

CAA Review of UK Civil Air Displays: progress report

CAP 1351



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Introduction

The safety of the public, whether in the air or on the ground, is the first concern of the Civil Aviation Authority (CAA). Our purpose is to minimise the risks associated with aviation. We do this by ensuring that the regulatory framework is well-designed and by taking action to see that the standards established in that framework are met by pilots, aircraft operators, aerodromes, engineers and air traffic controllers. We take every opportunity to learn from events that will help us to enhance the safety measures, activities and regulations that we implement.

The tragic accident that happened on the 22 August 2015 at the Shoreham Airshow has served as a stark reminder of the risks involved in air displays.

In the immediate aftermath of the Shoreham tragedy, we promptly introduced temporary precautionary measures to:

- ground all Hawker Hunter aircraft;
- restrict similar jet aircraft display manoeuvres over land; and
- implement three additional risk assessment criteria on all future civil air displays, some of which have resulted in further precautionary safety restrictions being put in place.

These restrictions remain in place and will do so until further notice.

The CAA also announced that it would conduct a robust evaluation of existing guidance, processes and all regulations relating to civil air displays. Our own evaluation will be tested thoroughly by a panel of independent experts, whose role is to challenge our thinking and help us to identify practicable improvements.

The accident at Shoreham is the first since 1952 that has resulted in the death of a member of the public. Even though accidents of this nature have been rare it is right that we now review the framework within which air displays take place. It is also right that we consider what additional risk-based measures can be introduced. Civil air displays in the UK must operate to the very highest safety standards.

This report sets out the progress we have made to date and explains the next steps we will be taking. By way of background this report also sets a description of the regulatory framework that governs flying displays.

The Shoreham accident is not the focus of this work, but is currently being investigated by the Air Accidents Investigation Branch (AAIB) and Sussex Police. An Inquest has also been opened by the West Sussex Coroner. The CAA will offer whatever support and assistance possible to each of these enquiries.

The full terms of reference for the CAA review can be found at Annex A, and more information about public air displays in the UK and our review can be found on our website at:

<http://www.caa.co.uk/default.aspx?catid=3006&pagetype=90>.

CAA air display review

As set out in paragraph 6 of the terms of reference of the CAA's Civil Air Display Review we will consider all aspects of UK civil air displays including:

- the competency and experience of pilots flying at air displays;
- the attitudes of pilots and organisations to safety standards;
- the skill levels pilots flying at air displays must have to perform different aerobatic manoeuvres;
- the physiological challenges of, and medical fitness to perform aerobatic, high performance and display flying;
- the age, condition and performance, as well as the regulatory framework that governs aircraft used at air displays;
- the range of permitted manoeuvres, in particular for high performance or vintage jet aircraft;
- the content of the air display; and
- location and characteristics of the air display venue, including displays not over a recognised aerodrome, coastal locations, and the surrounding area/infrastructure.

In each of these areas we are going back to first principles. We will:

- assess the adequacy of the current regulatory framework for aircraft within the scope of the review
- assess the adequacy of current provisions for pilots within the scope of the review
- assess the safety objective of each such provision
- assess whether the safety objective remains sufficient in the light of the Shoreham and other incidents
- assess the impact location may have on an air display
- assess whether there is additional evidence to amend the provision
- **make recommendations for changing current provisions, with an indication of the expected benefits for public safety and the likely impacts on the aviation community.**

Progress report structure

This report comprises four principal sections which cover different aspects of our review:

- **The regulatory framework and air display safety assurance** - this section explains the overarching regulatory framework and safety assurance principles which govern the CAA's oversight of the development, organisation and performance of civil air displays
- **Air display locations** - this section describes the considerations of specific air display sites
- **Air display aircraft** - this section describes the considerations concerning airworthiness of the aircraft which participate in air displays
- **Air display people** - this section describes the considerations around the fitness (attitudes and behaviours), skills and competencies as well as the medical requirements of those involved in air displays

The final section summarises our focus on the work we will undertake to deliver our next report and recommendations.

We also welcome contributions and feedback from interested parties and have set up a dedicated email address to which comments can be sent: airdisplayreview@caa.co.uk

The regulatory framework and safety assurance

Aviation activity in the UK is governed by a mix of international, European and domestic legislation, the primary focus of which is to protect consumers and the public. This ranges from the minimum safety standards laid down by the International Civil Aviation Organisation (ICAO), European legislation on safety issues such as pilot licensing, and domestic regulation on airspace. The Air Navigation Order 2009 (as amended)¹ is the domestic legislation that the CAA uses in its day-to-day business.

