



# ADVISORY CIRCULAR

The Guyana Civil Aviation Authority  
82 Premniranjan Place  
Prashad Nagar  
Greater Georgetown

Telephone Nos. 226-6634, 227-5561, 227-1219  
Fax 225-6800

**Aerodromes  
No. 01**

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**Subject: Safeguarding of Aerodromes**

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## 1. The Purpose of this Advisory Circular

The purpose of this Advisory Circular 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 airport, 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?

The word "Safeguard" means, to prevent something undesirable", while "Aerodrome" is a defined area where aircraft can land, take-off, taxi or park, and includes airfields, airports, heliports, etc. Thus, the purpose of Aerodrome Safeguarding is to take the measures necessary to ensure the safety of aircraft, and thereby the passengers and crews aboard them, while taking-off or landing, or while flying in the vicinity of an aerodrome.

This 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 by them;
- avoid any increase in the risk to aircraft of a bird strike 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

Central Housing and Planning Authorities (CH & PA) are advised, usually by issue of maps, of the safeguarded area around an aerodrome. The (CH & PA) then consult with the GCAA and the aerodrome concerned about any Application within the area, which meet certain criteria relating to the height and location of the proposed development to the aerodrome. In addition, any proposed developments with bird attract properties within the aerodrome will also be referred for consultation.

An application will not necessarily be denied only because the criteria require that it be subject to the Safeguarding Process. However such application will be subject to detailed assessment prior to approval. To enable accurate assessment of a proposed development, the aerodrome operator requires certain information, about the proposals, to be provided, namely:

- the location in relation to the aerodrome, preferably shown on an Ordnance Survey (OS) Grid reference map.
- the elevation of the site;
- 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;

The aerodrome(s) concerned will assess the 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 Advisory circular.

Following assessment, the reply from the aerodrome(s) to the CH&PA 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 CH & PA determines the outcome of the Planning Application.

### 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.

Under the terms of their Licence, aerodromes are normally required to prevent new developments or extensions to existing structures from infringing the OLS. It is for this reason that accurate information on the location and height of the proposed development is required.

## **5. Radar and other Electronic Aids to Air Navigation**

In low visibility conditions pilots are entirely dependent 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 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.
- Maps and Charts to aid Air Navigation

Both pilots and controllers rely on accurate information published on aeronautical charts to ensure safety in aircraft operations and to avoid accidents in which aircraft come into contact with obstacles.

Aerodromes are required to publish charts containing information at and within its environment. It is therefore essential that the information provided to the aerodrome authority must be accurate.

## **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.

## **7. Temporary Lights**

Note: Temporary outdoor light displays, particularly those involving lasers, searchlights and/or fireworks, under the approach runway or in the vicinity of an aerodrome, should be notified to the Guyana Civil Aviation Authority (GCAA).

The Aerodrome Operator has responsibility for arranging the publication of NOTAM.

## 8. Bird Hazard

Birdstrikes - collisions between birds and aircraft are a major hazard. Operators are required to take necessary steps to ensure that the birdstrike risk is reduced to the lowest practicable level. Research has shown that the vast majority of bird strikes occur in the vicinity of aerodromes.

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 kilometers 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.

## 9. 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 approaches, 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.

## 10. Lighting of Obstacles

The addition of warning lights to obstacles is intended to reduce the 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 CH&PA 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) for 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.

## 11. Advice on Aerodrome Safeguarding

Prior to a formal 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 application.



Z. Mohamed  
Interim Director General