EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2015-0179 **Date: 27 August 2015** Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with EU 748/2012, Part 21.A.3B. In accordance with EU 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [EU 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].

Design Approval Holder's Name:	**Type/Model designation(s):**
BOEING COMPANY, THE BFGOODRICH AEROSPACE, Aerostructures Group (formerly Rohr Inc.)	DC-9-80 series and MD-88 aeroplanes Boeing 727-200 (STC-modified) aeroplanes

Approval Numbers:	USA TCDS A6WE, A3WE and STC SA4363NM, UK AAN No. 26883.
Foreign AD:	None
Supersedure:	None

ATA	**Airplane Flight Manual – Unreliable EPR Indications – Implementation of Procedure**
Manufacturer(s):	McDonnell Douglas Corporation (previously Douglas Aircraft Company) and The Boeing Company
Applicability:	Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87) and MD-88 aeroplanes; all serial numbers (MSN); and Model 727-200 and 727-200F aeroplanes, all MSN, if modified by Supplemental Type Certificate (STC) SA4363NM as validated by CAA-UK Airworthiness Approval Note (AAN) No 26833.
Reason:	A number of operational events have occurred on aeroplanes of the DC-9 type design, where the engine nose cone pressure sensor had frozen without the flight crew being aware that they were flying in icing conditions. These events typically occurred at high altitude, flight level (FL) 310 – 330, with engine anti-icing (A/I) off. The obstruction of the nose cone pressure sensor generated an erroneous indication of the engine pressure ratio (EPR). As a consequence, the auto-throttle system reduced N1 engine speed to keep the erroneous EPR within the limits, thus reducing thrust and causing a gradual loss of airspeed. In some cases, the flight crew, noticing the reducing speed and the near stall condition at high altitude, took control by switching engine A/I on, and/or starting a descent to maintain the airspeed. In other cases, a stall condition developed before the flight crew had the time to recover the speed loss. In all but one such case, the flight crew successfully recognized the stall and recovered the aeroplane.

	In a recent accident, still under investigation, involving an European-registered MD-83 and occurred in Mali, the stall was not recovered and the aeroplane was destroyed upon impact with the ground. At present, the approved Boeing Airplane Flight Manual (AFM) and BFGoodrich Aerospace, Aerostructures Group AFM Supplement (AFMS), as applicable, do not contain specific flight crew procedures to cover this situation although operating manuals and other documents include guidance relating to this issue. For the reasons described above, this AD requires an amendment of the applicable AFM(S), to insert a procedure to be applied by the flight crew in case of unreliable EPR indications. EASA have also issued Safety Information Bulletin (SIB) 2015-07, which provides guidance on prevention of hazardous low speed at high altitude cruise.
Effective Date:	10 September 2015
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Within 30 days after the effective date of this AD, accomplish the following actions: (1.1) Amend the applicable AFM(S) by incorporating the normal procedure as specified in Appendix 1 of this AD. This may be accomplished by inserting a copy of Appendix 1 of this AD amended with applicable (S)TC Holder data for correlation of N1 vs EPR into the applicable AFM. (1.2) Amend the applicable AFM(S) by incorporating the abnormal procedure as specified in Appendix 2 of this AD. This may be accomplished by inserting a copy of Appendix 2 of this AD into the applicable AFM(S). Note: Correlation data of N1 vs EPR may be obtained by contacting Boeing, or BFGoodrich Aerospace, Aerostructures Group, as applicable. (2) Concurrently with the AFM(S) changes as required by paragraph (1) of this AD, inform all flight crews, and, thereafter, operate the aeroplane accordingly.
Ref. Publications:	None.
Remarks:	1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. This AD was posted on 24 July 2015 as PAD 15-099 for consultation until 21 August 2015. The Comment Response Document can be found at http://ad.easa.europa.eu. 3. Enquiries regarding this AD should be referred to the Safety Information Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu. 4. For any question concerning the technical content of the requirements in this AD, please contact: Boeing Commercial Airplanes, Attention: Contractual & Data Services, 2201 Seal Beach Boulevard, MC 110-SK57, Seal Beach, California 90740-1515, United States of America; Telephone: +1 562-797-1717; Internet https://www.myboeingfleet.com.

Appendix 1 - NORMAL PROCEDURES

WARNING:
Engine nose cone pressure sensor icing may occur, even with no visible moisture, particularly near convective clouds. This type of icing may not appear on radar due to its low reflectivity, and neither the airplane ice detector (when installed) nor visual indications may indicate the presence of icing conditions. This condition can generate a false EPR indication causing the auto-throttle to reduce N1 to maintain the erroneous EPR within the limit. If not promptly identified by the flight crew the aircraft can rapidly lose airspeed, increase aircraft pitch over time developing a stall or a near stall condition.

During flight, particularly when flying near convective clouds, monitor airspeed and thrust. For monitoring of thrust the flight crew shall check the correlation of N1 vs EPR by using the applicable (S)TC Holder data listed below.

If erroneous EPR data is confirmed, the abnormal procedure on “Unreliable EPR Indications” as defined in Appendix 2 of this AD shall be used.

[Applicable (S)TC Holder data for correlation of N1 vs EPR to be added]

Appendix 2 - ABNORMAL PROCEDURES

UNRELIABLE EPR INDICATIONS

1. If the auto-throttle reduces N1 unexpectedly and an unwanted airspeed decay is observed:

    a. Auto-throttle – Disconnect
    b. Max Continuous N1 – Apply
    c. ENG A/I – on

2. Airspeed - monitor:

    a. If airspeed increases to cruise Mach:

        i. Flight level - maintain
        ii. ENG parameters – monitor
        iii. Throttles – as required

    b. If airspeed continues to decrease or does not increase:

        i. Without delay, start a descent to recover and maintain speed
        ii. Coordinate with ATC or squawk 7700

    c. If indications of an impending stall (buffet or stick shaker) are present:

        Approach to stall or stall recovery procedure – Apply

Note: Following re-establishment of stabilized cruise flight, the “EPR ERRATIC OR FIXED” procedure of the MD-80 QRH (page Eng.10.5 of MD-80 QRH dated 15 October 2012) might be applied.