AIRPORT OPERATORS ASSOCIATION

&

GENERAL AVIATION AWARENESS COUNCIL

supported by

CIVIL AVIATION AUTHORITY

'Working in Co-operation'

SAFEGUARDING OF AERODROMES

Advice Note 1

Safeguarding - An Overview

1. The Purpose of this Advice Note

This is the first in a series of Advice Notes written jointly by the AOA, CAA and GAAC the purpose of which is to inform those who are considering applying for Planning Permission, of the potential implications if the proposed development is located within the safeguarded area around an aerodrome or airfield. This first Note explains the process that will be followed and highlights the relevant issues. Later Notes cover a number of the issues that will be addressed in the safeguarding of an aerodrome and provide some advice on how potential conflicts with safeguarding requirements can be overcome.

2. What is Safeguarding?

Safeguarding is a term in planning law meaning to safeguard an established land-use.

Safeguarding is achieved by a process of checking proposed developments so as to:

- protect the blocks of air through which aircraft fly, by preventing penetration of surfaces created to identify their lower limits;
- protect the integrity of radar and other electronic aids to air navigation, by preventing reflections and diffractions of the radio signals involved;
- protect visual aids, such as Approach and Runway lighting, by preventing them from being obscured, or preventing the installation of other lights which could be confused for them;
- avoid any increase in the risk to aircraft of a birdstrike by preventing an increase in hazardous bird species in the vicinity of the aerodrome and, whenever the opportunity arises, to reduce the level of risk.

3. Planning Applications and the Safeguarding Process

The Aerodrome Safeguarding Process is included in UK legislation as an integral part of the planning procedure. It is set out in Directions contained in Circulars issued under the Town and Country Planning Acts.

Local Planning Authorities (LPAs) are advised, usually by issue of maps, of the safeguarded area around an aerodrome. The LPAs then consult with the aerodrome concerned about any Planning Application within this area, should it meet certain criteria relating to the height and location of the proposed development to the aerodrome. In addition, any proposed developments with bird attractant properties within 13km of the aerodrome will also be referred for consultation, as will any wind turbines within at least 30km, and sometimes far more, of an aerodrome.

Although planning applications are subject to the Safeguarding Process, this does not mean that they are automatically objected to; the process is in place to facilitate a detailed assessment. To enable an accurate assessment of a proposed development, the aerodrome operator requires certain information about the proposals to be provided, namely:

- the location as an OS Grid Reference (to at least 6 figures for each of eastings and northings);
- the elevation of the site [to an accuracy of 0.25m Above Ordnance Datum (AOD)];
- the layout, dimensions and, particularly, heights of the proposed development;
- other information as may be necessary, for example, landscaping details to enable the birdstrike potential to be assessed, or the types of cladding materials proposed so that the potential for radar reflection can be modelled.

NOTE: Heights "Above Ordnance Datum (AOD)" are those shown on Ordnance Survey maps as "above mean sea level" (amsl).

The aerodrome(s) concerned will assess a Planning Application with reference to:
- the **Obstacle Limitation Surfaces** which protect Visual and Instrument Flight Paths;
- the effect on **Visual** and **Electronic Aids to Air Navigation**;
- the potential to attract **Birds**.

These are explained further in later paragraphs of this Advice Note.

Following assessment, the reply from the aerodrome(s) to the LPA will state one of the following:
- no objection;
- no objection subject to certain stated conditions;
- objection (with reasons given).

This should be taken into account, together with all the other responses, when the LPA determines the outcome of the Planning Application.

Certain forms of development are permitted under the Town & Country Planning (General Permitted Development) Order 1995, or comparable regulations, and there are specific safeguarding arrangements provided for relevant aerodromes. Where an LPA is consulted by a developer regarding the exercise of a permitted development right under these regulations, the LPA should refer the developer direct to the aerodrome operator for safeguarding advice.

