



Defence  
Infrastructure  
Organisation

# Safety Alert Part A, B, & C

**Subject: Falling Overhead Gas Radiant Tube Heater Fan Assembly Component (Ambi-Rad model 1979 - 1995)**

**Number: SA 2021/04**

**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. Heads of Establishment**
- 2. DIO Service Manager (or equivalent for non-NGEC contracts)**
- 3. Maintenance Management Organisations**
- 4. Others**

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

Top Level Budget Holders, TLB Infrastructure Branches, Prime Contractors, Private Finance Initiatives, Public-Private Partnership and other traditionally procured contracts, Project Managers, Infrastructure Managers and Property Managers with responsibility for MOD projects and Property Management Works Services (including the legacy work of EWCs/WSMs), Health & Safety Advisors.

**When it takes effect:** Immediately

**When it is due to expire:** When updated or rescinded.

Health and Safety

## Aim

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, operational or technical issues, but they should consult widely across other media to maintain awareness.

To bring to the attention of appropriate person's the potential risks of falling assembly components from overhead gas radiant heaters with attendant risk of serious or fatal injury to personnel, damage to fabric of the building or equipment should a heavy component fall from height.

## Introduction

1. Compliance with the contents of this Safety Alert (SA) will enable compliance with the Health & Safety at Work etc. Act 1974 and its subordinate Regulations.
2. The appropriate MOD officer shall arrange for and ensure the Maintenance Management Organisation (MMO) contractor to carry out all actions in accordance with this Alert.
3. Contractors and MMOs are to keep informed the establishment Health, Safety and Environmental Protection Adviser and 4Cs Duty Holder on behalf of the Head of Establishment regarding progress of actions required of this Safety Alert.
4. Any work required because of this Safety Alert must be carried out in accordance with JSP 375.
5. 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 Safety Alert.

## Background

6. Overhead gas radiant tube heater systems are commonly installed within the Defence Estate. The systems are typically used in large leisure and working environments providing space heating and commonly found in Leisure Facilities, Storage Depots, Maintenance Facilities, Hangars and Garage Facilities.
7. This Safety Alert follows the investigation of a recent incident whereby operatives within a working garage found a component from the overhead gas fired radiant tube heater on the floor of the servicing bay. The component had fallen from height from the system situated in the roof space of the workshop. No injury to personnel resulted from this incident as the workshops were closed at the time.
8. With regular and appropriate servicing in a planned preventative maintenance system, the designed working life expectancy of these gas fired radiant tube heater systems can be achieved and prolonged, however this can be dependent on their use and environmental conditions. It is recognised that due the age of some of these assets some components have become obsolete which will prevent subsequent repairs on the system when a part fails.
9. Investigation of the incident identified the failure of the fan assembly was due to slow deterioration of the spot welds securing the spinning plate spigot to the emitter heating tubes. This resulted in the detachment of the component part which then fell from height to the garage floor.



Photograph 1: Fan motor assembly with missing spigot that locates onto the radiator heat emitter tube pipe (see Photograph 3)



Photograph 2: Fan motor assembly and motor was found on the workshop floor where the cone is placed.



Photograph 3: Fan motor assembly fell from the gas radiant tube heater shown by arrow point



Photograph 4: Fan motor assembly fixing plate and spot-welding points on the spigot that locates onto the radiant tube emitter pipe spot welding is in poor condition, not suitable for further service. A further 60 Fan motor assembly and spigots were checked with a further five been removed due to signs of failure on the spot welding within this establishment gas radiant heater systems.

## Requirement

10. All Gas Radiant Tube Heaters should be subject to PPM which will include as a minimum, electrical and mechanical inspection, testing and cleaning whilst also ensuring compliance with manufactures requirements.
11. During such maintenance and inspection, the operatives will need to be vigilant ensuring that any corrosion is identified and treated, and that spot welds are in good serviceable condition.
12. Any work incurring expenditure of MOD funding requires appropriate authority from the MOD officer responsible for the establishment.

## Part A

13. The MMO, on direction from the DIO Service Manager or Equivalent, shall initiate the following tasks:
  - a. Confirm that the units are on the asset register and are subject to an appropriate PPM schedule and the maintenance, inspection and testing is in date.
  - b. Identify and assess all assets by model, serial number, age and condition, define their present and future serviceability this would include:
    - Those systems that are operational but are approaching their end of life expectancy.
    - Those systems that are non-operational and not repairable but have not been decommissioned.
    - Details of systems that have been decommission or removed previously but not replaced
    - Systems where there is an issue with the manufacturers or suppliers providing consumables or replacements parts.
14. If there is doubt about the serviceability or the safety in use, then it is recommended that consideration is given to their isolation, replacement or decommissioning and removal.
15. The MMO is to notify the DIO Service Manager, HoE and establishment 4Cs Duty Holder of any isolated units. Where defective units are identified on an Establishment, the 4Cs risk register should be suitably annotated.
16. The MMO is to notify the DIO Service Delivery Performance Management Team, DIO SD-Perf Mgt Team (MULTIUSER) account, through their respective DIO Service Manager identifying the location, quantity, model number, of units identifying date of last inspection, maintenance and testing. The Head of Establishment should be notified where unrecorded and unmaintained units are identified.
17. The contents of this Alert should be considered when undertaking Inspections or Appraisals of this type of asset.
18. **A nil return is required from Establishments** with no Gas Radiant Tube Heaters
19. The data requested in **Part A** is required by 29th October 2021 and will be reviewed on the 30th November 2021.

## Part B.

20. Any Gas Radiant Tube heaters isolated under **Part A** of this Safety Alert are not to be returned to service until it has been subject to appropriate maintenance, testing and inspection and **ALL** remedials identified are completed with emphasis on ensuring that the fan motor assembly fixing plate and spot-welding points spigot that locates onto the radiator emitter pipe are in good condition suitable for further service.
21. On completion of any necessary maintenance, inspection and testing and any remedial work the units can be returned to service.

22. The MMO is to notify the DIO Service Manager, HoE and establishment 4Cs Duty Holder when any unit is returned to service.
23. Once the condition, age and serviceability of the assts is known the MMO is requested to provide an establishment specific Asset Management Plan, for approval of DIO Service Manager, detailing their strategy for the planned preventative maintenance (or replacement where appropriate) of these assets by 5<sup>th</sup> January 2022

**Part C.**

The MMO is to notify the DIO Service Delivery Performance Management Team, DIO-RDSafetyAlerts@mod.gov.uk (MULTIUSER) account, through their respective DIO Service Manager of the date action detailed in **Part B** was completed.