



**Airworthiness
Directive
D-2005-197**

Luffahrt-Bundesamt
Airworthiness Directive Section
Hermann-Blenk-Str. 26
38108 Braunschweig
G E R M A N Y

Rolls-Royce Deutschland

Effective Date: 30 June 2005

Affected:

Kind of aeronautical product: Aircraft Engine
Manufacturer: Rolls-Royce plc, Derby, United Kingdom
Type: DART 528, 529, 530, 540, 550 and 552
Models affected: DART 528-7E, 528D-7E,
529-7E, 529-7H, 529-8E, 529-8H, 529-8X, 529-8Y, 529-8Z,
529D-7E, 529D-7H, 529D-8E, 529D-8H, 529D-8X, 529D-8Y, 529D-8Z,
532-7, 532-7L, 532-7N, 532-7P, 532-7R,
533-2,
534-2,
535-2, 535-7, 535-7R,
536-2, 536-2T, 536-7, 536-7P, 536-7R,
542-10, 542-10J, 542-10K, 542-4, 542-4K,
543-10, 543-10K,
550-2,
552-2, 552-7, and 552-7R
Serial numbers affected: All Dart Engines of the a.m. models, which have the Initial Issue or Revision 1, but not Revision 2 or later Revisions of Service Bulletin Da72-533 incorporated and which have not been subject to a dimensional inspection of the Intermediate Pressure (IP) turbine disc in accordance with the Engine Overhaul Manual, Chapter 72-61-1
German Type Certificate No.: 7002, 7023, 7038, 7039, 7040 and 7041

Subject:

Inspection and rework of the intermediate pressure (IP) turbine disc.

Reason:

Since 1972 there have been a number of high pressure turbine disk diaphragm failures on in service engine, three resulted in the high pressure turbine disc being released. The failure have been attributed to excitations of the high pressure (HP) turbine assembly as a result of fretting between the high pressure turbine disc and intermediate pressure (IP) turbine disk seal arms. In extreme cases this can result in high cycle fatigue failure initiating in the seal arm radius. The actions specified by this Airworthiness Directive are intended to prevent high pressure (HP) turbine disc failure, which can result in an uncontained engine failure and damage to the airplane.

Action:

This Airworthiness Directive requires the following actions:

1. Dimensional inspection of the intermediate pressure (IP) turbine disc in accordance with Service Bulletin Da72-538 or
2. Ultrasonic inspection of HP/IP turbine disc seal arm in accordance with Service Bulletin Da72-536. If the ultrasonic inspections shows wear outside allowable limits the dimensional inspection of the intermediate pressure (IP) turbine disc in accordance with Service Bulletin Da72-538 must be carried out.
3. Rework or exchange of the intermediate pressure (IP) turbine disc if wear outside allowable limits has been established.

All necessary actions must be performed on the basis of the referenced manufacturer Service Bulletin.

Compliance:

All compliance times of the mentioned actions have to be in compliance with the Rolls-Royce DART Service Bulletin Da72-538 dated June 10, 2005.

Enquiries regarding this Airworthiness Directive should be referred to Mr. Martin Borsum, Airworthiness Directive Section at the above address, fax-no. 0049 531/2355-725. Please note, that in case of any difficulty, reference should be made to the German issue!

Technical publication of the manufacturer:

Rolls-Royce DART Service Bulletin Da72-538 dated June 10, 2005 becomes herewith part of this AD and may be obtained from:

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Eschenweg 11
15827 Dahlewitz
G E R M A N Y
Phone ++49-33-708-3-2026 or ++49-171-613-4213
Fax ++49-33-708-6-3614

EASA Approval:

Approved by EASA under approval number 2005-5848 on 10 June 2005.