


EASA	AIRWORTHINESS DIRECTIVE
	<p>AD No.: 2013-0308</p> <p>Date: 20 December 2013</p> <p>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.</p>
<p>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].</p>	
<p>Design Approval Holder's Name:</p> <p>ROLLS-ROYCE PLC</p>	<p>Type/Model designation(s):</p> <p>Trent 1000 engines</p>
TCDS Number:	EASA.E.036
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA AD 2013-0096R1 dated 18 September 2013.
ATA 72	Engine – Intermediate Pressure Turbine Blades – Inspection
Manufacturer(s):	Rolls-Royce plc (RR)
Applicability:	<p>Trent 1000-A, Trent 1000-C, Trent 1000-D, Trent 1000-E, Trent 1000-G and Trent 1000-H engines, all serial numbers, except those that have incorporated modification (MOD) 72-H409 in production, or modified in-service in accordance with RR TRENT 1000 Service Bulletin (SB) 72-H409.</p> <p>These engines are known to be installed on, but not limited to, Boeing 787 series aeroplanes.</p>
Reason:	<p>During overhaul and on-wing inspections, Intermediate Pressure Turbine (IPT) blades Part Number (P/N) FW63838 have been found with missing rear seal fins. Release of an IPT blade rear seal fin may result in downstream, secondary damage, potentially accompanied with engine power loss.</p> <p>This condition, if not detected and corrected, could lead to an in-flight shut-down resulting in reduced control to the aeroplane.</p> <p>To address this potential unsafe condition, EASA issued AD 2013-0096 to require repetitive borescope inspections and, depending on findings, removal from service of the engine, in accordance with RR Non-Modification Service Bulletin (NMSB) TRENT 1000 72-AH260 (hereafter referred to as the NMSB).</p> <p>Since that AD was issued, a modification was developed which introduces a revised seal fin geometry, which was published as RR Trent 1000 SB 72-H409.</p> <p>Revision 2 of the NMSB has also been issued, which provides details for a fly-on allowance, following an engineering review of the damage levels.</p> <p>For the reasons described above, this AD supersedes EASA AD 2013-0096R1</p>

	and confirms the fly-on allowance as specified in the NMSB at Revision 2. This AD also excludes from the Applicability engines that have had MOD 72-H409 embodied in production, or SB 72-H409 embodied in-service, and confirms that in-service modification (RR SB 72-H409) of an engine constitutes an (optional) terminating action for the repetitive inspections required by this AD.
Effective Date:	27 December 2013
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> (1) For all engines fitted with P/N FW63838 IPT blades, before exceeding 450 flight cycles (FC) since new, and, thereafter, at intervals not to exceed 200 FC, accomplish an on-wing borescope inspection in accordance with the instructions of Section 3A of the NMSB. (2) From the effective date of this AD, each time the engine is inducted into an engine shop, where it is not planned for the IP Turbine blades to be removed, accomplish a borescope inspection in accordance with the instructions of Section 3B of the NMSB. (3) From the effective date of this AD, each time the engine is inducted into an engine shop, accomplish an inspection in accordance with the instructions of Section 3C of the NMSB. <p>Note: Accomplishment of an in shop inspection as required by paragraph (2) or paragraph (3) of this AD, as applicable, is acceptable in lieu of an on-wing borescope inspection as required by paragraph (1) of this AD.</p> <ol style="list-style-type: none"> (4) If, during any inspection as required by paragraph (1) of this AD, one to four IPT blade rear seal fins are found broken, within the criteria as specified in Section chap 3 A.(2)(a) of the NMSB, within 80 FC or 200 flight hours, whichever occurs first after the inspection, remove the engine from service. (5) If, during any inspection as required by paragraph (1) of this AD, one to four IPT blade rear seal fins are found broken, exceeding the criteria as specified in Section 3 A.(2)(a) of the NMSB, before next flight, remove the engine from service. (6) If, during any inspection as required by paragraph (1) of this AD, five or more IPT blade rear seal fins are found broken, before next flight, remove the engine from service. (7) If, during any inspection as required by paragraph (2) of this AD, one or more IPT blade rear seal fins are found broken, before release to service of the engine, inspect the engine and, depending on findings, accomplish all applicable corrective actions in accordance with the instructions of Section 3C of the NMSB. (8) If, during any inspection as required by paragraph (3) of this AD, one to four IPT blade rear seal fins are found broken, before release to service of the engine, modify the engine in accordance with the instructions of RR Trent 1000 SB 72-H409. (9) If, during any inspection as required by paragraph (3) of this AD, five or more IPT blade rear seal fins are found broken, before release to service of the engine, replace the affected IPT disc with a serviceable one. (10) From 02 May 2013 [the effective date of the original issue of EASA AD 2013-0096], installation of P/N FW63838 IPT blades on an engine is allowed, provided that, following installation, the engine is inspected as required by this AD. (11) Modification of an engine in accordance with the instructions of RR Trent 1000 SB 72-H409 constitutes terminating action for the repetitive inspections required by this AD for that engine.

Ref. Publications:	<p>Rolls-Royce Trent 1000 NMSB 72-AH260, original issue dated 26 March 2013, or Revision 1 dated 14 June 2013, or Revision 2 dated 19 December 2013.</p> <p>Rolls Royce Trent 1000 SB 72-H409, Initial Issue dated 30 April 2013.</p> <p>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.</p>
Remarks:	<ol style="list-style-type: none"> 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication. 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 your designated Rolls-Royce representative, or download the publication from your Aeromanager account at www.aeromanager.com, or contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, DE24 8BJ, United Kingdom, telephone: +44 (0) 1332 242424, or send an e-mail through http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to Airworthiness Directives.