholder groups and having considered those views in accordance with section 70 of the Transport Act 2000. To achieve this compromise outcome, there will have to be trade-offs where there are conflicting requirements, which could mean that some will 'win' and some will 'lose'. Every airspace change proposal is different and is considered on a case-by-case basis.

The merits of an Independent Aviation Noise Authority and desirability of classifying airspace within the national Infrastructure Commission's remit

67. The CAA welcomes the Government's proposal to introduce a new Independent Commission on Civil Aviation Noise (ICCAN). The revised airspace change process is based on greater transparency and ensuring, through regulation and oversight, that sponsors more effectively engage, consult and inform stakeholders throughout the process. ICCAN can provide an important input into that by offering advice on the transparency and efficacy of the consultation and decision-making process; providing best practice to sponsors on communities' needs; and reviewing noise mitigations to assess whether they are appropriate.
68. When the Airports Commission first proposed an Independent Aviation Noise Authority (IANA), the CAA saw some overlap between its intended role and our own, and suggested we could take on those roles. IANA was described as having powers, some of which potentially conflicted with the CAA's regulatory duties. More recently, the Department for Transport

modified the idea into its proposal for an ICCAN, without legal regulatory powers and with a role advising the CAA on aspects of our work (i.e. within our airspace change decision-making process). Given the perception of independence is fundamental to its success, being separate from all of the organisations involved in making airspace decisions would benefit ICCAN. The Government has proposed that ICCAN should be an arm's length body of the CAA (similar in stature to Air Safety Support International). We will work with Government to implement its preferred solution at the end of the current consultation.

69. The CAA considers ICCAN's independence will be an important ingredient to its success. We are aware that some have suggested that ICCAN has decision-making or enforcement powers in relation to airspace changes. We strongly caution against giving the new body such decision-making accountability. This is because airspace change decisions are about safety and a weighted consideration of other factors such as the interests of airspace users and local communities. Such decisions are not just about the issue within ICCAN's remit: noise. Therefore, unless it were to recruit and replicate the CAA's expertise in areas such as safety, air traffic operations as well as noise and air quality, it would not be equipped to make decisions that would be legally sustainable.
70. The CAA welcomes recognition from any party that airspace is a key component of the UK's infrastructure. In July last year we responded to the National Infrastructure Commission's call for evidence to suggest that they should have a strategic role making recommendations about airspace. Since then, a new policy consultation has been published by Government and the debate has moved on. At this stage we do not have a particular view on whether incorporation of airspace into the National Infrastructure Commission's remit would be of value at this stage. However, we do urge the Select Committee to recognise that many of the issues outlined above – those which are barriers to modernisation – are inherently political issues. They require trade-offs and balancing stakeholder interests, and therefore the framework for managing those trade-offs can only be set by an elected Government.

The UK's relationship with the European Union in terms of airspace management and any potential issues arising from Brexit

71. Safe, effective and coordinated air traffic control is essential to the operation of international air travel, and therefore is clearly in passengers' interests. It will therefore be important, once the UK leaves the EU, to retain at least a very strong degree of coordination with other European states.
72. Eurocontrol is an inter-governmental organisation which has operational responsibility for network management of air traffic operations in Europe. Membership of Eurocontrol is not dependent on EU membership, although a number of member states are members of both.
73. With regard to the UK-Ireland Functional Airspace Block (FAB, a SES initiative to create collaboration between neighbouring air navigation service providers), in the CAA's view there would be very little operational impact following a decision to withdraw from SES, as there was extensive collaboration before the requirement to have a FAB. If the UK chose not to be a part of the FAB post exit, it is not clear what the impact would be for Ireland.
74. There are both risks and opportunities associated with options that separate the UK's regulation of airspace from the EU's SES programme. Deciding on the balance between those risks and opportunities is a matter for the Government in its wider Brexit negotiations. The CAA is supporting the Government by responding to requests for evidence and expertise as they arise.
75. From a community perspective, the CAA believes the UK should retain the current framework for environmental and consumer protection standards post-Brexit. This would be alongside retention of common international safety standards and an open and competitive aviation market.

Conclusion

76. The key points of the CAA's submission are:
- Airspace is a key part of national infrastructure and should be treated as such.
 - Modernisation is necessary in the interests of passengers.
 - Aircraft noise at lower altitudes near airports is understandably unwelcome by local communities and is a more prominent issue because satellite based navigation is leading to more concentrated flight paths.
 - Trade-offs between stakeholders are a necessity when dealing with airspace changes. A clear policy framework is required to address them.
 - There are six factors for delivering success (leadership and narrative, policy, strategy, process, accountability mechanisms and effective implementation).
 - The Future Airspace Strategy has made some progress, but during its early phases of implementation, all parties have learned lessons about the architecture for airspace reform, policy and processes.
 - The CAA, the Government and industry all recognise the need for greater transparency and community engagement in the airspace process.
 - The Government and the CAA are taking action on leadership, policy and process. But focus is still required on architecture (accountability, implementation), addressing the absence of a coherent masterplan for the airspace design and enforcement.
77. Airspace management and modernisation are complex issues, and ensuring the safety of the UK's airspace remains the CAA's primary concern. Throughout this submission we have highlighted the difficulties that exist in modernising airspace, as well as the work that continues to be undertaken to overcome these challenges. Yet there is more work to do. The CAA, the Government and the industry all have the opportunity to create a system of design and implementation that works better for all

stakeholders. The CAA looks forward to working with the Committee and all stakeholders on these important issues.