The CAA is responsible for the regulation of civil flying displays in the UK. Regulation comprises two types of activity: (a) taking action to see that regulatory standards are met by those to whom they apply and (b) making sure that those regulatory standards are set at the right level. We set out the safety standards the air display community must achieve in our publication *Flying Displays and Special Events: a guide to safety and administrative arrangements*². This publication explains to organisers and participants of air displays the measures they must take to protect the safety of their participants and spectators.

The guidance was first published in 1973. It has been regularly reviewed and, where necessary, updated to take account of developments in air displays and, following previous incidents, to address safety recommendations made by the Air Accidents Investigation Branch. The guidance was re-issued in February 2015 in preparation for the 2015 air display season.

Flying display legal requirements

Within the Air Navigation Order (ANO) there are specific requirements for flying displays in the United Kingdom. These place legal responsibilities on both the organiser of a flying display - the Flying Display Director (FDD) – and each participating pilot. Before putting on a flying display the FDD must obtain permission in writing from the CAA, and all civil display pilots must hold a display authorisation.

Air display permissions

Before the CAA can grant a permission we must be satisfied that someone is fit and competent to be an FDD. We consider the FDD's previous conduct and experience, dependent upon the size and complexity of the flying display, as well as the proposed organisation, staffing levels and other arrangements.

The CAA publication *Flying Displays and Special Events: a guide to safety and administrative arrangements* states that at larger air displays, comprising seven or more

¹ www.caa.co.uk/CAP393

² www.caa.co.uk/CAP403

aircraft, a Flying Control Committee must be set up. The role of the Committee is to assist the FDD in monitoring display standards; to provide specialist knowledge for specific display items; and to offer expert scrutiny that may be required during the event in the case of any infringement of the regulations. The FDD remains in overall control of an air display event.

Throughout the flying display the FDD must be able to communicate with all the appropriate agencies, such as the emergency services and the flying display participants. Where the FDD is situated in a different location to the air traffic services unit, a fixed communications link must be in place to enable instant two-way communications in the event of an emergency.

A permanent link between the FDD and the commentator must also be in place to allow liaison if programme changes are made, for example due to changing weather conditions or should an emergency should occur.

When granting a permission, the CAA stipulates where the display line should be in relation to the spectators. The amount of separation depends upon the speed of the aircraft and the type of display - flypast or aerobatic. A small number of approved display teams, such as the Red Arrows, may be given special permission to fly above a crowd. However, all other aircraft are prohibited from doing so.

Display pilot authorisations

All display pilots must have an individual display authorisation issued by the CAA, as well as a valid pilot's licence with a current class, type rating or approval.

Initial display authorisations are only granted following an assessment of the pilot's previous flying experience and a flight test conducted by a CAA-appointed Display Authorisation Evaluator (DAE). Additional specific advice and guidance is also given to a display pilot in meetings with the DAE. The CAA will refer any pilot who is seeking a Display Authorisation (DA) to a DAE with expert knowledge in their specialist discipline. DAEs can only be appointed:

- on the written recommendation of the CAA or another registered specialist flying organisation;
- if they hold a valid pilot's licence; and
- if they have held their own DA for at least three years.

In addition, they will usually still be an active display pilot.

There is no regulatory minimum experience requirement for a pilot to apply for a DA. The CAA does state, in *Flying Displays and Special Events: a guide to safety and administrative arrangements*, the minimum levels of experience we would expect to see. In considering whether to issue a DA or not, the DAE will examine the pilot's documentation, such as their log book, their licences, and aircraft paperwork. The DAE will also conduct

an oral interview. An interview will cover matters such as the sequence the pilot would like to perform, their knowledge of the limitations of the aircraft, their emergency planning, as well as their personal motivation, attitude, philosophy and reasons for wanting to become a display pilot. The DAE may ask a pilot to demonstrate the aerobatic manoeuvres they want to perform if it is the first time they are doing so.

The first DA expires after six months. Successful revalidations are valid for 13 months from the date of the evaluation. If five years or more should elapse between evaluations the pilot must follow the full initial DA process.

