

CAA Review of UK Civil Air Displays: progress report

CAP 1351

1

Published by the Civil Aviation Authority, 2015

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

Enquiries regarding the content of this publication should be addressed to: airdisplayreview@caa.co.uk

Contents

Introduction	4
CAA air display review	5
Progress report structure	6
The regulatory framework and safety assurance	7
Flying display legal requirements	7
Air display permissions	7
Display pilot authorisations	8
Safety assurance	9
Air display locations	10
Geographical requirements	10
Air display planning and oversight	11
Air display aircraft	12
Air display people	14
Skilled and competent personnel	14
Medical and physiological fitness	14
Fitness/psychological	14
Next steps	16
Overall regulatory framework	16
Air display locations	16
Air display aircraft	17
Air display people	17
Contact the review team	17
Annex A	18
Terms of reference	18
Annex B	24
Independent Challenge Panel: biographies	24

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