

EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2013-0070 Date: 18 March 2013 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 EC 2042/2003 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 [EC 2042/2003 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: Rolls-Royce Deutschland Ltd & Co KG	Type/Model designation(s): Tay 650-15 and Tay 651-54 engines
TCDS Number:	EASA.E.063
Foreign AD:	Not applicable
Supersedure:	This AD supersedes Luftfahrt-Bundesamt AD 2002-090R1 dated 15 October 2004, EASA approval 2004-9948.
ATA 72	Engine – Operating Limitation – Implementation
Manufacturer(s):	Rolls-Royce plc
Applicability:	Tay 650-15, Tay 650-15/10 and Tay 651-54 engines, all serial numbers. These engines are known to be installed on, but not limited to, Fokker F28 Mark 0100 and Boeing 727 series aeroplanes.
Reason:	There have been two low pressure compressor multiple fan blade failures on Tay 650-15 engines since 1997. These failures were caused by cracking of the fan blades initiated under conditions of fan flutter. The results of the technical investigation revealed that the fan blade flutter was initiated by stabilised engine operation within a specific range of low pressure rotor speed (N1). To prevent running in conditions, where fan flutter can occur, Rolls-Royce Deutschland Ltd & Co KG (RRD) introduced operating limitations for both the Tay 650-15 and the Tay 651-54 engines, since the same fan blade design is fitted in the Tay 651-54 engine. The limitations are for operation in reverse thrust, power-back operation, static ground running in forward thrust and during taxiing and take-off. Exceedance of these operating limitations could lead to fan blade flutter and consequent fan blade crack initiation. This condition, if not detected and corrected, could lead to fan blade failures causing release of high energy debris, possibly resulting in damage to the aeroplane and/or injury to the occupants. To address this potential unsafe condition, RRD issued Alert Non Modification Service Bulletin (NMSB) TAY-72-A1447, providing instructions for fan blade root ultrasonic inspection and fan blade and/or fan disc replacement after confirmation of inadvertent stabilised engine operation within the defined range.

	For the reasons described above, in the case of exceedance of the operating limitations, this AD requires accomplishment of an ultrasonic inspection of the affected engine fan blades and/or fan disc and, depending on findings, replacement with serviceable blades and/or fan disc.
Effective Date:	01 April 2013
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: Note: For the purpose of this AD, "stabilised operation" means operation of an engine in a stabilised manner at a certain N1. (1) From the effective date of this AD, any stabilised operation of an engine within the speed range of 57 to 75 per cent of N1 is prohibited (either in reverse thrust, or forward thrust during static ground operation, or powerback, and additionally for Tay 651-54 engine only, during taxiing or take-off, as applicable) as identified in RRD Alert NMSB TAY-72-A1447 Revision 8. (2) After each unintended stabilised operation in the speed range identified by paragraph (1) of this AD, within the thresholds and intervals as defined in RRD Alert NMSB TAY-72-A1447 Revision 8, either accomplish ultrasonic inspections of the affected engine fan blades or replace the fan blade set and fan disc with a serviceable fan blade set and fan disc in accordance with paragraph 3 - Accomplishment Instructions of RRD Alert NMSB TAY-72-A1447 Revision 8. (3) If, during any inspection as required by paragraph (2) of this AD, any fan blade crack is detected, within the thresholds as defined in RRD Alert NMSB TAY-72-A1447 Revision 8, replace the complete set of affected fan blades and fan disc with a serviceable fan blade set and fan disc in accordance with paragraph 3 - Accomplishment Instructions of RRD Alert NMSB TAY-72-A1447 Revision 8. (4) After removal from an engine, as required by paragraph (3) of this AD, return to RRD fan blades which show crack indications and each fan disc on which any cracked fan blade was detected. (5) Inspections and replacements, accomplished before the effective date of this AD in accordance with the instructions of RRD Alert NMSB TAY-72-A1447 at earlier Revisions, are acceptable for compliance with initial requirements of this AD. After the effective date of this AD, the instructions of RRD Alert NMSB TAY-72-A1447 at Revision 8 (or later Revisions) must be used.
Ref. Publications:	RRD Alert NMSB TAY-72-A1447 Revision 8 dated 08 March 2013. The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.
Remarks:	1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. This AD was posted on 19 December 2012 as PAD 12-125R2 for consultation until 01 February 2013. 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, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu. 4. For any question concerning the technical content of the requirements in this AD, please contact: Rolls-Royce Deutschland Ltd & Co KG Eschenweg 11 – 15827 Dahlewitz – Germany Tel: + 49 (0) 33 708 6 1200 (direct 1016) Fax: + 49 33 708 6 1212.