Safety assurance

The safety of any air display event is the responsibility of a number of different individuals and organisations. As well as the Flight Display Director, an air display event may involve an event organiser, the local authority, the emergency services and the Health and Safety Executive. Each will operate within their own guidelines and regulatory framework, co-ordinating with each other.

This review provides the opportunity to assess whether the regulatory framework fully enables appropriate and effective safety management for displays with clear and understood demarcation of roles and responsibilities.

In the next stage of the review we will assess the relationship between the controls that the regulatory framework provides, past outcomes and predictable sources of risk.

We will review whether the existing rules and checks that regulate the content and the sequence of the air display itself are working as expected.

The CAA has a number of roles in relation to air displays, covering the regulation of those that organise and those that participate in them and the provision of advice, guidance and assistance to display organisers, in all cases in the interests of the display audience and the wider public. We will review how effectively these different roles are discharged.

Air display locations

In the UK, more than 300 civil flying displays take place each year. These events take place in all parts of the country and in a diverse range of locations.

At each location the Flying Display Director (FDD) must assess:

- for over land displays, the suitability of the surfaces used by aircraft for take-off, landing and taxiing;
- the take-off and landing distances available and required;
- any obstructions in the area;
- the proximity of congested areas as well as sensitive or restricted areas;
- the presence of livestock or wildlife conservation areas;
- the proximity of controlled airspace and other locations where other aircraft may be flying; and
- the availability of clear entry and exit routes for emergency services vehicles suitable to the size of air display.

The FDD must also consider the location and positioning of spectator enclosures and car parks.

We have begun to consider the need to mitigate further the risks and issues presented by the differing geographical characteristics of air display locations – this includes, for example, the differences between ‘coastal’ and ‘inland’ displays. We are also considering the relevant rules and regulations relating to where air displays take place.

Geographical requirements

The geography of each display site is different. While many flying displays are held at licensed aerodromes and can take advantage of existing facilities available at the site, many are staged at other venues. All potential obstacles and hazards in and around the display arena must therefore be considered as part of an individual application to host an air display. The CAA’s publication, *Flying Displays and Special Events: a guide to safety and administrative arrangements*, sets out what must be considered when assessing the suitability of a venue. This includes the proximity to sensitive sites such as hospitals, schools and power stations, among a number of other criteria.

We will consider these existing criteria and whether others should be developed.

For seafront displays, a 'Maritime Exclusion Zone' or local equivalent must be established after consultation with the coastguard and/or the local maritime agency. There is no similar exclusion zone for displays over land.

We will investigate whether additional site specific rules would be useful and practical for 'inland' displays. This work will consider, in particular, how best to address such risks as are presented by the proximity of major public roads to a display site.

The CAA understands the desire of some members of the public to congregate outside of the airshow arena. The CAA has no powers to exclude members of the public from areas around an air display site.

We will investigate further how those holding an air display might work with landowners, local authorities and police forces to manage the potential risks of the general public congregating outside the official air display arena.

We will also investigate whether additional measures are needed to communicate with members of the public about the risks associated with air displays.

Air display planning and oversight

CAA experts visit a significant number of air displays each year to:

- monitor safety standards
- confirm the rules are being complied with
- identify measures that might further enhance safety standards.

Similarly CAA Inspectors regularly audit all licensed aerodromes where land-based air displays may take place.

We will investigate how the intelligence and information that is gathered by CAA staff might be better utilised in the planning of air displays to further enhance safety.

Air display aircraft

The UK civil air display fleet includes a wide range of aircraft types and classes, from microlights and balloons to large ex-military aircraft.

The airworthiness of an aircraft involved in civil air displays is regulated through either a Certificate of Airworthiness (CoA) or a Permit to Fly (PtF). A Certificate of Airworthiness is an approval for aircraft that adhere to the International Civil Aviation Organisation's (ICAO) standards. A Permit to Fly is issued according to published criteria that include conditions and limitations under which the aircraft may be flown and maintenance requirements that must be met.

The more complex an aircraft is, the greater the level of organisational and operational support required. Display aircraft with a CoA have such support irrespective of their size. Due to their age, however, very few ex-military aircraft have support from the original manufacturer. The CAA therefore requires the active involvement of a support organisation for the most complex ex-military PtF types of aircraft. In other cases, reliance is placed on the combination of a maintainer working with a continuing airworthiness management organisation to support the aircraft in lieu of the designer or manufacturer.

