



Civil Aviation Authority

# PROPOSED AIRWORTHINESS DIRECTIVE



**Number: 1985**

Issue date: 07 October 2021

In accordance with the CAA Continuing Airworthiness Procedures, the issuance of an Airworthiness Directive (AD) is proposed which will be applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

**Type Approval Holder's Name:**

**Type/Model Designation(s):**

BAE SYSTEMS (OPERATIONS) LIMITED

Jetstream 3100 and 3200 aeroplanes

<b>Effective Date:</b>	(TBD upon issue of final AD)
<b>TCDS:</b>	(UK) EASA.A.191 January 2015
<b>Foreign AD (if applicable):</b>	Not Applicable
<b>Superseding AD:</b>	None

## ATA 27 – Flight Controls – Inspection of Rudder and Elevator Flight Control Cable Terminals for Corrosion

### Manufacturer(s):

Jetstream Aircraft Ltd, British Aerospace Regional Aircraft, British Aerospace (Operations) Ltd and BAE Systems (Operations) Ltd

### Applicability:

Jetstream Series 3100 and Series 3200 aircraft all model and all serial numbers

### Definitions:

For the purpose of this AD, the following definitions apply:

**The SB:** BAE Systems (Operations) Ltd Service Bulletin 27-JA-181040 original issue

**Affected parts:** Refer to Service Bulletin 27-JA-181040 original issue, Section 2, Accomplishment instructions for listing of affected elevator and rudder cable assembly part numbers.

**Reason:**

There were reports of cable terminal failures on a variety of civil aircraft types (which did not include the Jetstream 3100 & 3200 series aircraft). These reports were initially made in the USA, Australia & New Zealand. Subsequent investigations identified that the failed terminals were made from the same material specification; MS21260, which calls up materials SAE303Se or SAE304 stainless steel. It is understood that these corrosion resistant steels are susceptible to Stress Corrosion Cracking (SCC) in service when subject to contamination.

BAE Systems (Operations) Ltd recognises that SAE 303Se and 304 stainless steels are used in the primary flight control cable terminals of the Jetstream 3100 & 3200 series aircraft.

The Jetstream 3100 & 3200 series aircraft feature a single path for the elevator and rudder primary control cable circuits. For the elevator circuit, a potential unsafe condition exists if an elevator cable terminal fails at any point in the primary elevator system aft of the dual flight controls in the cockpit, because this would result in a loss of primary elevator control. This is only considered unsafe during take-off after V1, where sufficient runway may not be available to brake the aircraft, or during an approach where there is insufficient altitude to recover control of the aircraft using the aircraft's elevator trim controls.

For the rudder circuit, a potential unsafe condition exists if a rudder cable terminal fails at any point in the primary rudder system aft of the dual flight controls in the cockpit, because this would result in a loss of primary rudder control. This is only considered unsafe when landing in strong crosswinds or after an engine failure during take-off and initial climb, where vertical axis (yaw) control cannot be maintained using rudder trim or asymmetrical power.

**Required Action(s) and Compliance Time(s):**

BAE Systems (Operations) Ltd has released Service Bulletin 27-JA-181040 original issue. The Service Bulletin details inspections of all threaded turnbuckle type cable terminals (MS21260) with over 15 years' time in service and subsequent repeat inspections every 24 months. Cable terminals are to be inspected in-situ with adequate lighting and 10x magnification, looking for evidence of corrosion, pitting or cracking.

**Inspection(s):**

Required as indicated, unless accomplished previously:

- (1) From the effective date of this AD, accomplish the following:
  - (1.1) For all cables with over 15 years' time in service, the initial inspections detailed in Service Bulletin 27-JA-181040 original issue, must be carried out within 12 months from the effective date of the AD.

For those cables that have less than the 15 years' time in service, they must be inspected within a period of 12 months on reaching 15 years' time in service.

NOTE: If no evidence of cable time in service is available from aircraft records, it must be treated as having over 15 years' time in service.
  - (1.2) Subsequently the inspections detailed in Service Bulletin 27-JA-181040 original issue are to be repeated every 24 months.
  - (1.3) When pitting/corrosion or cracking is found during any inspection (very light corrosion is allowable, provided it can be removed with minimal abrasion using fine emery cloth), before next flight, replace the affected cable assembly with a new cable assembly.

- (1.4) After replacement, at a threshold not exceeding 15 years' time in service, perform the initial inspections detailed in Service Bulletin 27-JA-181040 original issue. Then repeat the inspections detailed in Service Bulletin 27-JA-181040 original issue every 24 months.

**Corrective Actions:**

- (2) Refer to AD paragraph (1.3) above.

**Credit:**

- (3) Inspection(s) and corrective action(s) accomplished in accordance with Service Bulletin 27-JA-181040 original issue, before the effective date of this AD is/are acceptable to comply with the initial requirements of paragraph (1) and (2) of this AD.

**Terminating Action**

- (4) None

**Parts Installation:**

- (5) Refer to Service Bulletin 27-JA-181040 original issue paragraph 3 Material Information for part number details.

**Reference Publications:**

BAE Systems (Operations) Ltd Service Bulletin 27-JA-181040 original issue.

The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.

**Remarks:**

- (1) This PAD will be closed for consultation on 06 November 2021.
- (2) Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the CAA aviation safety reporting system. This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
- (3) Enquiries regarding this PAD should be referred to: [Continued.Airworthiness@caa.co.uk](mailto:Continued.Airworthiness@caa.co.uk)
- (4) For any questions concerning the technical content of the requirements in this PAD, please contact: BAE Systems (Operations) Ltd, Customer Technical Support Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, The United Kingdom. E-mail: [raenglaison@baesystems.com](mailto:raenglaison@baesystems.com)