

EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2015-0105 Date: 10 June 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: ROLLS-ROYCE plc	Type/Model designation(s): RB211 Trent 700 engines
TCDS Number:	EASA.E.042
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA AD 2014-0168 dated 16 July 2014.
ATA 72	Engine – High / Intermediate Pressure Turbine Bearing Support Oil Feed Tube Sealing Sleeve – Inspection / Replacement
Manufacturer(s):	Rolls-Royce plc (RR)
Applicability:	RB211 Trent 768-60, 772-60, 772B-60 and 772C-60 engines, all serial numbers (s/n). These engines are known to be installed on, but not limited to, Airbus A330 aeroplanes.
Reason:	Several occurrences were reported of high oil consumption on Trent 700 engines, caused by fracture of the High/Intermediate Pressure (HP/IP) turbine support internal oil feed tube Part Number (P/N) FW46689. The oil feed tube threaded end adaptor and sealing sleeve P/N FW15003 are designed to form a sliding joint which, if restrained, can compress the oil feed tube during thermal contraction of the turbine casing at the end of the flight cycle. On each subsequent flight, the thermal growth and contraction of the turbine casing relative to the oil tube, during the heating and cooling phases of the flight cycle, apply a load cycle to the tube, which may lead to low cycle fatigue fracture. This condition, if not detected and corrected, could lead to fire and overheating of the turbine discs and, consequently, an uncontained engine failure, possibly resulting in damage to the aeroplane and injury to occupants and/or persons on the ground. Investigation of the affected oil feed tube sealing sleeve P/N FW15003 found that one supplier of this part had manufactured some sealing sleeves with the internal diameter below the drawing minimum, which can cause binding at the sliding joint. Investigation of the supply history identified a population of engines which have potentially been fitted with an affected sleeve during manufacture, or during Module 51 rework (check, repair or higher level work scope) between 1 July 2009 and 31 October 2013, as identified in RR Non-Modification Service Bulletin (NMSB) RB.211-72-AH673.

	Prompted by these findings, EASA issued AD 2014-0168 to require a one-time inspection of the affected engines and removal from service of all affected P/N FW15003 oil feed tube sealing sleeves. Since that AD was issued, investigation results confirmed that most occurrences were attributable to the non-conforming sealing sleeve. However, a more recent event of high oil consumption was reported, on an engine which did not have an affected sealing sleeve fitted. Investigation established that some external oil feed adaptors P/N FW49471 have been manufactured with an outer diameter larger than the drawing maximum. This condition can restrain the sliding joint in a similar way as an undersized sealing sleeve, possibly resulting in the same unsafe condition addressed by EASA AD 2014-0168. For the reasons described above, this AD retains the requirements of EASA AD 2014-0168, which is superseded, and requires a one-time inspection of more oil feed sealing sleeves, and, depending on findings, replacement of the sealing sleeves and external tubes.
Effective Date:	24 June 2015
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: Note: Where, in this AD, reference is made to an RR Mod, SB or NMSB with an 'A' (Alert) in the number, it should be recognised that an earlier or later revision may not have that 'A'. This kind of change does not effectively alter the publication references for the purpose of this AD. Re-statement of the requirements of EASA AD 2014-0168: (1) For engines s/n up to 42330 inclusive, except s/n 42310, 42311, 42312, 42314 to 42317 inclusive, 42321 to 42327 inclusive, and 42329: Within 6 months after 01 August 2014 [the effective date of EASA AD 2014-0168], inspect the P/N FW15003 oil feed tube sealing sleeve and, if it is determined that the oil feed tube sealing sleeve was manufactured by supplier A, as defined in RR NMSB RB211-72-AH673, and does not have the marking 102013, 112013 or 102013L, take a replicast and replace the affected oil feed tube sealing sleeve with a serviceable oil feed tube sealing sleeve in accordance with the instructions of RR NMSB RB211-72-AH673. (2) Within 30 days after taking the replicast, as required by paragraph (1) of this AD, send the replicast to RR in accordance with the instructions of RR NMSB RB211-72-AH673. (3) For all engines: From 01 August 2014 [the effective date of EASA AD 2014-0168], it is allowed to install on any engine an oil feed tube sealing sleeve P/N FW15003 manufactured by supplier A (as defined in RR NMSB RB211-72-AH673), provided the part has the marking 102013, 112013 or 102013L. New requirements of this AD: (4) For engines s/n up to 42330 inclusive: Within 1 600 flight cycles or 24 months, whichever occurs first after the effective date of this AD, inspect each P/N FW15003 oil feed sealing sleeve to identify the marking 102013, 112013 or 102013L in accordance with the instructions of RR NMSB RB.211-72-AJ035. A review of engine maintenance records is acceptable to make the determination as specified in this paragraph, provided those records can be relied upon for that purpose, and the markings on the P/N FW15003 oil feed sealing sleeve can be conclusively identified from that review.

	(5) If, during the inspection as required by paragraph (4) of this AD, a sealing sleeve P/N FW15003 is found without marking 102013, 112013 or 102013L, before next flight or (if inspected in shop) before release to service of the engine, as applicable, replace the affected external oil feed tube P/N FW14193 and the sealing sleeve with serviceable parts in accordance with the instructions of RR NMSB RB.211-72-AJ035. (6) For all engines: From the effective date of this AD, it is allowed to install on any engine an oil feed tube sealing sleeve P/N FW15003, provided the part has the marking 102013, 112013 or 102013L.
Ref. Publications:	Rolls-Royce NMSB RB.211-72-H673 dated 30 January 2014, or Revision 1 dated 21 February 2014, or NMSB RB.211-72-AH673 Revision 2 dated 27 June 2014. Rolls-Royce NMSB RB.211-72-AJ035 dated 11 May 2015, or Revision 1 dated 20 May 2015. 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 05 May 2015 as PAD 15-056 for consultation until 02 June 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 your designated Rolls-Royce representative or download the publication from your Aeromanager account at www.aeromanager.com. If you do not have a designated representative or Aeromanager account, please contact Corporate Communications at Rolls-Royce plc., 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.