

AERODROME SAFEGUARDING ADVICE NOTE

Date:	April 2024
Ref.:	Advice Note 1
Subject:	Aerodrome Safeguarding – An Overview
Action required:	For Information

1. Introduction

This is the first in a series of CAST (Combined Aerodrome Safeguarding Team) Advice Notes supported by the CAA. The purpose of which is to provide guidance to those who are considering carrying out development within the aerodrome safeguarded zones and the possible implications. This first Advice Note explains the process to be followed and highlights the relevant considerations. Additional Advice Notes cover other considerations with regard to the safeguarding of an aerodrome and provide further advice on how potential conflicts with safeguarding requirements can be overcome.

2. Safeguarded Aerodromes

Certain civil aerodromes, based on their importance to the national air transport system, are officially safeguarded in order to ensure that their operation is not impacted upon by proposed developments, see section 3 below. A similar official safeguarding system applies to certain military aerodromes, based on their strategic importance. See CAA Publication, 'CAP 738: Safeguarding of Aerodromes' available at www.caa.co.uk for further details.

HM Government advises that operators of aerodromes that are not officially safeguarded should take steps to protect their locations from the effects of possible adverse development by establishing an agreed consultation procedure between themselves and the Local Planning Authority. Please refer to GA1: 'Safeguarding Guidance to General Aviation Aerodrome Managers & Operators' & GA2: 'General Aviation Guidance for Local Planning Authorities', available at [CAST publications | Civil Aviation Authority \(caa.co.uk\)](http://CASTpublications|CivilAviationAuthority(caa.co.uk)).

3. What is Aerodrome Safeguarding?

Aerodrome safeguarding covers a number of aspects, and its purpose is to protect:

AERODROME SAFEGUARDING ADVICE NOTE

- Airspace around the aerodrome by ensuring that no buildings or structures cause danger to aircraft either in the air or on the ground. This is achieved through an assessment of the Obstacle Limitation Surfaces (OLS) (see section 5.1).
- The integrity of Instrument Flight Procedures (IFPs) by preventing any infringements (see section 5.2).
- The integrity of radar and other electronic aids to navigation known as Communications Navigation & Surveillance Systems (CNS) by preventing reflections and diffractions of the radio signals (see section 5.3).
- Aeronautical lighting, such as approach and runway lighting, by ensuring that they are not obscured by any proposed development and to ensure that any proposed lighting cannot be confused for aeronautical ground lighting (see section 5.4).
- The aerodrome from any increased wildlife strike risk such as bird strikes, which pose a serious threat to flight safety (see section 5.5).
- Any construction processes from interfering with aerodrome operations through the production of dust/smoke, temporary lighting or construction equipment impacting on CNS, IFPs and/or infringing the OLS (see section 5.6).
- Aircraft from the risk of collision with obstacles through appropriate lighting (see section 5.7).
- Aircraft from the risk of windshear and turbulence (see section 5.8).
- Aircraft from the risk of glint and glare (see section 5.9).

All the above are considered by the aerodrome operator when assessing development proposals.

4. Planning Applications and the Aerodrome Safeguarding Process

The aerodrome safeguarding process for officially safeguarded aerodromes is a requirement under a direction made by the Secretary of State and is set out in ODPM/DfT Circular 01/2003 'Safeguarding of Aerodromes, Technical Sites & Military Explosives Storage Areas Direction'. For England this is available at www.gov.uk. The Scottish Circular is available at www.gov.scot.

Operators of officially safeguarded aerodromes and the Secretary of State for Defence will issue maps to Local Planning Authorities (LPAs) showing the safeguarded areas. These may extend out to 40 NM (nautical miles) (74.08km), depending on the procedures for each

AERODROME SAFEGUARDING ADVICE NOTE

aerodrome. It is recommended that planners and developers contact the aerodrome concerned to clarify and obtain further details as required.

The aerodrome operator of officially safeguarded aerodromes is a 'Consultee' under the safeguarding circulars. Therefore, the LPA must consult with the aerodrome concerned regarding certain planning applications within the safeguarded area, for example, developments over certain heights, whether the development could be a wildlife hazard attractant, telecoms proposals or if the proposals contain wind turbines or solar panels, this list is not exhaustive. The response of the aerodrome operator must be considered when the LPA determines the planning application.