The absence of original support for many of these older aircraft means that particular care may be needed to maintain full knowledge of the service history of and experience in relation to an aircraft and any specialist reliability measures applied in the past. This may mean that additional specialist knowledge and expertise are required in making some airworthiness decisions.

Many of the older aircraft have effectively been rebuilt from scratch to gain their PtF, which reduces the challenge of 'ageing aircraft'. It is therefore the ex-military aircraft that are restored rather than rebuilt that will warrant particular attention.

While all aircraft used in air displays have to be approved, we know that the deterioration old aircraft suffer over time can create challenges when assessing whether they are fit to perform the range of manoeuvres planned within a display. This may be compounded by fewer people with the direct experience required to approve a specific aircraft being available.

Air display aircraft: airworthiness - in the next phase of the review we will consider what more can be done to address the challenge of maintaining ageing aircraft, including whether current airworthiness and maintenance checks should be enhanced. We will also look at the interaction between airworthiness and operational issues and how this can be properly assessed.

All aircraft that participate in an air display must be able safely to perform all of the manoeuvres that comprise their display. For older aircraft conducting flying displays, in particular the ex-military jets and piston-engined aircraft that operate on Permits to Fly, performance and permitted manoeuvres are normally documented in Pilot's Notes that were used in military service. These notes will be modified where necessary to document the differences between military and civil flying. When granting Permits to Fly, the CAA specifies permitted aerobatic manoeuvres in the Airworthiness Approval Note, basing this on the Pilot's Notes, the aircraft's service history, accident record or the result of a CAA evaluation flight test. Where a PtF is issued with mandatory provisions documented in the Pilot's Notes or an Airworthiness Approval Note, these must be adhered to by anyone flying the aircraft.

Air display aircraft: operation - we will consider whether we need to apply restrictions to the manoeuvres that certain types of aircraft are permitted to perform at displays, and whether or not the precautionary restrictions introduced after the Shoreham incident continue to be required.

Air display people

The performance of people, such as the Flying Display Director and the pilots participating in civil air displays, is critical to the event being conducted safely. We are looking at the regime that considers whether someone is sufficiently qualified, skilled and experienced enough to organise or perform in displays, as well as whether they are medically fit and have the right attitudes and behaviours to perform these functions.

Skilled and competent personnel

The CAA assesses the fitness, skill and competence of all display pilots and issues licences and display authorisations as appropriate. This is based on assessments of previous flying experience and through a number of thorough tests conducted during the authorisation processes.

We will thoroughly investigate the fitness, competency and experience levels required before display permissions or authorisations, including re-evaluations, are granted.

Medical and physiological fitness

The CAA also assesses the medical and physiological fitness of pilots. Medical standards for display pilots are derived from the requirements to hold applicable licences for the aircraft used in displays. All pilots, including display pilots, must be medically fit to fly their aircraft and to perform all manoeuvres in their display sequence safely.

Compared with commercial or private flying, during a display the aircraft is likely to be flown closer to, or at, its certificated limits. Such manoeuvres place additional physiological stresses on the body and require increased physical and mental performance and capability.

In the next stage of the review we will look at whether the existing standards are sufficient for the medical and physiological risks that surround those who fly in air displays. We will also look at the quality of assessment of a pilot's recent and current medical history. In doing this we will particularly focus on risks arising from manoeuvres that generate high levels of gravitational stress for pilots.

Fitness/psychological

The CAA also assesses whether display pilots are fit in terms of attitudes and behaviours. The CAA's publication *Flying Displays and Special Events: a guide to safety and administrative arrangements* sets out the material and procedures for the assessment, granting and renewal of a Display Authorisation.

We know that there are a number of potential psychological and behavioural issues, such as high levels of stress and overwork, that if unidentified or poorly managed can be the cause of or contribute to an accident.

We will investigate how fitness and psychological factors are considered within the existing display authorisation and oversight processes. We will review the current assessment criteria, definitions of competence, responsibilities and who should carry out the assessments.

Next steps

As set out in this Progress Report, our review of UK civil air displays has identified four key themes for investigation:

- the overall regulatory framework;
- air display locations;
- air display aircraft; and
- air display people.

