

CAA response to the airports commission consultation on assessment framework

CAP 1172



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Introductory remarks

1. The CAA welcomes the Airports Commission's discussion paper on the framework for its phase 2 assessment of the shortlisted proposals published in its December 2013 Interim Report.
2. The CAA is the UK's specialist aviation regulator, and so has significant relevant expertise in certain areas. The CAA collects a broad range of statistics and survey data, and has drawn on these resources to provide analysis to the Airports Commission in order to inform some elements of its phase 1 process to sift proposals into a short list.
3. The CAA's previous contributions to the Airports Commission and other work on aviation capacity policy can be found at <http://www.caa.co.uk/default.aspx?catid=589&pagetype=90&pageid=14751>

CHAPTER 1

General comments

- 1.1 In its response to the Airports Commission's March 2013 consultation on sift criteria, the CAA recommended four key decision criteria, that the Commission should have regard to when considering options and potential solutions:
- **Demand-focused:** to ensure that any capacity solution is consistent with trends in demand and geared to deliver connectivity, choice and value for consumers.
 - **Financeable:** to ensure that any solution can be funded on the basis of airport charges at a level consistent with ensuring value for consumers;
 - **Safe:** to ensure that any solution is designed to maintain and where possible further improve the safety of the UK aviation system and is consistent with effective airspace management;
 - **Sustainable:** to ensure that any growth in capacity is consistent with environmental objectives, including balancing the needs of consumers with those of local communities.
- 1.2 The CAA recognised that these criteria may not be exhaustive and there may be other considerations that the Airports Commission, or Government, feels are valid.
- 1.3 However, the CAA considers that the four criteria which it proposed still have significant value for the Airports Commission's purposes. Therefore it would encourage the Commission when weighting its different objectives to give greater weight to those which better reflect the CAA's four criteria above.

CHAPTER 2**Response to consultation questions**

1. Are the objectives stated in Table 3.1 suitable for assessing the short-listed options?

2.1 The CAA considers that safety is an important objective in its own right, and the operational efficiency module seems insufficient to capture all aspects of it. Therefore, the CAA would recommend a separate objective around safety.

2.2 Whether safety becomes a separate objective or remains part of the operational efficiency objective, the CAA would propose the Commission changes the description in Table 3.1 from "To meet industry safety and security standards" to "To maintain and where possible enhance existing safety performance " for safety and "To meet industry security standards" for security.

2. Are there any other objectives that the Commission should consider, and if so what are they?

2.3 As noted above, the CAA considers that Safety should be split out as an objective in its own right.

3. Will the appraisal modules described in Appendix A be sufficient to analyse the short-listed options against the stated objectives?**Safety**

2.4 Should the Commission take the CAA's advice above, then it will need to generate a Safety appraisal module in addition to those proposed.

2.5 The CAA has provided an example of such a module for the Commission's consideration in Appendix A of this response. It suggests making an assessment of operational or financial risk that may arise as a result of safety mitigations and, where possible, to assess the proposals against a set of safety criteria or questions.

Noise

2.6 As you are aware, aviation noise is a fundamental issue in the process of expanding capacity in the south east. The CAA's position is that capacity expansion must be undertaken in a noise-neutral fashion, and comprehensive, transparent and sustained engagement with local communities is important if capacity expansion is to be a success. The CAA believes that generating a more comprehensive understanding of noise impacts is a key component to allow practical assessment of the short-listed options. As such, we welcome

your proposal to consider a range of different metrics as part of the assessment process, and we support the proposed metrics put forward.

- 2.7 One aspect the Commission should consider is that, in utilising LAeq and Lden measures, the use of different contours will produce different areas and numbers of people impacted by noise at the proposed level. However, they will be of a similar order of magnitude of one another, and likely to produce similar proportionate differences. For example, if one scheme impacts 250,000 people at 57dB LAeq and 600,000 at 54dB LAeq, it is fair to expect that a scheme impacting 25,000 people at 57dB LAeq will impact around 60,000 people at 54dB LAeq.
- 2.8 The CAA is aware of considerable controversy and debate over which contour is the 'right' one to reflect the onset of significant annoyance. The CAA's position is that it is vital to update our scientific understanding of noise annoyance, but to do this will require undertaking a comprehensive new social survey to understand people's current attitudes to noise. This will not be possible to do in the time the Airports Commission has available to it. In the meantime, we support the Commission's proposal to monetise noise impacts to both allow a greater range of impacts to a more granular level, and to provide an alternative to solely considering the population who can be considered significantly annoyed.
- 2.9 Finally, the Commission is right to reflect the importance of respite to communities. Further work should be undertaken to understand how respite will be affected by each proposal, and what impacts this will have on the affected communities. In addition, the impact of noise on newly exposed populations and areas, as opposed to increasing noise for those who are currently affected should be factored in to the assessment process.

