

[REDACTED]  
[REDACTED]

23 March 2018  
Reference: F0003620

Dear [REDACTED]

I am writing in respect of your recent request of 27 February 2018, for the release of information held by the Civil Aviation Authority (CAA). Your request has been considered in line with the provisions of the Freedom of Information Act 2000 (FOIA).

Your request relates to Air Traffic Control standards in the UK and, specifically, the evolving use of Automatic Dependent Surveillance – Broadcast. As you note, the CAA published a news item in August 2017, available at:

<https://www.caa.co.uk/News/ADS-B-can-help-reduce-air-space-infringements-and-mid-air-collisions,-says-CAA/>

It is perhaps worth noting, before addressing the specific questions that you raise, that in this context the CAA provides oversight and regulates air navigation service providers (ANSP) in the UK. In accordance with legislation, such as the Single European Sky Common Requirements (Regulation (EU) No 1035/2011), we audit ANSP organisations and will examine areas such as safety and security arrangements, contingency plans and quality management systems.

While we have a facilitation role in ensuring that the aviation industry can address evolving safety issues through operational and technologies, our primary activity is to ensure that the air navigation service providers in the UK meet the regulatory requirements set out by the International Civil Aviation Organisation, European and national legislation and any associated equipment standards/directives.

Ofcom is the UK communications regulator. As noted on the Ofcom website at: <https://www.ofcom.org.uk/research-and-data/tv-radio-and-on-demand/radio-research/illegal-broadcasting>, one of Ofcom's duties is to protect and manage the radio spectrum. This includes taking steps to address illegal broadcast stations and the harmful effects they cause. Unless an exemption applies, using spectrum requires a licence from Ofcom. Ofcom monitors the airwaves 24 hours a day, 365 days a year and take swift action to protect critical services, such as aircraft, fire and police, which depend upon radio communications. Ofcom will investigate and take enforcement action against people who transmit illegally.

There is significant work being undertaken internationally to consider the issues around authentication and authorisation protocols, however, the operational use of ADS-B in the

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Aviation House Gatwick Airport South Gatwick RH6 0YR. [www.caa.co.uk](http://www.caa.co.uk)

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UK is at a very early stage. As noted in the CAA news item, ADS-B is currently being considered in the following ways:

- Dundee Airport trial of a Mode-S and ADS-B receiver to provide air traffic controllers with more information on aircraft operating outside of controlled airspace around the airport, to reduce the risk of both inbound and outbound aircraft being placed too close to other airspace users operating legitimately just outside the Dundee Airport zone.
- Simultaneous transmissions from a GA aircraft with Mode S and a conspicuity device (meeting the criteria in CAP1391) to gather evidence on the variation in position/height reports from the two systems. This is not being used to provide any operational air traffic service.
- Enhancing General Aviation (GA) airfield situational awareness of aircraft in its vicinity. Typically, it is not economically viable to make available complex radar systems at most GA airfields, where ATS typically operates purely by eye and radio, supplemented by binoculars. Real-time traffic displays based on ADS-B have the potential capability to enhance GA airfield ATS situational awareness and flight safety in the vicinity of airfields, where GA pilots are most at risk of mid-air collision. A trial is being undertaken at several General Aviation airfields to assess the technology.

I turn now to the specific questions that you raise:

1. **Does the CAA have any plans or procedures to prevent unauthorised people from transmitting messages over ADS-B out?**

We do not have any specific plans or procedures to prevent unauthorised people from transmitting messages over ADS-B out.

2. **If someone were to transmit information over ADS-B out to create phantom aircraft on air traffic control screens or to jam ADS-B out signals, removing some ATC functionality, how quickly would the CAA be notified and, how would the CAA attempt to locate the person responsible and shut down their transmission?**

CAP 493, Manual of Air Traffic Services Part 1, Section 6: Chapter 5, paragraph 5 sets out actions to be taken when illegal transmissions are suspected, which is to contact the Radio Investigation Service. The service is part of Ofcom and will seek to track down the source of the transmissions and take appropriate legal action. For this process to work, we note that it is essential that the Radio Investigation Service is informed as soon as practicable.