Within each of these themes we have identified areas we believe need further attention. These are listed below:

Overall regulatory framework

- We will assess the relationship between the controls that the regulatory framework provides, past outcomes and predictable sources of risk.
- We will review whether the existing rules and checks that regulate the content and the sequence of the air display itself are working as expected.
- The CAA has a number of roles in relation to air displays, covering the regulation of those that organise and those that participate in them and the provision of advice, guidance and assistance to display organisers, in all cases in the interests of the display audience and the wider public. We will review how effectively these different roles are discharged.

Air display locations

- We will look into the criteria that need to be assessed regarding the suitability of an air display venue and consider whether other criteria should be added to the list.
- We will investigate whether additional site specific rules would be useful and practical for 'inland' displays. This work will consider, in particular, how best to address such risks as are presented by the proximity of major public roads to a display site.
- We will investigate further how those holding an air display might work with landowners, local authorities and police forces to manage the potential risks of the general public congregating outside the official air display arena.
- We will also investigate whether additional measures are needed to communicate with members of the public about the risks associated with air displays.

- We will investigate how the intelligence and information that is gathered by CAA staff might be better utilised in the planning of air displays to further enhance safety.

Air display aircraft

- Air display aircraft: airworthiness - in the next phase of the review we will consider what more can be done to address the challenge of maintaining ageing aircraft, including whether current airworthiness and maintenance checks should be enhanced. We will also look at the interaction between airworthiness and operational issues and how this can be properly assessed.
- Air display aircraft: operation - we will consider whether we need to apply restrictions to the manoeuvres that certain types of aircraft are permitted to perform at displays, and whether or not the precautionary restrictions introduced after the Shoreham incident continue to be required.

Air display people

- We will thoroughly investigate the fitness, competency and experience levels required before display permissions or authorisations, including re-evaluations, are granted.
- In the next stage of the review we will look at whether the existing standards are sufficient for the medical and physiological risks that surround those who fly in air displays. We will also look at the quality of assessment of a pilot's recent and current medical history. In doing this we will particularly focus on risks arising from manoeuvres that generate high levels of gravitational stress for pilots.
- We will investigate how fitness and psychological factors are considered within the existing display authorisation and oversight processes. We will review the current assessment criteria, definitions of competence, responsibilities and who should carry out the assessments.

In the next stage of this review we will engage with local authorities, those who attend or have an interest in civil air displays, and any other relevant communities, other regulators, as well as the air display community, and the wider civil aviation sector. Where possible we are also keen to learn lessons from abroad and from the military

We will develop recommendations over the coming months. Our progress and emerging recommendations will be subject to challenge by the independent Challenge Panel. We will publish our final report early in 2016.

Contact the review team

If you would like to contact the Review Team to discuss any aspect of the UK civil air display review, you can email us at airdisplayreview@caa.co.uk.

Annex A

Terms of reference

Introduction

1. Following the tragic accident at the Shoreham Air Show on Saturday 22 August 2015 that resulted in the loss of life of eleven members of the public, and which left the pilot critically ill in hospital (as of 4 September 2015), the UK's Civil Aviation Authority (CAA) is reviewing the arrangements for public flying displays in the UK.
2. The CAA's guidance ***Flying Displays and Special Events: A Guide to Safety and Administrative Arrangements***³ (CAP 403) was reviewed and updated earlier this year. The CAA believes however that it is right to go further and to carry out a comprehensive review to ensure that proportionate, risk-based measures are in place to reassure the public, the aviation community and the CAA Board that all is being done to ensure public air displays in the UK operate to the very highest safety standards and that air shows remain safe.
3. The Military Aviation Authority (MAA) will support this Review and ensure that any lessons for military air displays are read across into military regulations⁴, which were also reviewed and updated in parallel with the earlier CAA work.
4. The Review is supported by UK Department for Transport Ministers.
5. The Review Sponsor will be Mark Swan, the CAA's Group Director for Safety and Airspace Regulation (SARG). An independent, external panel of experts – the Independent Challenge Panel – chaired by Geoffrey Podger CB, will oversee the review and critically challenge the CAA's recommendations.

