



MINISTRY OF DEFENCE

Defence Infrastructure Organisation

SAFETY ALERT

Subject: Windssock Inspections

Number: 10/13

DIO ODC Sponsor: RA Cawthorne

Date of issue:
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Contact if different from above Sponsor:

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Who Should Read this:

Who Should Read this: CEStOs, Top Level Budget Holders, Project Sponsors, MOD Project Managers and others within the IPT (for both Prime, PFI/PPP and traditionally procured contracts), Defence Infrastructure Organisation Advisors and Infrastructure Managers with responsibility for MOD projects and Property Management Works Services (including the legacy work of EWCs/WSMs) Coordinating Authorising Engineers, Authorising Engineers (WaH), Authorised Persons (WaH), purchasers and installers of climbing equipment.

When it takes effect: Immediately

When it is due to expire: No Expiry
except on update.

Health and Safety

1. Document Aim:

To alert all personnel responsible for ensuring professional appraisals and condition inspections are undertaken on the MoD estate.

2. Introduction

- a. COMPLIANCE WITH THE CONTENTS OF THIS ALERT WILL ENABLE COMPLIANCE WITH THE HEALTH & SAFETY AT WORK ETC ACT 1974 AND ITS SUBORDINATE REGULATIONS.
- b. The appropriate MOD officer shall arrange for the Regional Prime Contractor (RPC) and Maintenance Management Organisation (MMO) to carry out all actions in accordance with this Safety Alert.
- c. Any work required as a result of this Safety Alert must be carried out in accordance with JSP 375 Volume 3 – MOD's Safety Rules & Procedures.
- d. 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. Where this Alert contains procedures which differ significantly from USVF practice, DIO (USF) code of practice will be issued.

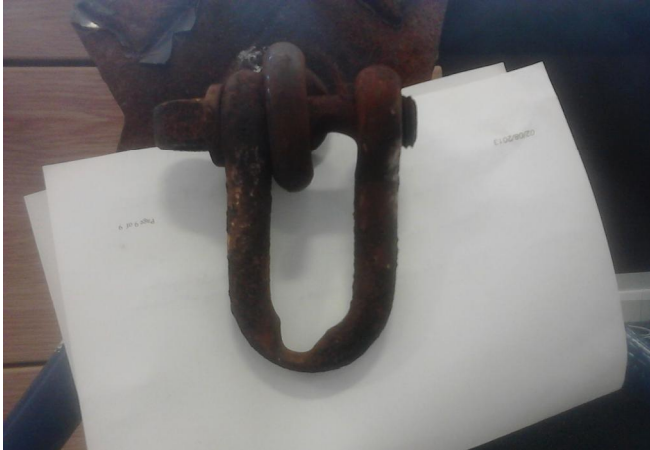
3. Requirement

- a. The inspection of windsock frames and the supporting structure requires all elements to be thoroughly examined for signs of corrosion, damage or mechanical wear and to check for the correct operation of moving parts and mechanisms, including:
 - (i) The windsock lowering mechanism and its hinge components, if it is a lowerable device.
 - (ii) Shackles, eye-bolts, swivels, fixing bolts, other connection points including welds and particularly any moving parts.
 - (iii) All components at high level, preferably having been lowered first to avoid work at height.
 - (iv) Any proprietary manufactured elements, following the manufacturer's recommendations as a minimum.
- b. Due to their exposure to the environment, susceptibility to corrosion and wear / tear of moving parts, with the risk they present of foreign object damage (FOD) on airfields and that the structures usually include lowerable mechanisms, structures such as this require Condition Inspections to be undertaken at least every 12 months.
- c. In addition, it is good practice to inspect the windsock frame and its moving components whenever the windsock itself is being replaced.
- d. This work is covered by the DIO "Hard FM Standards & Tasks" schedule.
- e. Any work incurring expenditure of MOD funding requires appropriate authority from the MOD officer responsible for the particular establishment.

4. Background

- a. A windsock frame was found to have suffered excessive mechanical wear over many years, with the shackle and fixing bolt on the point of failure, having lost upto 90% of their cross-section. The concern is that inspections had been undertaken within 26 months and certificates provided, but it was clear that the excessive wear and tear had probably been ongoing for over 10 years undetected.

b. Please see photos below:



15mm thick shackle is worn through at least 2/3rds of its diameter and $\frac{3}{4}$ of its cross sectional area.



16mm diam. bolt is worn through 80% of its diameter and over 90% of its cross sectional area. This bolt fractured immediately on attempting to undo the nuts and disassemble the components.



In lieu of a 16mm diam bolt with 201mm² cross-section area, only about 19mm² remained with a max thickness of 2-3mm.

- c. In addition, this particular windsock was also replaced 3½ years earlier, but no mention of any worn bolt or shackle was reported at that time; yet the excessive mechanical wear would almost certainly have been visibly apparent at the time.
- d. The condition of these items was not something that happens in 2-3 years.
- e. To put this into perspective as the scale can be underestimated, the windsock and its supporting ring frame was greater than 1m in diameter, weighing over 5kg, while the sock was over 4m long.
- f. The bolt was probably close to the point of failure. Given the next strong wind, a serious FOD risk could have occurred, with the sock and its mount/frame being blown into aircraft or people, causing damage and injury if not a fatality.