4. Will the appraisal modules described in Appendix A be sufficient to construct business cases and sustainability assessments to enable the Commission to make recommendations and the Government to act on these?

5. Are the five components of the updated scheme design set out in Appendix B suitable for understanding schemes' potential performance against the stated objectives?

6. Is the level of detail in the components for the updated scheme design set out in Appendix B appropriate given the likelihood that some schemes may not progress to full stages of development?

- 2.10 The CAA considers that the level of detail proposed by the Airports Commission in Appendices A and B of its consultation document are sufficient for its purposes, with the addition of the safety module outlined in the answer to question 3.

APPENDIX A

Proposed safety appraisal module

Introduction

- A1 The UK has an enviable aviation safety record of which the industry is rightly proud. Civil aviation safety oversight arrangements in the UK are divided principally between the DfT and the Civil Aviation Authority (CAA). Increasingly, however, the European Commission (EC) and the European Aviation Safety Agency (EASA) are playing a significant role. As a signatory to the Chicago Convention, the UK would also expect to conform, to the maximum extent possible with the provisions of the International Civil Aviation Organisation (ICAO).
- A2 In order to be licensed to operate, all aerodromes and associated Air Traffic Control (ATC) units are expected to meet safety standards or put in place mitigations addressing the risks that the standards intend to alleviate. Often the safety mitigations required will have an effect on other operational performance such as the likely capacity, noise footprint, or use of the aerodrome. The more well established a procedure is at other airports or through the availability of international standards and recommended practices, the easier it will be to determine whether the mitigation is a) suitable for the risk it is trying to address and b) anticipate other impacts. Conversely, the more innovative a proposal, the greater the task of safety assurance (i.e. will the proposed mitigation address the risk) and the harder it will be to predict the suitability of any particular mitigation measure.
- A3 This module outlines the key safety related legislative requirements that an expansion of capacity would have to meet, the likely process for receiving formal safety assurance from the oversight bodies, and the safety assessment methodology proposed by the Airports Commission for Phase Two.

Safety Legislation

- A4 The primary legislation dealing with aviation matters in the UK is the [Civil Aviation Act 1982](#) (last updated in 2012). This is supplemented by specific provisions in other primary legislation such as the [Transport Act 2000](#), the [Airports Act 1986](#) and the [Railways and Transport Safety Act 2003](#). There are also specific elements of European legislation that are directly applicable through the Single European Sky or EASA implementing rules and regulations.

- A5 For the purposes of new runway capacity, there are two main areas where safety legislation will apply and where proposers will have to satisfy first the Airports Commission and later assure the Civil Aviation Authority and/or EASA that their proposals meet the necessary safety criteria.

Aerodrome Safety

- A6 The [Air Navigation Order \(ANO\) 2009](#) requires that, in the UK, flights for the public transport of passengers, or for certain types of flying instruction, take place only at a licensed aerodrome or a government aerodrome. The CAA issues licences to aerodromes which establish that they have been inspected and found to meet safety requirements. This licensing process ensures continuous oversight of safety standards.
- A7 Commission Regulation (EU) No. 139/2014 on aerodromes was published on 14 February and will come into force on 6 March 2014. This contains EASA Implementing Rules and Acceptable Means of Compliance, and existing CAA-issued aerodrome licences will be converted between 2014- 2017. However, any new aerodrome infrastructure will be certified in accordance with this regulation.
- A8 The CAA's Procedures for Changes to Aerodrome Infrastructure ([CAP 791](#)) provides guidance on the procedures to be used to notify the CAA of developments on an existing aerodrome and other changes to the physical characteristics of an aerodrome. CAP 168 contains the application process for an aerodrome licence and describes standards required at UK licensed aerodromes relating to its management systems, operational procedures, physical characteristics, assessment and treatment of obstacles, visual aids, rescue and fire-fighting services and medical services. The content of [CAP 168](#), Licensing of Aerodromes will be replaced by EASA Implementing Rules and Acceptable Means of Compliance in 2014.
- A9 In addition, consideration should also be made of ICAO guidance on parallel runway operations ([Simultaneous Operations on Parallel or Near-Parallel Instrument Runways \(SOIR\) ICAO Doc 9643](#)) as a founding principle for any twin parallel runway designs, as a significant proportion of the challenges currently associated with safety assurance of parallel runways result from inadequate spacing between parallel runways.

Airspace Safety

- A10 The Single European Sky (SES) initiative was set out in four European Union legislative measures which came into effect in April 2004, the key one of which is the [Framework Regulation](#), which established the European Commission as the regulator for the civil sector and the Single Sky Committee to assist it in its regulatory activities. In 2007, the Commission published "[Single Sky II - Towards a more sustainable and better performing aviation](#)" which formed the basis of the

Commission's SES II Package. The SES II package consists of five main pillars: performance, safety, technology, airport capacity and the human factor. The CAA is the Airspace Approval and Regulatory Authority for the UK and is designated as the National Supervisory Authority (NSA) by the DfT for the purposes of SES legislation.

