



Nr. **NL-2005-014 R1** Distribution : **L**

Date : January 20, 2006

Type Certificate Holder :

FOKKER SERVICES B.V.

(formerly Fokker Aircraft B.V.)

F28 Mark 0070 and Mark 0100

EASA Type Certificate Nr.

A.037

Caution

This Airworthiness Directive is issued by the Minister of Transport, Public Works and Water Management in accordance with the Aviation Act 2001 (Wet Luchtvaart), Article 3.22. Airworthiness Directives affect aviation safety. These are regulations which require immediate attention. No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements thereof, unless otherwise agreed with the Authority of the State of Registry (EC2042/2003, M.A.201 & M.A.303).

THIS AIRWORTHINESS DIRECTIVE IS PUBLISHED BY THE CAA-NL :

- acting for and on behalf of the European Aviation Safety Agency (EASA), as Airworthiness Authority (ICAO Annex 8) of the State of Design for the affected product(s) with reference to 21A.3B (a) and (b); and
- has been approved under EASA reference Number 2006-017 dated January 20, 2006.

Supersedure : This directive supersedes and cancels AD NL-2005-014 dated November 11, 2005.

Subject : ENGINE - HIGH PRESSURE COMPRESSOR VANE STAGES 4 THRU 11 - MODIFICATION

Applicability : Fokker Aircraft B.V. Model F28 Mark 0070 and Mark 0100 aircraft, all serial numbers, if equipped with Rolls-Royce (Deutschland) Tay620 or Tay650 series engines in pre-SB TAY-72-1653 configuration.

Reason : Between 1991 and the end of 2004, 39 Rolls-Royce Tay (all marks) engines have experienced heavy rubbing between the High Pressure Compressor (HPC) stator vane tips and the corresponding HPC rotor spacer, causing partial loss of HPC rotor spacer material. Investigation revealed that HPC spacer rubbing occurs due to thermal and aircraft manoeuvre induced closure of the vane tip-to-spacer gap on engines where the gap was close to the minimum vane tip clearance that is applicable during engine build-up. Nine of the referenced events resulted in a commanded In-Flight Shut-Down (IFSD). There are also indications that some of these events resulted in partial or total loss of thrust control (LOTC), due to engine stall/stagnation and/or high Turbine Gas Temperature (TGT). This condition, if not corrected, may cause further events of spacer material loss, potentially reducing the surge margin and resulting in HPC surge events and subsequently to LOTC or IFSD. Since an unsafe condition has been identified that is likely to exist or develop on engines installed in Fokker-manufactured aircraft of the F28 type design, this Airworthiness Directive requires a modification (increase) of the minimum vane tip clearances between the HPC stage 4 through 11 stator vane tips and the corresponding HPC rotor spacers on all Tay620 and Tay650 series engines.

Reason for revision : To allow a period of operation with only a single engine per aircraft modified as required and to delay the final compliance date for both engines to be modified.

Effective date : January 20, 2006

Mandatory Actions and Compliance Times : Required as indicated, unless accomplished previously.

(a) At the next scheduled or unscheduled shop visit of each affected engine during which the High-Pressure Compressor Section (Module 3) is disassembled, incorporate the minimum vane tip clearance modification in accordance with Rolls-Royce Deutschland (RRD) Service Bulletin (SB) TAY-72-1653 dated August 29, 2005 or a later EASA approved revision;

(b) After January 1, 2011, each F28 Mark 0070 and Mark 0100 aircraft may only be operated when at least one engine has been modified in accordance with RRD SB TAY-72-1653.

(c) After January 1, 2015, each F28 Mark 0070 and Mark 0100 aircraft may only be operated when both engines have been modified in accordance with RRD SB TAY-72-1653.

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Reference Publication(s) :

RRD SB TAY-72-1653

RRD Engine Manual E-TAY-2RR (Tay620-15, Tay620-15/20)

RRD Engine Manual E-TAY-3RR (Tay650-15, Tay650-15/10)

Remarks :

- Operators of the affected aircraft may obtain copies of the referenced service information upon request directly from **Rolls-Royce Deutschland Ltd. & Co. KG, Eschenweg 11, 15827 Blankenfelde-Mahlow, Bundesrepublik Deutschland (Germany); telephone (49) 33-7086-1768; facsimile (49) 33-7086-3356; e-mail airlines.publication.services@rolls-royce.com or can be downloaded from www.aeromanager.com; or contact Fokker Services B.V., Technical Services Dept., P.O.Box 231, 2150 AE Nieuw-Vennep, The Netherlands; telephone (31) 252-627-350; facsimile (31) 252-627-211; e-mail technicalservices.fokkerservices@stork.com or can be downloaded from www.myfokkerfleet.com.**
- Compliance with this directive must be recorded in the proper Aircraft Log Book(s).

Address inquiries concerning this AD to : Civil Aviation Authority, Aircraft Division, Section C&D, P.O. Box 575, 2130 AN Hoofddorp, The Netherlands; telephone +31-23-566-3155; facsimile +31-23-566-3006; e-mail Info.Register@ivw.nl.