Safeguarding of Aerodromes

Advice Note 1

Aerodrome Safeguarding – An Overview

1. Introduction

This is the first in a series of Airport Operators Association (AOA) Advice Notes supported by the Civil Aviation Authority (CAA). The purpose is to provide guidance to those who are considering applying for Planning Permission. It details possible implications if a proposed development is located within the safeguarded area around an aerodrome. This Advice Note 1 explains the process to be followed and highlights the relevant considerations. Further Advice Notes cover a number of 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, selected on the basis of 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 point 3 below). A similar official safeguarding system applies to certain military aerodromes, selected on the basis of their strategic importance.

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 (LPA). It is now the published advice of the UK Government that all aerodromes should be safeguarded.

3. What is Aerodrome Safeguarding?

Aerodrome safeguarding covers a number of aspects:

- Protecting the airspace around an aerodrome to ensure no buildings or structures may cause danger to aircraft either in the air or on the ground. This is achieved through the 'Obstacle Limitation Surfaces' (OLS). See Para 5.1
- Protecting the integrity of radar and other electronic aids to navigation by preventing reflections and diffractions of the radio signals. See Para 5.2
- Protecting aeronautical lighting, such as approach and runway lighting, by ensuring that they are not obscured by any proposed development and also that any proposed lighting could not be confused for aeronautical ground lighting. See Para 5.3
- Protecting the aerodrome from any increased wildlife strike risk. In particular bird strikes, which pose a serious threat to flight safety. See Para 5.4
- Preventing any construction processes from interfering with aerodrome operations through the production of dust/smoke, temporary lighting or construction equipment impacting on radar and other navigational aids. See Para 5.5
- Protecting aircraft from the risk of collision with obstacles through appropriate lighting. See Para 5.6

All of the above will be taken into account 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 included in UK legislation as an integral part of the Planning Process. It is set out in Circular 01/2003 'Safeguarding of Aerodromes, Technical Sites & Military Explosives Storage Areas: The Town & Country Planning (Safeguarded aerodromes, Technical Sites & Military Explosives Storage Areas) Direction 2002' For England, available at www.gov.uk and Circular 02/2003 for Scotland, available at www.gov.scot

The statutory process relates to aerodromes licenced to UK CAA requirements and those certificated by the UK CAA to European Aviation Safety Agency (EASA) requirements.
Aerodromes supporting national defence requirements are also included within the statutory provisions.

Operators of officially safeguarded aerodromes and the Secretary of State for Defence will issue maps to LPAs demonstrating the safeguarded areas. These may extend out to a 15km radius from the aerodrome. A wind turbine safeguarding map that will typically stretch out to a 30km radius (for civil aerodromes only). It should be noted that these distances could vary between aerodrome to aerodrome. It is recommended that planners and developers contact the aerodrome concerned in order to clarify and obtain further details as required.

The Aerodrome Operator of the officially safeguarded aerodrome is a 'Statutory Consultee' under the aforementioned safeguarding circulars. Therefore the LPA has to consult with the aerodrome with regard to certain planning applications within the safeguarded area. For example: developments over certain heights; whether the development could be a wildlife hazard attractant; if the proposals contain wind turbines, and in some instances solar 'farm' developments. The response of the aerodrome operator must be taken into account 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)
- 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
- 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 in order to assess any potential impact the development may have on aeronautical communication navigational and surveillance aids and to ensure that the development does not increase the wildlife strike risk to the aerodrome
- Any other information that may be deemed necessary to assess the application

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 Paras 20 & 21 of Annex 2 of the Safeguarding of Aerodromes Circular 01/2003 or in Para 25 of Circular 02/2003 in the case of Scotland.

If it is found after assessing the proposals that 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:

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

4.2 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 any planning approval granted. For example requiring a full landscaping scheme, a Wildlife/Bird Hazard Management Plan, drainage details etc. be submitted.

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

4.4 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 Paras 20 & 21 of Annex 2 of the Safeguarding of Aerodromes Circular 01/2003 or Para 20 in Circular 02/2003 for Scotland.

Should the LPA propose to grant planning permission contrary to the advice of the 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. The LPA may not grant permission before the expiry of 28 days. For full details of the procedure see Annex One of the Safeguarding Circular 01/2003 or Para 25 in Circular 02/2003 for Scotland.

Certain types of development are permitted under the Town & Country Planning (General Permitted Development) Order or comparable regulations. Some Aerodrome Operators have specific safeguarding arrangements with regard to permitted development, (e.g. restricting the use of cranes in critical areas) by using an 'Article 4 Direction' which forms part of the Town & Country Planning Act. Further details with regard to 'Article 4 Directions' can be found at www.planningportal.gov.uk

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) represent the lower limit of the blocks of protected airspace around an aerodrome. 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.

