



Defence  
Infrastructure  
Organisation

# Safety Alert

# Part A, B & C

**Subject: Aeronautical Ground Lighting: Loose or Missing Fixings for AGL Light Fittings**

**Number: SA 2020/50**

**DIO Sponsor:** Bryan Dunn

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**This Safety Alert is to be read by the following so appropriate action can be taken:**

1. DIO's Maintenance Management Organisations (MMOs)
2. DIO Regional Delivery Manager (or equivalent for non-NGEC contracts)
3. Head of Establishments
4. Others

**Others interested in the content of this Safety Alert might include:**

Aerodrome Operators, Assurance Managers, Health & Safety Advisors, Top Level Budget Holders, Prime Contractors, Project Managers, Infrastructure Managers and Property Managers with responsibility for MOD projects and Property Management Works Services (including the legacy work of EWCs/WSMs) etc.

**When it takes effect:** Immediately

**When it is due to expire:** When updated or rescinded.

Health and Safety

This Safety Alert does not necessarily cover all aspects of the subject matter and readers should make themselves aware of other potential issues. Readers should also not rely on DIO Publications as their only means of becoming aware of safety issues, but they should consult widely across other media to maintain awareness.

## **Aim**

1. The aim of this Safety Alert is to bring to the attention of appropriate persons or organisations on:
  - a. The risks associated with missing or loose Aeronautical Ground Lighting (AGL) fixings and the importance of undertaking timely Planned Preventative Maintenance (PPM) to prevent a Foreign Object Damage/Debris (FOD) hazard; and
  - b. The inspection and maintenance requirements for AGL installations as required by MAA Regulation 3590 (7); in addition to the requirements set out in the Maintenance Management Organisations' (MMO) PPM Schedules.

## **Introduction**

2. Compliance with the contents of this Safety Alert will enable compliance with the Health & Safety at Work etc. Act 1974 including MAA Regulations 3500 series.
3. On MOD Establishments occupied by United States Visiting Forces (USVF) responsibility is jointly held by USVF and DIO(USF). At base level this jointly managed organisation is to take appropriate action to implement the contents of this Alert. Where this Alert contains procedures, which differ significantly from USVF practice, DIO(USF) code of practice will be issued.
4. Any work required as a result of this Safety Alert must be carried out in accordance with the Management of Health & Safety in Ministry of Defence - JSP375.

## **Background**

5. Prior to the departure of a military aircraft at a MOD aerodrome, the Air Operation Assurance Team conducted their usual FOD check from the stand out to the taxiway. During this check the Team noticed some taxiway centreline light fittings had loose nuts (See the photographs at Annex A).
6. The issue was immediately reported to the MMO's maintenance team who, in conjunction with the Aerodrome Operation Assurance Team, jointly conducted an inspection on the taxiway centreline lighting service. The inspection found most taxiway centreline light fittings had loose fixings i.e. nuts. Also, nuts were found to be missing from some light fittings.
7. Following the inspection, the ATC was instructed to close the taxiway until the completion of a full check of the taxiway centreline lighting service.
8. Subsequently, the Teams randomly checked the fixings on the light fittings on other AGL services and found multiple light fittings on those services also had either loose or missing nuts.
9. This incident was reported to the MAA and Defence Air Safety Occurrence Report (DASOR-19-9046) has been published and the DIO Technical Services Team were informed by the Aerodrome Operation Assurance Team.
10. An investigation was undertaken by the MMO to determine the root-cause of the incident; and the subsequent report has made several recommendations.

11. The Biennial Airfield Maintenance Inspection Reports have also identified the presence of loose and missing fixings at several aerodromes.

## **Requirement**

12. All visual aids equipment installations, including supporting infrastructure and facilities are to be inspected and, where required, tested; and their condition and performance are to be monitored regularly as part of an aerodrome planned preventive and corrective maintenance programme. General inspection and maintenance include: cleaning, checks on electro-mechanical components, structural integrity of the installation and normal function, repair and replacement of all facilities and their supporting infrastructures.

