

UK Civil Air Display Review: Actions that impact on UK civil air displays in 2016

CAP 1371

Published by the Civil Aviation Authority, 2016

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

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First published 2016

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Contents

Contents.....	3
Chapter 1.....	6
Introduction	6
Summary.....	7
Chapter 2.....	9
Air display locations.....	9
Chapter 3.....	13
Air display people	13
Flying Display Directors (FDDs)	13
The FDD's briefing	15
Flying display pilots	15
Medical standards	15
Minimum hours.....	16
Supervision of newly appointed display pilots and revalidation	17
Currency.....	18
Aircraft category renewal.....	18
DAEs	19
DAEs and display content	21
CAA staff	21
Chapter 4.....	23
Notification to the CAA	23
Chapter 5.....	24
Ongoing work	24
Permitted manoeuvres	24

Airworthiness aspects	24
Formation flying.....	25
Night flying at air displays.....	25
Crowd lines at air displays.....	25
Risk assessment template	26
Causes and impact of human error	26
Weather minima	26
Appendix A	27
CAA UK Civil Air Display Review terms of reference	27
Introduction	27
Scope of the review.....	28
Independent Challenge Panel	29
Engagement.....	29
Governance.....	29
Membership of the governance groups	30
Working Groups	32
Meeting frequency.....	33
Resources	33
Timescale.....	33
Appendix B	34
Independent Challenge Panel: members and biographies.....	34
Chair: Geoffrey Podger CB	34
Member: Keith Richards.....	34
Member: Barbara Cooper.....	35
Member: Air Vice-Marshal Gary M Waterfall CBE RAF.....	35
Member: John Turner FRAeS	36
Appendix C	37

Categories of aircraft, and some examples of different category aircraft.....	37
Appendix D	39
UK civil air displays: commonly used terms and abbreviations	39

Chapter 1

Introduction

- 1.1 The Civil Aviation Authority is the UK's specialist aviation regulator. Our purpose is to minimise the risks associated with aviation, and our primary concern is the safety of the public, whether in the air or on the ground. Protecting the public is at the heart of everything the CAA does and it is constantly working to enhance aviation safety standards.
- 1.2 Up until the tragic accident at Shoreham last summer, the UK had an excellent record of protecting the public through safe air displays, and the approach used in the UK is emulated in many countries around the world. The accident at Shoreham last summer was the first of its kind – no members of the public have lost their lives as a result of an air display in the UK since 1952, which made this accident all the more shocking.
- 1.3 The Shoreham accident remains the subject of ongoing Air Accidents Investigation Branch (AAIB) and Sussex Police investigations and so it is not appropriate to speculate on the cause. However, the CAA took a number of immediate steps, which related to the aircraft type involved and other ex-military jet aircraft but also included identifying enhanced risk assessment criteria for all future air displays.
- 1.4 The CAA frequently reviews all aspects of aviation safety, including safety at air displays. Our publication *Flying displays and special events: A guide to safety and administrative arrangements*¹ has been updated many times since it was first published in 1973. The publication was extensively updated and rewritten in 2015 before the display season started.
- 1.5 But it is of course absolutely right that the CAA should now identify any opportunities for further improvements to public safety and has therefore established a further review to evaluate the current guidance, processes and regulations relating to UK civil air displays. The aim is to assess whether it is possible to minimise further the risks associated with civil air displays in the UK.
- 1.6 Last year we said that we would publish the review's final report early in 2016 and we still intend to do that. However, it has become apparent that

¹ www.caa.co.uk/CAP403

there are a number of enhancements that the CAA, air show organisers, and others should carry out before the start of the 2016 air display season.

- 1.7 Accordingly, the CAA is publishing this action report. It is based on the same three core themes as the [progress report](#): air display location, air display aircraft and air display people. The actions detailed in this report will give all those involved in the coming air display season and advance notice of our intentions as we seek to enhance the safety provisions for UK air displays.
- 1.8 The restrictions the CAA put in place after the accident at Shoreham will remain until the AAIB publish its final report into the accident, at which point the CAA will review them based on the AAIB's recommendations.
- 1.9 The full terms of reference for the review are at Annex A of this report and full details of the review, including the governance structure, are on the CAA website at <http://www.caa.co.uk/Safety-initiatives-and-resources/Safety-projects/Airshow-review/Terms-of-reference/>.
- 1.10 In October 2015 the CAA published a brief progress report on the review. That report set out the progress made and explained the next steps that the CAA would be taking. A copy of that report can also be found by following the web link above.

Summary

- 1.11 Under the Air Navigation Order 2009, the organisers of any flying display must obtain permission from the CAA. The CAA considers a number of issues before granting such permission, including details of the location and safety arrangements, information about the proposed display itself and proof of the competence of the Flying Display Director (FDD) and of display pilots.
- 1.12 To increase the safety of the public and further mitigate risks identified in the review, the CAA is either introducing additional requirements or formalising existing requirements covering:
- the planning documentation that must be submitted to the CAA as part of a request for permission;
 - the competence and attitudes of FDDs;
 - the experience, skill and health of display pilots;
 - the role of Display Authorisation Evaluators (DAEs).

- 1.13 Unless otherwise stated, these changes will take effect in time for the 2016 display season.

Chapter 2

Air display locations

- 2.1 More than 300 civil air shows take place across the UK each year. They take place in all parts of the country and in a diverse range of locations. They vary in size from very large international events to small local events. The geography of each display site and the surrounding area is unique.
- 2.2 It is the responsibility of those organising an air display to identify the risks that the air display may pose, consider how those risks can be managed and mitigated, and then inform those who may be affected by the air display.
- 2.3 There are two key organising roles. The event organiser has overall responsibility for the event safety arrangements, and the Flying Display Director (FDD) has responsibility for the air display safety arrangements.
- 2.4 They must already consider a wide range of risks, including potential obstacles and hazards in and around the display arena. The CAA's publication [*Flying Displays and Special Events: a guide to safety and administrative arrangements*](#) sets out factors that must currently be considered when assessing the suitability of a venue and potential risks. These are:
- the location and positioning of spectator enclosures and car parks;
 - 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 service vehicles suitable to the size of air display.