The OLS completely surround the aerodrome, but those surfaces aligned with the runway(s) used to protect the aircraft landing and taking off can be more limiting than those surrounding the rest of the aerodrome. For guidance please refer to Civil Aviation Authority Publication CAP168 'Licensing of Aerodromes' available at www.caa.co.uk, European Aviation Safety Agency (EASA) 'Certification Specifications & Guidance Material for Aerodrome Design CS-ADR- DSN, Book One Chapters H & J and Book Two Chapters H & J, or contact your local aerodrome.

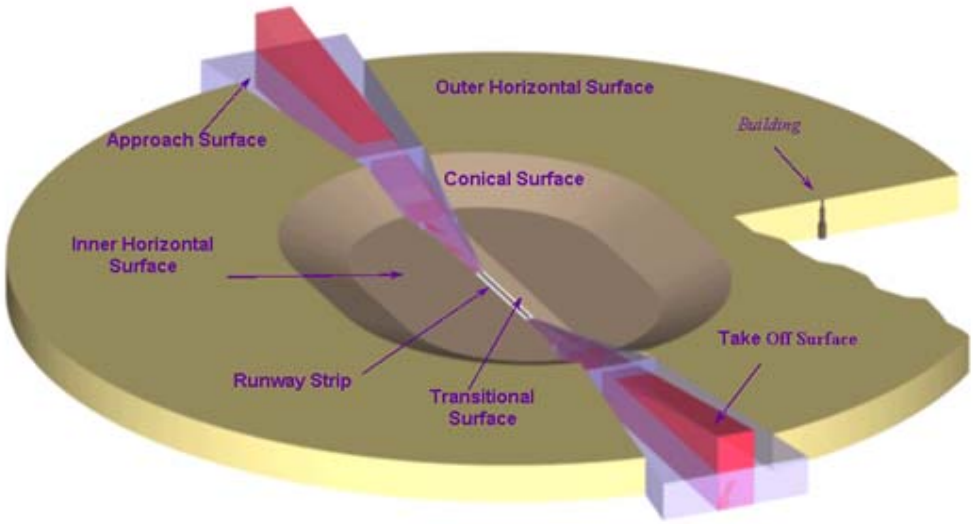

Figure 1: *Obstacle Limitation Surfaces (OLS) Diagram (For Guidance Only)*

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 should be taken into account 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 under Paras 11 & 12 in the Aerodrome Safeguarding Circular 01/2003 as mentioned previously in this Advice Note.

5.2 Radar & Other Electronic Aids to Air Navigation

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 with radar signals used in the operation of navigational aids, for example by:

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

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 seeking planning consent.

For further information with regard to the potential impact on renewable energy sources on aerodromes, please refer to Advice Note 5 'Renewable Energy & Impact on Aviation'.

5.3 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.'

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' further details.

5.4 Wildlife Hazard Management

Aircraft are vulnerable to wildlife strike risk, in particular birdstrike. 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, and 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 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.'

5.5 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 or 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.

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 CAP1096 'Guidance to Crane Operators on Aviation Lighting and Notification 'available at www.caa.co.uk. Also, refer to Advice Note 4 'Cranes & Other Construction Issues'.

5.6 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 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 please refer to the CAA website at www.caa.co.uk or contact the aerodrome operator.

Further details can also be found in Advice Note 2 'Lighting near Aerodromes.'

6. Public Safety Zone (PSZ)

Public Safety Zones are areas of land at the ends of the runways at the busiest aerodromes within which development is restricted in order 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 basic 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 Department for Transport (DfT) for the implementation of new PSZs and the review and update of existing PSZs.

Further details can be found in DfT Circular 01/2010 'Control of Development in Airport Public Safety Zones' available at www.gov.uk or contact the aerodrome concerned to check whether your site is situated within a PSZ.

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

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 potential impact on radar, wildlife hazard management, 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).

The Advice Notes in this series are:

- **Advice Note 1 'Aerodrome Safeguarding an Overview'**
- **Advice Note 2 'Lighting Near Aerodromes'**
- **Advice Note 3 'Wildlife Hazards around Aerodromes'**
- **Advice Note 4 'Cranes & Other Construction Issues'**
- **Advice Note 5 'Renewable Energy and Impact on Aviation'.**

The Advice Notes are all available from the Airport Operators Association (AOA) at www.aoa.org.uk