Scope of the review

6. The Review will evaluate existing civil guidance on flying displays and special events, and the danger they may pose to the public. To do this the Review will consider the following issues:
 - the competency and experience of pilots flying at air displays;
 - the attitudes of pilots and organisations to safety standards;

³ www.caa.co.uk/CAP403

⁴ www.gov.uk/government/publications/regulatory-article-ra-2335-flying-displays-and-special-events

- the skill levels pilots flying at air displays must have to perform different aerobatic manoeuvres;
 - the physiological challenges of, and medical fitness to perform aerobatic, high performance and display flying;
 - the age, condition and performance, as well as the regulatory framework that governs aircraft used at air displays;
 - the range of permitted manoeuvres, in particular for high performance or vintage jet aircraft;
 - the content of the air display; and
 - location and characteristics of the air display venue, including displays not over a recognised aerodrome, coastal locations, and the surrounding area/infrastructure.
7. Other issues may arise during the course of the Review.
8. The Review will also consider what lessons can be learnt from any other air display incidents both in the UK and other countries, as well as how other countries authorise air displays. It will also consider any forthcoming European legislation that may impact on this activity. The Review will consider the CAA's internal procedures for assessing and approving flying displays and participants, the relationship that the CAA has with display organisers, such as the British Air Display Association (BADA) as well as others present at air shows also responsible for public safety, such as the Health and Safety Executive and emergency services.
9. Emerging information from the Air Accidents Investigation Branch (AAIB) will be considered promptly by the Review which will identify any further actions that it determines to be immediately necessary to protect the public in relation to air displays.

Independent Challenge Panel

10. The Review will have an Independent Challenge Panel for the Review. The Panel's Chair is independent of the CAA and the aviation display community but has knowledge of public safety issues. Membership of the Challenge Panel includes a consumer/public representative as well as representatives from the flying display community and the MAA. The CAA will provide support to the Challenge Panel.
11. The Panel's role is to provide constructive challenge to the thinking of the Review. It will advise on the efficacy and applicability of any recommendations that might result from the review for both the general public and the flying display community, as well as provide guidance on the priority of any recommendations.

The Panel will ensure that any proposals meet the overarching objective of the project to ensure that all is being done to ensure public air displays in the UK operate to the very highest levels and safety standards and that air shows remain safe.

12. The Panel is free to comment publicly on the work that has been carried out by the CAA. This may mean communicating with the aviation industry, the media, the CAA and others as appropriate.
13. Biographies for members of the Independent Challenge Panel are at Annex A.

Engagement

14. The Review will engage fully with the air display community, including organisers and pilots, as well, where feasible those who attend or are in the vicinity of air displays.

Governance

15. The Review is overseen by a **Steering Board**, chaired by Mark Swan, Group Director Safety and Airspace Regulation Group.
16. There is a **Project Board**, chaired by Tony Rapson, Head of the General Aviation Unit (GAU). The Project Board will guide and direct the project to a successful conclusion in terms of timeliness and meeting objectives. Tony Rapson is responsible for reporting direct to the Steering Board.
17. The work of the Project Board will be informed by Working Groups. The Project Board, with the agreement of the Steering Group, will decide on the number and make-up of the Working Groups as the Review progresses.
18. The Project Board will:
 - manage the Review's relationship with stakeholders, including the public, and the broader aviation community;
 - ensure that recommendations are fit for purpose and then, beyond the final report, consider how to ensure they are fully implemented; and
 - ensure that the project has the resources it needs to be successful.
19. Philip Clarke, Manager, Safety Policy, Intelligence, Strategy and Policy Team (ISP), the Safety and Airspace Regulation Group, is the Review Business Manager.
20. Dan McCafferty is the Review Project Manager.
21. Challenge to the CAA's work will be carried out by an Independent Challenge Panel, as detailed above.

22. Monthly updates will be provided to the CAA Board and to the Department of Transport (DfT). The European Aviation Safety Authority (EASA) will also be kept informed of the progress of the Review as it progresses.

Membership of the governance groups

23. **Steering Board** members are:

Mark Swan	Chair
Tony Rapson	Chair, Project Board
Philip Clarke	Review Business Manager
David Oastler	Consumer Policy Group (CPG) and Review Deputy Business Manager
Padhraic Kelleher	SARG ISP
Mark Shortman	GAU and AAIB Advisor
Sarah Doherty	Deputy Head of CAA Policy Programmes Team (PPT)
Cdre Paul Chivers	MAA
Dan McCafferty	Project Manager

Others colleagues, for example, from the CAA's Legal Team and Communications Team, may be co-opted onto the Steering Board at the request of the Steering Board Chair as the Review dictates.

