



Defence  
Infrastructure  
Organisation

## SAFETY ALERT

**Subject: POTENTIAL SAFETY ISSUE WITH  
HONEYWELL GAS CONTROL VALVE TYPE  
4400C/122**

**Number: SA 03/15**

**DIO Sponsor:** Bryan Dunn

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**Who Should Read this:** Top Level Budget Holders, DIO Service Delivery Site Estate Authority Teams, Project Managers, Prime Contractors, Private Finance Initiatives, Public, Private Partnership and other traditionally procured contracts, d Property Managers with responsibility for MOD projects and Property Management Works Services (including the legacy work of EWCs/WSMs), Coordinating Authorising Engineers, Authorising Engineers (Mech), Authorised Persons (Mech) and Responsible Persons (Gas).

**When it takes effect:** Immediately

**When it is due to expire:** When updated or rescinded.

Health and Safety

### Aim

1. The aim of this Safety Alert is to draw to the attention of those commissioning works, undertaking maintenance, or carrying out inspections involving gas control valves.

### Introduction.

2. A serious incident has occurred involving a Honeywell 4400C/1211 gas control valve, fitted to a Stelrad/Ideal Concorde CX LTHW boiler. The fault has found to be the failure of the diaphragm spring. This allowed the boiler to be supplied with gas, even after being electrically isolated.
3. Compliance with the contents of this Alert will enable compliance with the Health & Safety At Work Etc Act 1974 and its subordinate Regulations.
4. The appropriate MOD officer shall arrange for the Maintenance Management Organisation (MMO) contractor to carry out all requirements/actions in accordance with this Alert.
5. Any work required as a result of this Safety Alert must be carried out in accordance with JSP 375 Part 2 Volume 3 – High Risk Activities on the Defence Estate.
6. 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.

### **Requirement**

7. Following a serious incident at RAF Alconbury addresses are requested to positively identify whether they have Honeywell Type 4400C/1211. This should be done during the next routine maintenance visit
8. If these valves are found, a Gas Safe technician is required to carry out a detailed inspection, service, repair or replacement, where necessary.
9. The inspection should substantiate that the gas control valve 'fails safe' on any fault scenario to prevent the continued flow of gas.

### **Background**

10. A maintenance engineer was called to investigate 'popping and banging' noise coming from the boiler plant room. The engineer witnessed the LTHW system temperature, normally 65-70°C, was raised to an indicated 115°C with steam emitting from the feed and expansion tank.
11. At this point the Engineer electrically isolated all three boiler units at their respective isolation switches, leaving the water circulation pumps on to dissipate the system's heat and withdrew to the outside of the plant room.
12. On return it was found that boiler number 3 was still functioning with its three burner tubes alight. The main gas supply to the boilers was then physically isolated, which immediately extinguished boiler number 3 burners.
13. A detailed inspection of the Honeywell Gas Control Valve (Type 4400C) from boiler number 3 found that the internal diaphragm spring had snapped into two parts. The diaphragm itself was found to be in reasonable condition, flexible with no signs of being perished/damaged.
14. With the boiler system's water reaching elevated temperatures, the high-temperature limit stat had operated (set at 85 °C) but failed to have an effect on the inoperative gas control valve.
15. Honeywell, the gas valve manufacturer, have been contacted who reported that there have been no problems with the V4400C gas valve range.
16. All three of the boiler units have 'multifunctional' gas control valves fitted - Honeywell Type 4400C/1211 (model now obsolete but spares available, according to Honeywell's web site).

These incorporate a permanent pilot with thermocouple-proving, an integral high-temperature limit stat and manual ignition/lighting function.

17. The three brass pressure relief safety valves (steel spring type), one fitted to the water pipe work of each boiler, had not lifted/released during the elevated system temperature. The excessive pressure had been relieved through the galvanised steel expansion pipe work and into the water feed/expansion tank; the tank being of GRP material construction.