2.5 The event organiser and FDD must also:

- decide on the area that risk assessment should cover. This will depend on the size of the air display they wish to hold, the aircraft flying and the complexity of the proposed display; and
- consider whether the time of day the display is being held requires any additional risk management and mitigation measures by them.

2.6 These fundamental responsibilities will remain unchanged.

2.7 Following the accident at Shoreham, we introduced three additional risk assessment criteria for all future air displays. These were the proximity of major roads, congested areas and other nearby infrastructure, such as railway lines. This meant that display organisers were expected to identify within their risk assessments how they proposed to manage and mitigate any risks arising from these sources. This resulted in a number of changes being made to air displays held after the Shoreham Airshow.

2.8 We propose to retain and formalise these additional risk criteria, and require event organisers and FDDs to submit their risk assessments to the CAA. We are developing a risk assessment template that will assist event organisers and FDDs. This will be published no later than the end of February 2016.

Action 1: The CAA will specify, for all future air displays the risk assessment criteria that it requires event organisers and Flying Display Directors must use in planning and preparing for air displays of all sizes.

2.9 Our publication [*Flying Displays and Special Events: a guide to safety and administrative arrangements*](#) also details what liaison the event organiser and FDD are expected to have with the relevant local authority or authorities for the location of their air show, the police and the emergency services, including the Maritime and Coastguard Agency and Royal National Lifeboat Institution for offshore display sites.

- 2.10 The publication also sets out when the local Safety Advisory Group² should first be notified, so that local authorities and emergency services can start initial planning and provide early guidance to the event organiser and FDD. The event emergency plan is expected to comply with Local Authorities existing major incident plans and the Civil Contingencies Act 2004³.
- 2.11 The planning and discussions between the event organiser, FDD and these other authorities are designed to inform the creation of a safety plan for the air display. We will also formalise this process.

Action 2: In their application for permission to hold an air display an event organiser and/or FDD must provide their enhanced risk assessment and full details of how they propose to mitigate any risks they have identified. They must set out in their safety plan evidence of engagement with other authorities.

- 2.12 The safety plan should be comprehensive and include details of how the event organiser and/or FDD will inform emergency services arriving at the scene of accident of any potential or known safety risks and residual hazards related to the incident, such as pyrotechnic devices that may be fitted on the aircraft.
- 2.13 A safety plan must also include details of engagement with Highways England, local highways authorities and rail network operators where appropriate. For example, the event organiser and FDD may need to work with the local authority, emergency services, highways authorities and others to:
- consider whether any roads or railway lines should be closed at any point during the display;
 - discuss whether any Temporary Traffic Orders⁴ should be put in place during the air display;

² www.hse.gov.uk/event-safety/safety-advisory-groups.htm

³ www.legislation.gov.uk/ukpga/2004/36/contents

⁴ www.gov.uk/government/uploads/system/uploads/attachment_data/file/2665/annex-a.pdf

- decide whether alternatives routes can be provided for members of the general public who wish to avoid passing directly by the air display location; and
- ensure that there is adequate information provided to the general public, both in advance and during the air show.

2.14 The event organiser and FDD will also be expected to identify any areas surrounding the air display site (including offshore and onshore areas of water) where the general public may gather, and detail how the risks of any such gathering will be mitigated or managed.

2.15 This may require engagement with the owners or controllers of land near a display site where the general public may or are known to gather. The event organiser may need to make the owners or controllers of such land aware of their responsibilities if they encourage the general public to use their land. This should also help raise public understanding that the safest viewing point is always within designated spectator areas provided by the organiser.

Action 3: An event organiser must provide the CAA with written detail of how they, with input from the FDD, will communicate with the public about areas where they may be at greater risk.

2.16 The CAA will give permission for an air display only where we are satisfied that risks have been properly identified and will be mitigated sufficiently to deliver an acceptable level of safety.

Chapter 3

Air display people

- 3.1 As stated above, to hold an air display, an FDD must obtain permission in writing from the CAA. One of the things the CAA seeks to establish before issuing such permission is whether the applicant has the right attitudes and behaviours to fulfil such a role i.e whether the applicant is 'fit' to carry out the role. This is in keeping with similar consideration of an individual's attitude and behaviour in other parts of the aviation safety framework.
- 3.2 FDDs must provide the CAA with a clear statement about their knowledge, experience, competence, skill, history, physical fitness and mental fitness.
- 3.3 All pilots that take part in a flying display must hold a display authorisation (DA) from the CAA. To obtain a DA, the pilot must have sufficient flying experience on the type of aircraft they would fly in a display, and pass a flying test. These tests are conducted by Display Authorisation Evaluators (DAEs).
- 3.4 Through the review, the CAA has identified some opportunities to strengthen the way that the competence, experience and suitability of FDDs, display pilots and DAEs are assessed. In the medium term, this will include the introduction of a new accreditation scheme for FDDs.

Flying Display Directors (FDDs)

- 3.5 FDDs have a central role in the planning of air displays, and thus in ensuring their safety. As set out above, before granting an FDD permission to conduct an air display the CAA needs to establish as far as possible if the applicant has the right attitudes and behaviours, as well as experience, to fulfil such a role.

Action 4: The CAA will formalise its procedures to ensuring whether, in its opinion, an applicant has the right attitudes and behaviours to fulfil the role of an FDD.