The Steering Board will be quorate with four members attending, including the Chair or his nominated deputy, and at least one non-SARG member.

24. **Project Board** members are:

Tony Rapson	Chair, Project Board (with Padhraic Kelleher as deputy)
Philip Clarke	Review Business Manager
David Oastler	CPG and Review Deputy Business Manager
Mark Shortman	GAU and AAIB Advisor
John Romain	Aircraft Restoration Co.
Ed Bellamy	GAU
Dom Marino	PPT
Stuart Mitchell	CAA Medical Department
Matthew Bennett	CAA Legal Team
Sqn Ldr Rich Thornton	MAA
Mike Alcock	DfT
Dan McCafferty	Project Manager

Chairs of Working Groups as required

Others colleagues, for example, from the CAA's Communications Team, may be co-opted onto the Project Board at the request of the Project Board Chair as the Review dictates.

The Project Board will be quorate with five members attending, including the Chair or his nominated deputy, and at least one non-SARG member.

25. **Independent Challenge Panel** members are:

Geoffrey Podger CB	Chair
John Turner	BADA
Keith Richards	Chair, CAA Consumer Panel
AVM Gary Waterfall CBE	MAA and Ministry of Defence
Barbara Cooper	Kent County Council
AN Other	Secretary (to be appointed)

As required at the Independent Challenge Panel

Philip Clarke	Review Business Manager
David Oastler	CPG and Review Deputy Business Manager
Dan McCafferty	Project Manager

Working Groups

26. The Working Groups, in line with but not limited to the tasks set out in paragraphs 6 and 9 above, will be asked to go back to first principles and:

- Assess the adequacy of the current provisions to aircraft in scope of the review;
- Assess the adequacy of current provisions to pilots in scope of the review;
- Assess the safety objective of each provision;
- Assess the impact location may have on an air display
- Assess whether this safety objective remains sufficient in the light of the Shoreham and other disasters;
- Assess whether there is additional evidence to amend the provision;
- Make recommendations to the Project Board for changing current provisions, with an indication of the likely impact, both on public safety and the aviation community.

Meeting frequency

27. The Steering Board will meet monthly throughout the life of the Review, and the Project Board will be updated weekly and meet as necessary for the same period. Frequency of meetings after publication of the final report will be assessed at the time.
28. The Independent Challenge Panel will meet three or four times during the course of the Review. It will meet on its own to form its own views on the interim and final reports, and then with the Chairs of the Steering and Project Boards to challenge the findings, conclusions and recommendations of the CAA. The Chair of the Independent Challenge Panel may ask or be invited to address the CAA Board.

Resources

29. The Review will be fully resourced by the CAA except where people resources are provided by the MAA and DfT. Reasonable travel costs of non-CAA staff will be covered by the CAA. The CAA will cover the cost of Independent Challenge Panel.

Timescale

30. The Review will produce an interim report by the end of October and its final report early in the New Year.

[end]

CAA
04 September 2015

Annex B

Independent Challenge Panel: biographies

Chair: Geoffrey Podger CB

Geoffrey has successfully held four public sector Chief Executive posts in public health and regulatory sectors, namely Chief Executive of the UK's Health and Safety Executive, the European Food Safety Agency, the UK's Food Standards Agency and most recently Acting Chief Executive of WorkSafe New Zealand. He has extensive experience of internal and external communication, risk-based regulation policy and enforcement. Geoffrey has also had major involvement in public health and protection issues both through 15 years working at the Department of Health.

Geoffrey is currently Senior Visiting Research Fellow, Kings Centre for Risk Management; Executive Director of @Risk Ltd; Board Member of the Institute of Employment Studies; and Honorary Vice-President of the Chartered Institute for Environmental Health and of the Institute of Occupational Safety and Health, Honorary Fellow of the International Institute of Risk and Safety Management and President of the Society of Industrial Emergency Officers.

Member: Keith Richards

Keith is Chair of the CAA's Consumer Panel. The Panel has internal independence from the CAA and acts as a 'critical friend', scrutinising and challenging all of the CAA's work.