Safety Assurance Process

- A11 Safety assurance can only be accepted after the proposer approaches the authorising authority (likely to be the CAA) with a fully detailed concept of operations for how it intends to meet the various safety requirements placed on it by the applicable rules and regulations. Since these details may change, for example as a result of the conditions placed on an operator by planning consent, this can only happen following the Airports' Commission's final report, the Government's publication of its Airports National Policy Statement and a successful planning application by the operator. Also, some of the sign-off might not be possible until the operation itself can demonstrate compliance – permission to operate would be given so that the operator can demonstrate that the concept works as intended (potentially with further mitigating action required to ensure the concept meets all requirements).
- A12 However, informal contact can be expected much earlier than this to flush out any key issues and establish what level of evidence / mitigation is likely to be required to demonstrate compliance and achieve safety 'sign off'.
- A13 Whilst the legislation dictating the current safety rules is listed in the previous section, the following list gives some idea of the sort of safety aspects which are covered:

Aerodrome safety

- Compliance with Commission Regulation (EU) No. 139/2014, and as amended.
- Mature and effective mechanisms to deliver safety assurance either of the planned changes, or of the new-build facility (Most significant projects involve the use of third party suppliers. The accountability for the safety of all aspects of a service rests with the provider – and this includes third party oversight).
- Approval of equipment, personnel and procedures.
- A demonstration of the safety significance of the sum of the changed parts, as well as individual systems safety cases (some organisations use a Safety Plan, but there are other ways to do this).
- Public Safety Zones would need to be modelled in accordance with the extant DfT Policy.

Air Traffic Control provision safety

- Compliance with [EC 1035/2011](#) (for hazard identification and risk assessment and mitigation). The CAA would provide safety oversight in compliance with [EC 1034/2011](#).¹
- ATC procedures compliant with [CAP 493](#) (MATS Part 1) and associated Radio Telephony phraseology in [CAP 413](#) (consideration should also be made of ICAO documents which have not been incorporated into ATS CAPs).
- Revised unit ATC procedures reviewed and updated as specified in CAP670.
- Any new ATC equipment commissioned to support a new airport or expansion of an existing airport would require safety assurance and compliance with CAP670 requirements.

Airspace

- The provision of new infrastructure is likely to drive change either at a system level or on other third parties, in which case, acceptable safety assurance will be needed outside the immediate airport development area. Currently the proposer would be required to comply with [CAP 724](#) and [CAP 725](#) on the Airspace Change Process to ensure that procedure and airspace design met the necessary requirements and the appropriate consultation had been completed.

Assessment Methodology

- A14 As part of the updated scheme design and business case, applicants should submit an initial indication of how they would expect to demonstrate compliance and what they expect the key safety risks of their proposal to be and the likely mitigations.
- A15 The CAA would then undertake a pragmatic qualitative assessment of that submission (where necessary supported by other bodies such as NATS or EASA), requesting clarification where appropriate, likely supported by meeting(s) with the applicants to discuss the key issues.
- A16 This assessment would attempt, as far as possible in the available time and level of detail of the proposals, to answer safety related questions on aerodrome design and operation, air traffic control, airspace and safety management. Questions will be focussed on: whether the proposal meets current safety standards and criteria; what effect it will have on the risk of known safety threats such as runway crossings, runway incursion and excursion, airborne conflict, etc.;

¹ The legislation is likely to change slightly in 2017 when a new ATM regulation is published, encapsulating 1034, 1035 and the principles of ISO 15026.

and what mitigations are likely or suggested to be effective in addressing areas of concern.

- A17 The resulting assessment could then classify aspects of the scheme based on the likely risk that safety mitigation may affect the operational design or cost²:
- Tried and tested methodologies in use at other locations that are underpinned by existing international regulatory requirements (ICAO SARPs, Acceptable Means of Compliance (AMC), Guidance Material, EASA IRs, experience gained by from other NSAs/NAAS) and there is ample evidence that can be drawn from other operational experience in the UK or other parts of the world to support it, even if it is being applied with minor modifications.
 - Most aspects of the scheme are covered by tried and tested methodologies in use at other locations that are underpinned by existing international regulatory requirements (as above). However, some aspects are either innovative and require more substantial evidence to demonstrate its safety and/or only have operational experience in environments significantly different from that in the UK.
 - At least one significant aspect of the scheme requires designs which have not been implemented in a similar operating environment to the UK and which are not underpinned by existing international standards or supported by guidance material or AMC. The proposer would be required to do significant testing, trialling and modelling work to provide evidence to prove that the concept was feasible and safe. The regulator may be required to adopt new approaches to safety oversight and approval which currently do not exist. New regulations may be required.

2 The CAA 'rating' does not guarantee eventual approval. The CAA's actions, advice and guidance will be based on information/risks as advised or known but cannot take into account future changes or unforeseen circumstances.