



CIVIL AVIATION AUTHORITY
CZECH REPUBLIC
Airworthiness Division

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AIRWORTHINESS DIRECTIVE

Number: CAA-AD-028/2001R1

Replaces CAa-AD-028/2001

Date of issue: July 11, 2003

ROLLS-ROYCE

Dart 520, 530, 540, 550

ENGINE - HIGH PRESSURE TURBINE DISK - INSPECTION

Applicability: engine Rolls-Royce DART 528, 529, 530, 540, 550 and 552 Series, all serial numbers.

Effective date: September 04, 2003

Compliance: Required as indicated LBA AD 2001-116/6.

Remarks: The compliance of this AD must be recorded in Aircraft Logbook, where applicable the requirements of this AD must be integrated into Aircraft Technical Documentation. Address inquiries concerning this AD to: Civil Aviation Authority, Airworthiness Division, Ruzyně Airport, 160 08 Prague 6, Czech Republic, tel.: 420 2 33320922, fax: 420 2 20562270.

Ing. Pavel MATOUŠEK
Director

LBA AD No.: 2001-116/6
Effective Date: 26 June 2003

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

This Airworthiness Directive supersedes the Airworthiness Directives 2001-116/5 of 26 June 2003

Rolls-Royce

Affected:

Kind of aeronautical product: Aircraft Engine
Manufacturer: Rolls-Royce plc., Derby, United Kingdom
Type: DART
Models affected: DART 528, 529, 530, 540, 550 and 552 Series
Serial numbers affected: All
German Type Certificate No.: 7002, 7023, 7038, 7039, 7040 and 7041

Subject:

Turbine - Turbine wheels and shafts - High pressure turbine/intermediate pressure turbine seal arm contact - ATA-Code 72-50-00 – Introduction of seal arm nip and improved corrosion protection.

Note:

The LBA Airworthiness Directives 2001-116 and 2001-116/2 were based on the CAA Airworthiness Directive 007-02-2001. At that time the British aviation authority CAA was the responsible authority for the publication of Airworthiness Directives for these engines. After transfer of the TC for the DART engines from Rolls-Royce plc. to Rolls-Royce Deutschland Ltd. & Co. KG on 7 January 2002, the LBA has taken over the responsibility for the post certification activities in accordance with ICAO Annex 8 for these engine models.

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 disk being released. The failure have been attributed to excitations of the high pressure turbine assembly as a result of fretting between the high pressure turbine disk and intermediate pressure turbine disk seal arms. In extreme cases this can result in high cycling fatigue failure initiating in the seal arm radius. The actions specified by this Airworthiness Directive are intended to prevent high pressure turbine disk failure, which can result in an uncontained engine failure and damage to the airplane.

Action:

The following actions are required by this Airworthiness Directive:

1. Changes to the high pressure turbine seal geometry to allow a specified interference fit between the high pressure turbine disk and intermediate pressure turbine disk seal arms.
2. Application of an improved sacrificial corrosion protective coating. All necessary actions must be performed on the basis of mentioned manufacturer Service Bulletins.

Compliance:

Compliance with this Airworthiness Directive is required when the engine is next disassembled sufficiently to afford access to the affected section but not later than 30 June 2004.

After execution of the measures of the Rolls-Royce Service Bulletin Da72-536 the periods specified in the Service Bulletin Da72-533 can be extended for 750 cycles.

Technical publication of the manufacturer:

Rolls-Royce Service Bulletins Da72-533R3 dated 01 October 2001 and Da72-536 dated 25 March 2002. These Service Bulletins become herewith part of this AD can be obtained from:
Rolls-Royce Deutschland Ltd & Co KG
EV-7 Service Engineering
Eschenweg 11

15827 Dahlewitz
G E R M A N Y
Fax +49 (0) 33-708-63615

Enquiries regarding this Airworthiness Directive should be referred to Mr. Martin Borsum, Airworthiness Directive Section at the above address, fax-no. 0049 531/2355-720. Please note, that in case of any difficulty, reference should be made to the German issue!