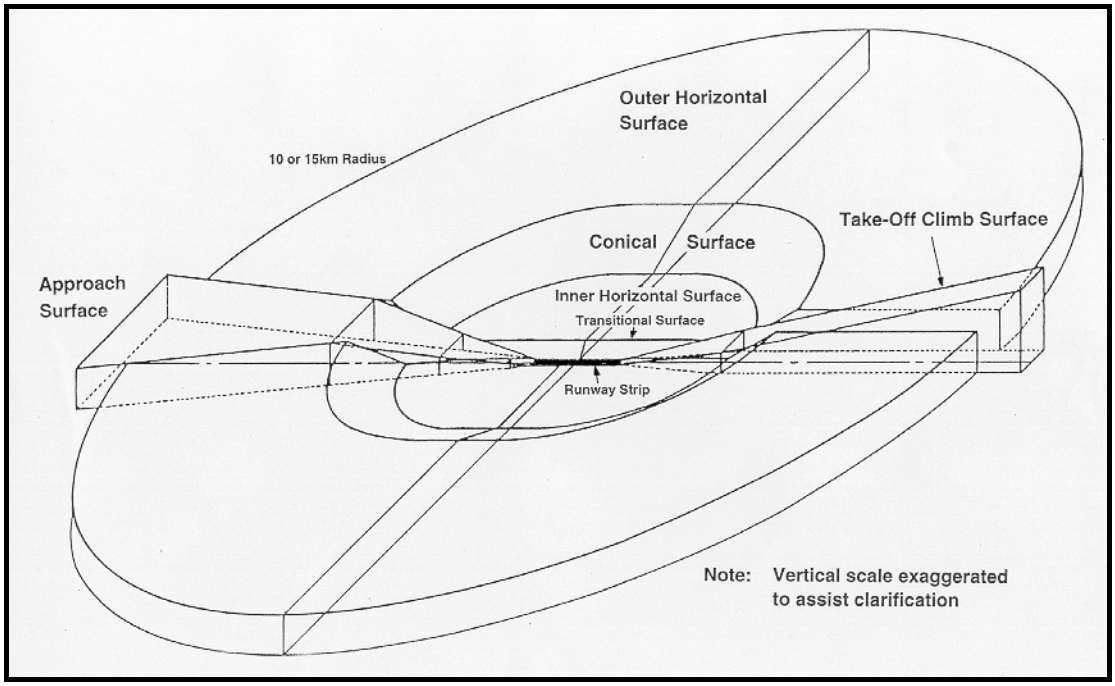
4. Obstacle Limitation Surfaces (OLS)

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).

The OLS completely surround the aerodrome, but those surfaces aligned with the runway(s) used to protect aircraft landing or taking-off can be more limiting than those surrounding the rest of the aerodrome, particularly as you get closer to the aerodrome. Details of the OLS can be found in *Civil Aviation Publication CAP 168 Licensing of Aerodromes*, which is available on the internet at <www.caa.co.uk/publications>.

Under the terms of their Licence, aerodromes are required to take all reasonable steps to ensure the aerodrome and its airspace are safe for use by aircraft. It is for this reason that accurate information on the location and height of a proposed development within the vicinity of an aerodrome is required. The

height of vehicles is taken into account when evaluating roads and parking areas within proposed developments, unless any lighting involved is taller. Railways are treated in a similar manner.



Obstacle Limitation Surfaces

5. Radar and other Electronic Aids to Air Navigation

In low visibility conditions pilots are entirely dependant on the accuracy of the information displayed on the instruments in the cockpit to navigate and land their aircraft. Similarly, air traffic controllers rely on the accuracy of the information displayed on the radar screens in front of them to maintain safe separation between aircraft. It is essential, therefore, that this information has not been distorted by interference to the radio signals involved used in the operation of the navigation aids.

The safeguarding process is used to protect such installations from:

- radio frequency interference from other sources of radio emissions;
- radio signal reflections or diffractions caused by physical objects.

A recent and less obvious source of radio frequency interference is the wind-driven generator. Therefore, proposed wind turbines within the vicinity of aerodromes need to be considered in the safeguarding process. The distance within which a turbine installation may impact on an aerodrome will vary from aerodrome to aerodrome but would normally expect to extend to at least 30km and sometimes much further.

For further information refer to **Advice Note 7 – Wind Turbines and Aviation**

6. Visual Aids

Visual aids, consisting primarily of aeronautical ground lighting, assist pilots to line up the aircraft with the runway when approaching to land. These are protected by:

- preventing them from being obscured;
- preventing the installation and display of other lights, particularly street lighting, in a pattern or colour which could be mistaken for visual aids;
- preventing a high level of background lighting which could diminish their effectiveness;
- preventing other lights which could dazzle pilots.

For further information refer to **Advice Note 2 - Lighting near Aerodromes**.