To enable an accurate assessment of a proposed development, the aerodrome operator requires certain information, for example:

- An accurate site plan of the proposed development with the site clearly outlined and six figure (Ordnance Survey) 'eastings' and 'northings' grid references
- The ground level of the site to an accuracy of 0.25m Above Ordnance Datum (AOD). Note: Heights AOD are those shown on Ordnance Survey maps as 'Above Mean Sea Level' AMSL.
- The layout, dimensions, materials and most importantly the heights of the proposed development above ground level
- Any landscaping and /or Sustainable Urban Drainage (SUDS) proposals and details of Biodiversity Net Gain (BNG) proposals
- Details of renewable energy schemes
- Any associated construction or development lighting details
- In some instances, the aerodrome operator may request that the developer commissions specialist studies to assess any potential impacts with regard to Communications Navigation & Surveillance Systems (CNS), glint and glare, Instrument Flight Procedures (IFPs) and windshear/turbulence for example. The studies will be at the cost of the developer.
- Any other information that may be deemed necessary to assess the application.

Non-officially safeguarded aerodromes are encouraged to agree a similar list with their Local Planning Authority (LPA).

The above-mentioned information should provide sufficient data to conduct an assessment on the possible impact of the application, however it may be necessary for the aerodrome operator to request further information to consider the effect of a proposed development on

AERODROME SAFEGUARDING ADVICE NOTE

the aerodrome, it is important that the LPA consults the aerodrome operator at the earliest possible stage.

Outline Applications - If the proposals have been submitted to the LPA as an 'outline application', in certain circumstances the aerodrome operator may need to request further details, for example the proposed heights of the development to ensure that the proposals will not compromise the safe operation of the aerodrome. The LPAs themselves also have statutory powers to request further details from developers and applicants. This is covered in Annex 2 of the Safeguarding of Aerodromes Circulars.

If it is found after assessing the proposals that the proposed development will impact on aerodrome operations, amended plans or further information will be sought.

Following an assessment by a civil or military aerodrome operator, their response to the LPA will state one of the following:

No Objection with Informatives: If after assessment it is clear the development will not impact on operations, the aerodrome operator will respond with a 'no objection' to the LPA. They may request that Informatives be added to the planning approval for example making the developer aware that a specific crane permit or approval (issued by the aerodrome operator) may be required.

No Objection with Conditions: If after assessment it is felt that further safeguards or more details are required, the aerodrome operator will respond to the LPA and will request that conditions be added to the planning approval. For example, requiring a full landscaping scheme, a Wildlife/Bird Hazard Management Plan, drainage details etc be submitted.

Objection: Should it not be possible to arrive at a suitable outcome, through amendments to the proposed development, and that the risk to air safety remains, the aerodrome operator will submit an objection to the LPA clearly stating their reasons.

Holding Objection: A holding objection could be submitted by the aerodrome operator if sufficient details have not been provided to enable them to assess the proposals to ensure that they will not compromise air safety. This is covered in Annex 2 of the Safeguarding of Aerodromes Circulars available at www.gov.uk and www.gov.scot.

Should the LPA propose to grant planning permission contrary to the advice of the aerodrome operator of an officially safeguarded aerodrome, they must then notify the aerodrome operator and the CAA or the Secretary of State for Defence as applicable. In Scotland, the Scottish Ministers must also be notified. The LPA may not grant permission before the expiry

AERODROME SAFEGUARDING ADVICE NOTE

of 28 days. For full details of the procedure see Annex 1 of the Safeguarding Circulars available at www.gov.uk and www.gov.scot.