Keith is a barrister, arbitrator and commercial mediator. He has served as an independent member and non-exec director on regulatory bodies in a variety of sectors and specialises in professional / industry self-regulation, consumer rights, and alternative redress. Keith is Chair of The Disabled Persons Transport Advisory Committee (DPTAC), the statutory body advising Ministers at the DfT, and previously served for nine years as the Chair of its International Working Group covering Aviation and Maritime. He was Head of Business and Professional Development and Consumer Affairs at the travel industry body, ABTA, and was a Member of the Confederation of British Industry (CBI) Consumer Affairs Panel serving as its Deputy Chair for a while. For many years he served as Senior Campaigns Lawyer at Which?, and as legal editor of the journal Consumer Policy Review.

Member: Barbara Cooper

Barbara Cooper is Corporate Director for Growth, Environment and Transport at Kent County Council. Barbara's role includes responsibility for the planning, delivery and performance of front line services. These services include economic development, highways, waste, planning, environment, emergency planning, community safety, trading standards, arts and sports. Her immediate priorities have included working with central

government and regional and local partners on options for mitigating the impact of Operation Stack on the economy and communities of Kent and shaping a 20 year infrastructure framework for Kent and Medway.

Barbara has worked in local government for over 20 years and has managed a wide range of services in the London boroughs of Kingston upon Thames, Croydon and Bromley and in Portsmouth City Council and Swale Borough Council. She has been involved in many large scale events including Trafalgar 200 in 2005, DDay 60 and the Volvo yacht race.

Member: Air Vice-Marshal Gary M Waterfall CBE RAF

Air Vice-Marshal Gary Waterfall joined the Royal Air Force in 1985 as a direct entrant. He served the majority of his flying career with the Harrier Force as a Qualified Weapons Instructor, both in Germany and in the UK. He flew operationally from both land and sea bases in support of Operations MEGALLAN II, DENY FLIGHT and WARDEN, and displayed the Harrier in 1996, before joining the Royal Air Force Aerobatic Team, The Red Arrows, for the 1997-1999 seasons. He commanded 41(Reserve) Squadron, responsible for the Operational Test and Evaluation of Jaguar, Tornado GR4, Tornado F3, and Harrier GR7/9. In September 2009, he assumed command of Joint Force Harrier Force and Royal Air Force Cottesmore, until closure of the Unit and disbandment of Joint Force Harrier after the 2010 Strategic Defence and Security Review.

Promoted to Air Commodore in 2011 and to Air-Vice Marshal in 2014, Air Vice-Marshal Gary Waterfall is now Air Officer Commanding No 1 Group.

Air Vice-Marshal Gary Waterfall is also President of 2248 (Rutland) Air Training Corps, and Chairman of the Harrier Force Association.

Member: John Turner FRAeS

John is current Chair of the British Air Display Association. He John flew the Phantom F4 on No 92 Squadron at RAF Wildenrath, Germany, before becoming a flight commander, instructing on Hawk at No 4 Flying Training School RAF Valley, Anglesey. He was awarded a 'Queens Commendation for Valuable Services in the Air' for safely landing a Hawk which suffered engine failure just after take-off at night in 1984.

On leaving the RAF John worked, until his retirement in 2010, for BAE Systems as Tornado ADV Project Pilot, becoming Eurofighter Project Pilot in 1992. John moved to the Nimrod MRA4 programme, initially as Project Pilot and then as Chief Test Pilot Nimrod & Strategic Aircraft with responsibility for the flight test of all BAE Systems' large aircraft. In 2005 John was appointed BAE Systems Director Flight Operations, becoming responsible for UK test and demonstration flying and military flying training and airfield operations at Brough, Warton and Woodford and the governance of all flying activities conducted worldwide by or on behalf of all sectors of BAE Systems. Between trials work John captained ATP and BAe146 passenger flights and displayed BAE Systems heritage aircraft, a 1920's deHavilland Cirrus Moth, a 1930's Blackburn B2, and a 1940's Avro C19 (Anson) and other vintage aircraft owned by the Shuttleworth Collection.

As well as his wide experience of displaying different aircraft types, John has been a Flying Control Committee member at many UK air shows including Farnborough. John is a Fellow of the Royal Aeronautical Society and a member of its Flight Test Group, a member of the A|D|S Flight Operations Committee, covering the roles of Flying Display Director and Non-Executive Director for Farnborough International Ltd and a Liveryman of the Honourable Company of Air Pilots, covering the role of Director of Aviation Affairs. He joined the committee of the British Air Display Association in 2013, becoming chairman in February 2014.