Temporary outdoor light displays, particularly those involving **lasers, searchlights** and/or **fireworks,** under the approach to a runway or in the vicinity of an aerodrome, should be notified to the CAA. For advice and notification contact the Airspace Utilisation Section, Directorate of Airspace Policy (K1), CAA House, 45-59 Kingsway, London WC2B 6TE (Tel: 020 7453 6588, Fax: 020 7453 6593). Permanent displays should normally be identified and evaluated through the safeguarding process.

7. Bird Hazard

Birdstrikes - collisions between birds and aircraft - cost the aviation industry around £750 million per year in damage and delays to aircraft and are a major hazard. Occasional catastrophic losses have resulted in over 225 deaths and 70 aircraft destroyed in civil aviation. Over 80% of birdstrikes occur on or close to aerodromes and their operators are required to take necessary steps to ensure that the birdstrike risk is reduced to the lowest practicable level.

The risk to aircraft arises from birds that move into the path of aircraft, either because they are on the aerodrome itself, or because they are crossing the airfield or its approaches as they move between sites which may be many kilometres outside the aerodrome. Aircraft are particularly vulnerable to collisions with large birds such as swans and flocks of small, medium and large birds such as Starlings, gulls and geese.

Birds are attracted to the vicinity of an aerodrome by various types of development, including water features, landfill sites, nature reserves, gravel extraction and landscaping.

The objective of the safeguarding process is to prevent any increase in, and where possible reduce, the birdstrike risk at an aerodrome. This may be possible by altering planning proposals to remove bird attractive features or, failing this, to object outright to those that cannot be adequately redesigned.

When determining whether a planning application will increase the birdstrike risk at an aerodrome the following factors will be taken into account:

- what types of development are attractive to which species of bird;
- whether birds will move from existing sites to the proposed one and, in the process, cross aircraft flight paths near to the aerodrome, or indeed move onto the aerodrome itself.

For further information refer to **Advice Note 3 - Potential Bird Hazards from Amenity Landscaping and Building Design** and **Advice Note 5 - Potential Bird Hazards from Landfill Sites**, **Advice Note 6 – Potential Bird Hazards from Sustainable Urban Drainage Schemes (SUDS)**.

8. Construction Concerns

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 tend to be taller than the proposed structure.

For a project close to the aerodrome or under the approach, a **construction management strategy** may need to be produced to ensure construction does not prejudice the safe operation of that aerodrome. In particular, but not exclusively, it should address the use of cranes or other tall equipment, activities likely to produce dust or smoke, temporary lighting, etc.

Whether or not part of a construction management strategy, the attention of Crane Operators should be brought to the *British Standard Code of Practice for the Safe Use of Cranes, BS 7121: Part 1*, particularly paragraph *9.3.3 Crane control in the vicinity of aerodromes/airfields*.

For further information refer to **Advice Note 4 - Cranes and Other Construction Concerns**.

9. Lighting of Obstacles

The addition of warning lights to obstacles is intended to indicate the presence of hazards to aircraft operating visually at low level while taking-off or landing at an aerodrome, particularly at night or in conditions of poor daylight visibility. The 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 would be advised to the LPA as a Condition for attachment to any Planning Permission that may be granted. The Condition would state the characteristics for the light(s), which are likely to be steady red light(s) of either 200 or 2,000 candelas visible from all directions. It is preferable that such lights should be illuminated at all times, rather than just during the hours of darkness.

10. Advice on Aerodrome Safeguarding

Prior to a formal Planning Application being made, the aerodrome concerned may be prepared to offer informal advice on how to comply with the safeguarding requirements. The aerodrome's advice will depend on the level of detail provided, but it is likely to be limited to lighting, landscaping and height limits. If it believes a detailed study is required in relation to specialist aspects such as the Bird Hazard or Navigational Aid installations, it may just advise that a suitable consultant be engaged so that their report(s) 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)

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The other Aerodrome Safeguarding Advice Notes available are:

Advice Note 2: Lighting near Aerodromes
Advice Note 3: Potential Bird Hazards from Amenity Landscaping and Building Design
Advice Note 4: Cranes and Other Construction Issues
Advice Note 5: Potential Bird Hazards from Landfill Sites
Advice Note 6: Potential Bird Hazards from Sustainable Urban Drainage Schemes (SUDS).
Advice Note 7: Wind Turbines and Aviation

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