Through [Mandatory Occurrence Reporting](#), the CAA requires the reporting, analysis and follow up of occurrences in civil aviation, which include cases of impacts on ATC functionality. An occurrence means any safety-related event which endangers or which, if not corrected or addressed, could endanger an aircraft, its occupants or any other person. The purpose of occurrence reporting is to improve aviation safety by ensuring that relevant safety information relating to civil aviation is reported, collected, stored, protected, exchanged, disseminated and analysed.

3. **Does the CAA currently have plans or procedures to locate and shut down a signal such as this?**

Ofcom, under the Communications Act and Wireless Telecommunications Act, has legal powers to address illegal transmissions.

**4. Are there contingency plans to mitigate against issues such as this?**

We require ANSPs to develop, maintain and practice contingency plans to address a wide range of scenarios relating to impacts on ATC functionality and to undertake safety risk assessments on all aspects of Air Traffic Service provision. It is worth noting that the term Air Traffic Services covers a number of types of service, with each type imposing different responsibilities between the Air Traffic Services officer and the flight crew. Therefore, there is no one size fits all approach to contingency planning.

**5. Does the CAA have any plans or procedures to prevent unauthorised people from transmitting messages over ADS-B in?**

We do not have any specific plans or procedures to prevent unauthorised people from transmitting messages over ADS-B in.

**6. If someone were to transmit information over ADS-B in to create phantom aircraft on cockpit screens would the CAA be notified and would the CAA attempt to locate the person responsible and shut down their transmission?**

As per the answer to questions 2 and 3 above, this would be referred to Ofcom in the first instance and we would be notified through the MOR scheme.

We take the security concerns of ADS-B very seriously and note that this is not a concern specific to ADS-B systems only. Any aeronautical surveillance system that requires transmissions from aircraft transponders has the possibility of receiving false data if false data were injected using transponders. However, UK aeronautical surveillance is based on a layered surveillance system approach, fusing multiple inputs, graduated in respect of the density of traffic in the given airspace.

In conclusion, the use of ADS-B in the UK is in early stages of development. One of the key issues that will be addressed during its introduction is the balance of safety risks, potential outcomes and mitigations. For example, ADS-B may reduce the risk of mid-air collision around GA aerodromes by providing improved situational awareness of aircraft to Air Traffic Services personnel and other suitably equipped aircraft. In these situations, the ADS-B system will be used to assist in visual acquisition of aircraft and/or help inform decision-making. Its operational use is subject to the submission of safety cases by ANSPs that will take into account safety, security and contingency aspects.

If you are not satisfied with how we have dealt with your request in the first instance you should approach the CAA in writing at:-

Caroline Chalk  
Head of External Information Services  
Civil Aviation Authority  
Aviation House  
Gatwick Airport South  
Gatwick  
RH6 0YR

[caroline.chalk@caa.co.uk](mailto:caroline.chalk@caa.co.uk)

The CAA has a formal internal review process for dealing with appeals or complaints in connection with Freedom of Information requests. The key steps in this process are set in the attachment.

Should you remain dissatisfied with the outcome you have a right under Section 50 of the FOIA to appeal against the decision by contacting the Information Commissioner at:-

Information Commissioner's Office  
FOI/EIR Complaints Resolution  
Wycliffe House  
Water Lane  
Wilmslow  
SK9 5AF  
<https://ico.org.uk/concerns/>

If you wish to request further information from the CAA, please use the form on the CAA website at <http://publicapps.caa.co.uk/modalapplication.aspx?appid=24>.

Yours sincerely

A handwritten signature in black ink that reads "Rihanne Stephen". The signature is written in a cursive style with a large initial 'R'.

Rihanne Stephen  
Information Rights Officer

**CAA INTERNAL REVIEW & COMPLAINTS PROCEDURE**

- The original case to which the appeal or complaint relates is identified and the case file is made available;
- The appeal or complaint is allocated to an Appeal Manager, the appeal is acknowledged and the details of the Appeal Manager are provided to the applicant;
- The Appeal Manager reviews the case to understand the nature of the appeal or complaint, reviews the actions and decisions taken in connection with the original case and takes account of any new information that may have been received. This will typically require contact with those persons involved in the original case and consultation with the CAA Legal Department;
- The Appeal Manager concludes the review and, after consultation with those involved with the case, and with the CAA Legal Department, agrees on the course of action to be taken;
- The Appeal Manager prepares the necessary response and collates any information to be provided to the applicant;
- The response and any necessary information is sent to the applicant, together with information about further rights of appeal to the Information Commissioners Office, including full contact details.