**(See - MAA Regulations 3590 (7) : Paragraphs 59 and 68)**

13. In accordance with the requirements in MAA Regulation 3590(7) all visual aids equipment is to be inspected and, where required, tested; this includes fixings on AGL lights fittings to ensure they are secure and tightened to the correct torque setting.
14. DIO PPM (Hard FM Standards and Tasks Schedule) for AGL Maintenance includes a weekly visual inspection of light units & mounting methods for physical condition, secureness, and functionality etc. and their repair as necessary. A requirement to regularly check the torque setting of fixings is also included.
15. The MMOs are required to ensure the tasks are performed at an appropriate frequency to ensure the mechanical integrity of the AGL installation is maintained in a safe condition.

## **Part A**

16. This Safety Alert concerns all AGL light fittings, both inset and elevated, installed on or near either fixed-wing or rotary-wing operating surfaces at aerodromes and similar (helipads, etc.) where the presence of loose or of missing fixings may create a FOD Hazard.
17. All personnel undertaking daily, weekly, or other inspections of Air Operating Surfaces are to be made aware of the potential FOD issue arising from loose AGL fixings and to be particularly vigilant for FOD emanating from AGL fittings whilst undertaking their normal activities.

## **Part B**

18. In the light of DASOR-19-9046 and the issue identified by Biennial Airfield Maintenance Inspections, the DIO Regional or Service Delivery personnel, or their representative, is to conduct a review of the MMO's AGL Maintenance Records and be assured through the review that the inspection and maintenance of all the installed AGL fittings on MOD aerodromes have been undertaken on a regular basis; and in particular regular torque setting checks have been undertaken with both findings and, where necessary, confirmation of completed remediation work recorded.
19. The Review is to include quantitative as well as qualitative aspects of the AGL Maintenance Records.
20. Where the Review demonstrates that inspection, maintenance, and remediation are suitable and adequate, the Review Report and collected-evidence are to be retained for

inspection during the next Biennial Airfield Maintenance Inspection or Technical Services' Inspection. The 'satisfactory' outcome of the Review should not introduce additional actions on the MMOs.

- 21.** If the outcome of the Review is 'unsatisfactory'; the MMO, on direction from the DIO Regional Delivery Manager or Equivalent, shall initiate the following task:
  - a. A visual inspection of all AGL fittings to ensure all fixings are present with a sample of light fittings from each AGL service to be checked to confirm the fixings are tightened to the required torque setting in accordance with manufacturer's instructions. It is recommended the sample comprises of at least 10% or 5 light fittings per service with this being increased if loose fixings are found. Where practicable, missing fixings are to be immediately replaced and tightened to the required torque setting. Where this is not practicable arrangements are to be made to repair the seating arrangement and Air Traffic informed of the potential FOD risk.
  - b. A record of the inspected AGL fittings identifying those that required remedial work including the nature of the work is to be produced.
  - c. On completion, the findings of the inspection are to be reviewed and, where necessary, the frequency of the inspection and maintenance activities are to be amended to ensure the AGL fittings remain secure and do not pose a FOD risk.
- 22.** The Inspection Record, its review and subsequent amendments to the maintenance activities are to be retained for inspection during the next Biennial Airfield Maintenance Inspection or Technical Services' Inspection.

### **Part C**

- 23. 14.** The MMO is to notify the DIO Regional Delivery Safety Alerts Team (DIO-RDSafetyAlerts@mod.gov.uk) through their respective DIO Regional Delivery Manager or equivalent, of the findings from the Inspection detailed in Part B Paragraph 21 by forwarding a copy of either the completed Inspection Report or the maintenance records including details of remediations required as a result of the maintenance activity.

Photographs



Photograph – 01: Missing Nut



Photograph – 02 : A Loose Nut



Photograph – 03 : Loose Nuts