

Corporate Communications
External Information Services

1 May 2014
FOIA reference: F0001890

Dear XXXX

I am writing in respect of your recent request of 2 April 2014, for the release of information held by the Civil Aviation Authority (CAA).

Your request:

"I have looked through various published documents but can find no reference to this subject. Could you please furnish me with some answers?"

1) Regarding ILS antennae arrays, is there any guidance, or are there any rules, governing how close a steel mesh and angle-iron perimeter fence of height "x" feet can be from the ILS array?

2) Does these guidance/rules vary if the straight fence is at an angle in relation to the array, rather than being parallel to it?

3) Do the guidance/rules state any procedure to be adopted if an existing fence is being moved significantly closer to the ILS array?

My concern is signal absorption, reflection or scattering, which could perhaps affect the accuracy of the ILS system?

In the actual case in point, an existing 9 foot high steel mesh and angle-iron perimeter fence (at an angle to the ILS array) is currently sited around 19 feet 3 inches from the nearest end of the ILS array. Because of proposed road changes, it will be necessary to move this fence, in parallel to its current line, nearer to the ILS array - in fact to within 2 feet of the same end of the array.

4) Does this example infringe any guidance/rules, or does it require any changes to the ILS system, such as re-calibration?"

Civil Aviation Authority

Aviation House GW Gatwick Airport South Crawley West Sussex England RH6 0YR www.caa.co.uk
Telephone 01293 768512 foirequests@caa.co.uk

Our response:

In assessing your request in line with the provisions of the Freedom of Information Act 2000 (FOIA), we are pleased to be able to provide the information below.

The Instrument Landing System (ILS) guidance depends on signals from multiple antennas the phase of which is adjusted to produce the guidance beam in the correct place with the minimum number of perturbations possible. Any reflecting structure, including buildings and aircraft, can reflect signals back into the beam changing the alignment and producing out of tolerance bends.

The Air Navigation Service Provider operating the ILS or its agent will have modelled the ILS in its environment on installation to ensure the guidance is correct and within the appropriate tolerances. Any future changes in the environment, new or removed buildings, fences etc will also need to be modelled to assess the impact on the signal and leading to realignment of the system and flight inspection to ensure it remains within the specification.

In the instance of the ILS system referred to here, the VHF localiser component consists of an antenna array which is sited at the end of the runway and of which the radiated Radio Frequency (RF) beam is calibrated to ensure that the aircraft follows the beam pattern profile on its approach to landing on the runway. If the metal fence is moved such that its location impinges upon the radiated field (even though this is from the back of the antenna array) it is likely that the performance of the localiser pattern will be affected and that recalibration will be required to compensate.

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:-

Mark Stevens
External Response Manager
Civil Aviation Authority
Aviation House
Gatwick Airport South
West Sussex
RH6 0YR

mark.stevens@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 Freedom of Information Act to appeal against the decision by contacting the Information Commissioner at:-

Information Commissioner's Office
FOI/EIR Complaints Resolution
Wycliffe House
Water Lane
Wilmslow
Cheshire
SK9 5AF
www.ico.gov.uk/complaints.aspx

Should you wish to make further Freedom of Information requests, please use the e-form at <http://www.caa.co.uk/foi>.

Yours sincerely

Rick Chatfield
Information Rights and Enquiries 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.