

NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK

MANAGING THE RISK OF DISTRACTIONS TO PILOTS FROM LIGHTING
IN THE VICINITY OF AIRPORTS

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Feb 2012	5.1.1	Document Creation	NASAG
Apr 2012	5.1.2	Drafting changes post consultation process	SCOTI
Jul 2012	5.1.3	Version control table added. Page numbers added.	S. Stone, GM Aviation Environment, DOIT.
27/10/2014	5.1.4	Footnote added to reference runway centre as centre of buffer zone	S. Stone, GM Aviation Environment, DIRD

Purpose of Guideline

1. This document provides guidance to assist local governments and airport operators to jointly address the risk of distractions to pilots of aircraft from lighting and light fixtures near airports.

Why it is important

2. The *Principles for a National Airports Safeguarding Framework* acknowledge the importance of airports to national, state/territory and local economics, transport networks and social capital.
3. Pilots are reliant on the specific patterns of aeronautical ground lights during inclement weather and outside daylight hours. These aeronautical ground lights, such as runway lights and approach lights, play a vital role in enabling pilots to align their aircraft with the runway in use. They also enable the pilot to land the aircraft at the appropriate part of the runway.
4. It is therefore important that lighting in the vicinity of airports is not configured or is of such a pattern that pilots could either be distracted or mistake such lighting as being ground lighting from the airport.

How it should be used

5. Some States/Territories already have planning guidelines or policies in place and this document provides guidance for review. For those without policies in place, these Guidelines (in addition to the associated Safeguarding Framework) will provide input to new policies.
6. When planning applications are made that involve significant lighting, planning authorities should assess them first by drawing on these guidelines and second, where necessary, by referring them to the Civil Aviation Safety Authority (CASA) for detailed advice and assessment.

Roles and Responsibilities

7. State/Territory and Local Governments are primarily responsible for land use planning in the vicinity of all airports.
8. Australia's 19 major airports are under Australian Government planning control and are administered under the Airports Act 1996 (the Airports Act). Planning on other airports is undertaken by State, Territory Governments and Local Governments or private operators.
9. As a contracting state to the Convention on International Civil Aviation (the Convention) Australia has international obligations regarding the regulation and management of aviation safety. The International Civil Aviation Organisation (ICAO), which was established by the Convention, has established Standards and Recommended Practices covering all aspects of civil aviation safety.
10. CASA has powers under the Civil Aviation Act 1988 to regulate potential sources of distractions from lighting. Under Regulation 94 of the Civil Aviation Regulations 1988 (CAR 1988), CASA can require lights which may cause confusion, distraction or glare to pilots in the air, to be extinguished or modified.

Key considerations for managing risk of distractions to pilots from lighting in the vicinity of airports

11. It is important that these guidelines are consulted or CASA advice sought when new sources of significant lighting are being planned in the vicinity of airports. Examples of such developments include:
 - motorway/freeway lighting
 - sea container yards
 - wharves
 - refinery flare plumes
 - stadium flood lighting
 - construction lighting.

GUIDELINES FOR MANAGING RISK OF DISTRACTIONS TO PILOTS FROM LIGHTING IN THE VICINITY OF AIRPORTS

12. The following guidelines are provided to assist development proponents and planning authorities to ensure that lighting in the vicinity of airports does not compromise aviation safety. They should assist also in maintaining compliance with Regulation 94 of the Civil Aviation Regulations 1988.
13. Advice for the guidance of designers and installation contractors is provided for situations where lights are to be installed within a 6km radius¹ of a known aerodrome. Lights within this area fall into a category most likely to be subject to the provisions of regulation 94 of CAR 1988.
14. Within this large area there exists a primary area which is divided into four light control zones: A, B, C and D. These zones reflect the degree of interference ground lights can cause as a pilot approaches to land.

The 6km buffer radius is applied from the centre point of each runway.

15. The primary area is shown at **Attachment 1**. This drawing also nominates the intensity of light emission above which interference is likely. Lighting projects within this area should be closely examined to ensure that they do not infringe the provisions of regulation 94 of CAR 1988.
16. The fact that a certain type of light fitting already exists in an area is not necessarily an indication that more lights of the same type can be added to the same area. Even though a proposed installation is designed to comply with the zone intensities shown in **Attachment 1**, designers are advised to consult CASA as there may be overriding factors which require more restrictive controls to avoid conflict.
17. Light fittings chosen for an installation should have their iso-candela diagram examined to ensure the fitting will satisfy the zone requirements. In many cases the polar diagrams published by manufacturers do not show sufficient detail in the sector near the horizontal, and therefore careful reference should be made to the iso-candela diagram. For installations where the light fittings are selected because their graded light emission above horizontal conform to the zone requirement, no further modification is required.
18. For installations where the light fitting does not meet the zone requirements, a screen should be fitted to limit the light emission to zero above the horizontal. The use of a screen to limit the light to zero above the horizontal is necessary to overcome problems associated with movement of the fitting in the wind or misalignment during maintenance.
19. Coloured lights are likely to cause conflict irrespective of their intensity as coloured lights are used to identify different aerodrome facilities. Proposals for coloured lights should be referred to CASA for detailed guidance. Proponents should check with the nearest CASA office by calling on 131 757 for advice on the likely effect on aircraft operations of proposed lighting in the vicinity of an aerodrome.
20. The potential for glare caused by reflected sunlight from structures such as buildings has been raised in some quarters as a potential source of distraction to pilots. However, CASA has advised that glare from buildings tend to be momentary and therefore unlikely to be a source of risk. The potential for risk from building glare is further attenuated by the use of sunglasses which pilots normally wear in bright daylight.