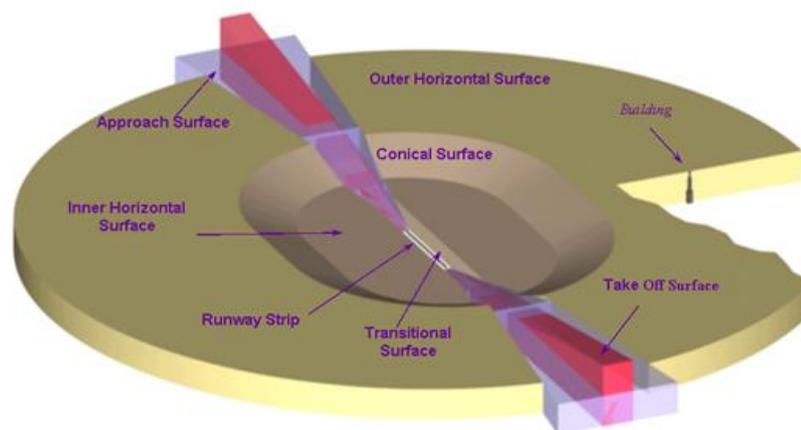
Certain types of development are permitted under the Town & Country Planning (General Permitted Development) Order or comparable regulations. In some areas, LPA's have agreed to implement an 'Article 4 Direction' (which forms part of the Town & Country Planning Legislation) to restrict certain permitted development (PD) rights where they could impact on the safe operation of aerodromes.

Where an LPA receives a pre planning application query, the LPA should refer the developer to the aerodrome operator for safeguarding advice.

5. Aerodrome Safeguarding Considerations

5.1 Obstacle Limitation Surfaces (OLS)

Obstacle Limitation Surfaces (OLS) surround the aerodrome and define the limits to which objects may project into airspace. They take the form of a complex set of 3 dimensional surfaces, which extend upwards and outwards from the runway(s) encompassing the critical airspace in which key air traffic and flight procedures associated with the aerodrome are conducted.



***Obstacle Limitation Surfaces (OLS) Diagram
(For Guidance Only)***

For further information please refer to CAA Publications, 'CAP 738: Safeguarding of Aerodromes', 'CAP 168: Licensing of Aerodromes' and 'Aerodromes - UK Regulation (EU) 139/2014' available at www.caa.co.uk or contact your local aerodrome.

AERODROME SAFEGUARDING ADVICE NOTE

In accordance with the applicable civil aviation regulatory requirements, aerodromes are required to take all reasonable steps to ensure the aerodrome and its airspace are safe for use by aircraft. Any developments need to be assessed to ensure that they do not infringe any of the OLS as this could endanger aircraft. It is important that accurate information on the location and height of a proposed development within the safeguarded area is provided.

The height of vehicles must be considered when evaluating roads and parking areas within proposed developments, unless any other structure associated with the proposed development is taller. Railways are treated in a similar manner. Further details of this can be found in Annex 2 of the Safeguarding Circulars available at www.gov.uk and www.gov.scot

5.2 Instrument Flight Procedures (IFPs)

Instrument flight procedures are a series of predetermined manoeuvres by reference to flight instruments or satellite-based way points. An IFP's primary purpose is to provide clearance from obstacles and allow safe aircraft operations to/from the runway into the local airspace and to the national route network.

Where the aerodrome has established IFPs it will be necessary to ensure the proposal does not impact on their design. It cannot be assumed that the OLS will provide sufficient protection for IFPs.

If after an initial assessment it is found that there could be a potential impact on IFPs a specialist study must be undertaken by an Approved Procedure Design Organisation (APDO), the developer will be expected to meet the cost. A list of APDO's can be found on the CAA website at www.caa.co.uk. Please see also CAA Publication 'CAP 785B: Implementation and Safeguarding of IFPs in the UK' available at www.caa.co.uk.

5.3 Communications Navigation & Surveillance Systems (CNS)

In low visibility, pilots are entirely dependent on the accuracy of the information displayed on the instruments in the aircraft cockpit to navigate, land and take off. Similarly, air traffic controllers rely on the accuracy of the information displayed on the radar screens to maintain safe separation between aircraft. It is critical, that this information is not distorted by interference to radar signals used in the operation of navigational aids, for example by:

- Radio frequency interference from other sources of radio emissions, such as telecoms installations and 5G in particular.
- Radio signal reflections or diffractions caused by physical objects, such as buildings / structures, cranes or wind turbines.

AERODROME SAFEGUARDING ADVICE NOTE

A recent and less obvious source of radio frequency interference is through renewable energy sources such as wind turbines and solar installations. The distance within which an installation may impact will vary from aerodrome to aerodrome and ideally needs to be assessed prior to submitting through planning.

Further guidance can be found in CAA Publication 'CAP 670: Air Traffic Services Safety Requirements' available at www.caa.co.uk.

