EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2013-0194 **Date: 26 August 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:	**Type/Model designation(s):**
Rolls-Royce Deutschland Ltd & Co KG	Tay 620 engines

TCDS Number:	EASA.E.063
Foreign AD:	Not applicable
Supersedure:	None

ATA 72	**Engine – Operating Limitation – Implementation**
Manufacturer(s):	Rolls-Royce plc.
Applicability:	Tay 620-15 and Tay 620-15/20 engines, all serial numbers. These engines are known to be installed on, but not limited to, Fokker F28 Mark 0070 and Mark 0100 series aeroplanes.
Reason:	A multiple Low Pressure Compressor (LPC) fan blade failure occurred on a Tay 620-15 engine. The failure was caused by fan blade cracking 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 LPC rotor speed (N1). To prevent engine operation in conditions where fan flutter can occur, Rolls-Royce Deutschland Ltd & Co KG (RRD) introduced operating limitations for reverse thrust operation for both Tay 620-15 and Tay 620-15/20 engines. This limitation and the prohibition of power-back operation are defined in the Type Certificate Data Sheet and Engine Operating Instructions. 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-A1771, providing instructions for fan blade root ultrasonic inspection and subsequent maintenance action after use of power-back or inadvertent stabilised engine operation within the

	defined range. For the reasons described above, this AD requires accomplishment of ultrasonic inspections of the fan blades and/or fan disc, each time an engine has exceeded the operating limitations, and, depending on findings, replacement of damaged parts.
Effective Date:	09 September 2013
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) From the effective date of this AD, any stabilised operation of an engine within the speed range of 54 to 72 per cent of N1 in reverse thrust and the use of power-back operation is prohibited. Note 1: For the purpose of this AD, “stabilised operation” means operation of an engine in a stabilised manner at a certain N1. (2) After each use of power-back operation or stabilised reverse thrust operation in the speed range as specified in paragraph (1) of this AD, within the thresholds as defined in RRD Alert NMSB TAY-72-A1771, and, thereafter, within 1 500 flight cycles (FC), but not earlier than 1 000 FC, either accomplish ultrasonic inspections of the affected engine fan blades or replace the fan blade set and fan disc with serviceable parts in accordance with the instructions of section 3 of RRD Alert NMSB TAY-72-A1771. (3) If, during any inspection as required by paragraph (2) of this AD, any fan blade crack is detected, within the threshold defined in RRD Alert NMSB TAY-72-A1771, replace the complete set of affected fan blades and fan disc with serviceable parts in accordance with the instructions of section 3 of RRD Alert NMSB TAY-72-A1771. (4) Within 2 months after replacement of affected fan blades and fan disc from an engine, as required by paragraph (3) of this AD, or as specified in paragraph (2) of this AD, as applicable, return each removed fan blade which shows crack indications and each fan disc on which any cracked fan blade was detected to RRD, or to an approved overhaul shop agreed with RRD. (5) Replacement of fan blades and fan disc on an engine, as required by paragraph (3) of this AD, or as specified in paragraph (2) of this AD, as applicable, constitutes terminating action for the repetitive ultrasonic inspections required by paragraph (2) of this AD for that engine. (6) From the effective date of this AD, installation of a fan blade or a fan disc, previously subject to a power-back operation or stabilised reverse thrust operation in the speed range as specified in paragraph (1) of this AD on an engine, or installation of an engine with such a fan blade or fan disc installed on an aeroplane, is allowed, provided this is done within the conditions detailed in RRD Alert NMSB TAY-72-A1771. (7) Within 1 500 FC after any power-back operation or stabilised reverse thrust operation in the speed range as specified in paragraph (1) of this AD, replace the fan disc with a serviceable part in accordance with the instructions of RRD Alert NMSB TAY-72-A1771, unless all fan blades subject to power-back operation or stabilised reverse thrust operation in the speed range as specified in paragraph (1) of this AD and later removed from that fan disc passed the inspection as required by paragraph (2) of this AD, and found serviceable.
Ref. Publications:	RRD Alert NMSB TAY-72-A1771 Initial issue dated 25 June 2013. The use of later approved revisions of these documents 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 17 July 2013 as PAD 13-100 for consultation until 14 August 2013. No comments were received during the consultation period. 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, fax: + 49 33 708 6 1212. E-mail: RRDTechnicalHelpdesk@Rolls-Royce.com.