5.4 Aeronautical Lighting

Visual aids, consisting primarily of aeronautical lighting, assist pilots to line up the aircraft with the runway when approaching the aerodrome to land. Any proposed development must be assessed by the aerodrome operator to ensure that:

- Any aeronautical lighting is not obscured.
- Any proposed lighting cannot be confused with aeronautical lighting, for example replicating the same patterns or colours.
- Any proposed development must not contain a high level of background lighting which could diminish the effectiveness of aeronautical lighting.
- Any proposed lighting must not have the potential for glare or dazzle to pilots.

For further information with regard to the potential impact on aeronautical lighting and glare or dazzle to pilots please refer to Advice Note 2 'Lighting Near Aerodromes', available at [CAST publications | Civil Aviation Authority \(caa.co.uk\)](http://CASTpublications.CivilAviationAuthority.caa.co.uk).

Temporary outdoor lighting displays, particularly those involving lasers, searchlights, fireworks, sky lanterns & balloons in the vicinity of the aerodrome should be notified to the CAA and the aerodrome concerned. Please refer to Advice Note 2 'Lighting Near Aerodromes' and CAA Publication 'CAP 736: Operation of Directed Light, Fireworks, Toy Balloons and Sky Lanterns within UK Airspace' available at www.caa.co.uk.

5.5 Wildlife Hazard Management

Aircraft are vulnerable to wildlife strike risk, in particular bird strike. Birds can move into the path of an aircraft, because they are crossing the airfield or its approaches as they move between sites in the locality. Aircraft are particularly vulnerable to collisions with large birds such as geese, swans and flocks of birds such as starling, gulls, pigeons.

Birds and other wildlife may be attracted to the vicinity of an aerodrome by various types of development, including waste management sites, sewage works, mineral workings, water bodies, nature reserves, large landscaping schemes and any works to achieve biodiversity net

AERODROME SAFEGUARDING ADVICE NOTE

gain (BNG), large areas of flat/shallow pitched or green roofs, large catering outlets and large buildings with perching/roosting opportunities for birds.

The objective of aerodrome safeguarding is to prevent any increase in, and where possible reduce, the wildlife strike risk at an aerodrome.

For further information with regard to the potential wildlife hazards as a result of a proposed development, please refer to Advice Note 3 'Wildlife Hazards around Aerodromes' available at [CAST publications | Civil Aviation Authority \(caa.co.uk\)](#).

5.6 Construction Management

Safeguarding aspects of a proposed development do not end with the grant of planning permission. The methods and equipment to be employed during construction may also need to be agreed, particularly if cranes or other tall construction equipment will be involved as these will be taller than the proposed development.

For a project close to an aerodrome or under the approach paths, a construction management strategy will need to be produced to ensure construction does not prejudice the safe operation of the aerodrome. In particular, but not exclusively, it should address the use of cranes or other tall construction equipment, activities likely to produce dust or smoke, temporary lighting, impact on radar or other navigational aids, storage of materials in compliance with height limitations and site management and dispersal of waste to prevent the attraction of birds.

Any equipment that emits electro magnetic frequencies has the potential to interfere with CNS systems (See section 5.3) utilised by the airport and will need to be assessed by the aerodrome operator.

Whether or not part of a construction management strategy, crane operators attention should be brought to the 'British Standard Code of Practice for the Safe Use of Cranes, BS 7121: Part 1' and CAA Publication 'CAP 1096: Guidance to Crane Users and Notification' available at www.caa.co.uk. Also, refer to Advice Note 4 'Cranes & Other Construction Issues' available at [CAST publications | Civil Aviation Authority \(caa.co.uk\)](#).

5.7 Lighting of Obstacles

The addition of warning lights to obstacles is intended to indicate the presence of hazards to aircraft operating visually at low levels while taking off or landing at an aerodrome, particularly at night or in conditions of poor daylight visibility. The aerodrome safeguarding process will determine whether a proposed development requires to be fitted with one or

AERODROME SAFEGUARDING ADVICE NOTE

more obstacle lights. This is applicable to temporary obstacles, such as cranes, as well as to permanent structures.

Where it is deemed necessary that obstacle light(s) would be required it should preferably be agreed before planning permission is granted or alternatively by a condition that can be attached to the planning permission. The condition should state the characteristics of the light(s) required. For further information with regard to the lighting of obstacles please refer to CAA Publications, 'CAP 1096: Guidance to Crane Users and Notification', 'CAP 738: Safeguarding of Aerodromes', 'CAP 168: Licensing of Aerodromes' and Aerodromes UK Regulations (EU) 139/2014 all available at www.caa.co.uk or contact the aerodrome operator.

Further details can also be found in Advice Note 2 'Lighting Near Aerodromes', available at [CAST publications | Civil Aviation Authority \(caa.co.uk\)](http://CASTpublications|CivilAviationAuthority(caa.co.uk)).

5.8 Windshear and Turbulence

Developments close to the aerodrome, depending on their size and location have the potential to cause windshear and turbulence that could be hazardous to aircraft operations.

Many combinations of built or natural landscaping can be the cause of this for example but are not limited to:

- Topography
- Buildings/structures
- Trees
- Chimney emissions

The above can create low level wind shear (horizontal and vertical) and vortices.

Turbulence is caused by a rapid irregular motion of air. If turbulence is severe and unexpected, sudden changes in the flight path of an aircraft may occur.

If after assessment there could be potential for turbulence, the aerodrome operator will request that a specialist study is commissioned so that any impacts can be determined, the cost of which will need to be met by the developer.

5.9 Glint and Glare

Developments proposed either on-aerodrome or off-aerodrome may have an impact on aerodrome operations through glint and glare and/or from the deflection of radar. Glint and

AERODROME SAFEGUARDING ADVICE NOTE

glare can emanate from several sources, including buildings or structures with large areas of glass or shiny materials, solar panels, water bodies, vehicle windscreens etc. Should glint and glare occur it can impact on personnel in the air traffic control tower and pilots of aircraft on final approach to the runways.

If after initial assessment there could be potential for glint and/or glare the aerodrome operator will request that an aviation specific study is commissioned bespoke to the particular aerodrome, the cost of which will need to be met by the developer.

For further information see 'CAP 738: Safeguarding of Aerodromes' available at www.caa.co.uk and in Advice Note 5 'Renewable Energy Developments: Solar Photovoltaic Developments' available at [CAST publications | Civil Aviation Authority \(caa.co.uk\)](#).

6. Public Safety Zones (PSZ)

Public Safety Zones are areas of land at the ends of the runways at the busiest aerodromes within which development is restricted to control the number of people on the ground at risk of death or injury in the event of an aircraft accident on take-off or landing.

The policy objective governing the restriction of development near civil aerodromes is that there should be no increase in the number of people living, working or congregating in PSZs and that over time, the number should be reduced as circumstances allow.

The PSZs are administered by the Civil Aviation Authority (CAA), who have taken over responsibility from the DfT for the implementation of new PSZs and the review and update of existing PSZs.

It is the responsibility of the Local Planning Authority (LPA) to assess proposals within a PSZ.

Further details can be found in the DfT Policy Paper 'Control of development in airport public safety zones' and is available at www.gov.uk or contact the aerodrome concerned to check whether your site is situated within a PSZ.

With regard to Scotland the relevant regulations are 'Planning Circular: Control of development in airport public safety zones', available at www.gov.scot.

7. Pre-Planning Application Advice With Regard to Aerodrome Safeguarding

Prior to a formal planning application being submitted, it is advisable to contact the aerodrome operator concerned for informal advice on how to comply with the aerodrome

AERODROME SAFEGUARDING ADVICE NOTE

safeguarding requirements. The aerodrome operator's advice will depend on the level of detail provided. If it believes a detailed study is required in relation to specialist aspects such as the potential impact on CNS, bird hazard management etc, it may advise that a suitable consultant be engaged so that their reports can be included with any subsequent planning application.

Any advice would be informal and without prejudice to detailed consideration of any future planning application(s). The absence of any safeguarding concerns should not be construed as support for any proposed development(s).

It is anticipated that aerodromes may make a charge for pre application assessments.

This advice note has been revised and updated by the Combined Aerodrome Safeguarding Team (CAST) from that produced by the Airport Operators Association (Safeguarding Working Group) with the support of the CAA. Its contents may be reproduced as long as the source is acknowledged.

Further CAST Safeguarding Information is available at <https://www.caa.co.uk/combined-aerodrome-safeguarding-team-cast/>.