AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

General Electric Turbine Engines - CF6 Series

AD/CF6/71 Life Limited Parts 4/2009

Applicability: General Electric Company CF6-80A, CF6-80C2, and CF6-80E1 series turbofan engines.

Note 1: These engines are installed on, but not limited to, Airbus A300, A310, and A330 series, Boeing 747 and 767 series, and McDonnell Douglas MD-11 series aeroplanes.

Requirement: 1. Revise the Airworthiness Limitations Section (ALS) of the manufacturer's Instructions for Continued Airworthiness (ICA), and for air carrier operations revise the approved continuous airworthiness maintenance program, by adding the following: "MANDATORY INSPECTIONS" as detailed in Table 1 of this AD.

Table 1

Part Nomenclature	Part Number (P/N)	Inspect per Engine Manual Inspection Chapter
For CF6-80A Engines:		
Disk, Fan Rotor, Stage 1	All	72-21-03 Paragraph 3. Fluorescent-Penetrant Inspect, and 72-21-03 Paragraph 4. Eddy Current Inspect
Fan Forward Shaft	All	72-21-05 Paragraph 2. Magnetic Particle Inspect
Fan Mid Shaft	All	72-24-01 Paragraph 2. Magnetic Particle Inspect
Disk, HPC Rotor, Stage One	All	72-31-04 Paragraph 3. Fluorescent-Penetrant Inspect
** Disk, HPC Rotor, Stage Two	All	72-31-05 Paragraph 4. Fluorescent-Penetrant Inspect

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

Spool, HPC Rotor, Stage3-9	All	72-31-06 Paragraph 3. Fluorescent-Penetrant Inspect
Disk, HPC Rotor, Stage 10	All	72-31-07 Paragraph 3. Fluorescent-Penetrant Inspect
Spool, HPC Rotor, Stage 11-14	All	72-31-08 Paragraph 3.A. Fluorescent-Penetrant Inspect
Rotating CDP Seal	All	72-31-10 Paragraph 3. Fluorescent-Penetrant Inspect
Disk Shaft, HPT Rotor Stage One	All	72-53-02 Paragraph 3. Fluorescent-Penetrant-Inspect per 70-32-02, and 72-53-02 Paragraph 6.C. Disk Rim Bolt Hole Eddy Current Inspection, and 72-53-02 Paragraph 6.D. Disk Bore Eddy Current Inspection
* Disk Shaft, HPT Rotor Stage One	All	72-53-02 Paragraph 6.E. Disk Dovetail Slot Bottom Eddy Current Inspection
* Disk Shaft, HPT Rotor, Stage One	P/Ns 2047M33G01 thru G10, and P/N 9362M58G11	72-53-02 Paragraph 7. Disk Dovetail Slot Bottom Aft Corner Chamfers Eddy Current Inspection
Disk, HPT Rotor, Stage Two	All	72-53-06 Paragraph 3. Fluorescent-Penetrant Inspection, and 72-53-06 Paragraph 6. Eddy Current Inspection of Rim Bolt Holes for Cracks, and 72-53-06 Paragraph 7. Disk Bore Eddy Current Inspection

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

Disk, LPT Rotor Stage 1-4	All	72-57-02 Paragraph 3. Fluorescent-Penetrant Inspection
Shaft, LPT Rotor	All	72-57-03 Paragraph 3. Fluorescent-Penetrant Inspection, and 72-57-03 Paragraph 6. Eddy Current Inspection
For All CF6-80C2 Engines:		
Disk, Fan Rotor, Stage 1	All	Task 72-21-03-200-000-004 Fluorescent-Penetrant Inspection, and Task 72-21-03-200-000-008 Eddy Current Inspect Fan Rotor Disk Stage 1 Bore, Forward and Aft Hub Faces, and Bore Radii
Shaft, Fan Forward	All	Task 72-21-05-200-000-001 Fluorescent Penetrant Inspection, and Task 72-21-05-200-000-005 Vent Hole Eddy Current Inspection
Fan Mid Shaft	All	Task 72-24-01-200-000-003 Magnetic Particle Inspection
HPCR Stage 1 Disk	All	Task 72-31-04-200-000-002 Fluorescent Penetrant Inspection
HPCR Stage 2 Disk	All	Task 72-31-05-200-000-002 Fluorescent Penetrant Inspection
HPCR Stage 3-9 Spool	All	Task 72-31-06-200-000-001 Fluorescent Penetrant Inspection

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

HPCR Stage 10 Disk	All	Task 72-31-07-200-000-001 Fluorescent Penetrant Inspection
HPCR Stage 11-14 Spool/Shaft	All	Task 72-31-08-200-000-002 Fluorescent Penetrant Inspection
No. 4 Bearing Rotating (CDP) Air Seal	All	Task 72-31-10-200-000-001 Fluorescent Penetrant Inspection or Task 72-31-10-200-000-A01 Fluorescent Penetrant Inspection
HPCR Stage 10-14 Spool/Shaft	All	Task 72-31-22-200-000-002 Fluorescent Penetrant Inspection
** Disk/Shaft, HPT Rotor, Stage One	All	Task 72-53-02-200-000-001 (Inspection - Configuration 1), or Task 72-53-02-230-801 (Inspection - Configuration 2), Fluorescent-Penetrant Inspect, and Task 72-53-02-200-000-005 (Inspection - Configuration 1), or Task 72-53-02-250-802 (Inspection - Configuration 2), Disk Rim Bolt Hole Eddy Current Inspection, and Task 72-53-02-200-000-006 (Inspection - Configuration 1), or Task 72-53-02-250-803 (Inspection - Configuration 2), Disk Bore Area Eddy Current Inspection, and

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

		Task 72-53-02-200-000-007 (Inspection - Configuration 1), or Task 72-53-02-250-804 (Inspection - Configuration 2), Disk Dovetail Slot Bottom Eddy Current
* Disk/Shaft, HPT Rotor, Stage One	P/N 1531M84G12 and P/Ns 2047M32G01 thru G07	Task 72-53-02-250-801 (Inspection - Configuration 1), Disk Dovetail Slot Bottom Aft Corner Chamfers Eddy Current Inspection
Disk, HPT Rotor, Stage Two	All	Task 72-53-06-200-000-002 Fluorescent-Penetrant Inspect, and Task 72-53-06-200-000-006 Disk Rim Bolt Hole Eddy Current Inspection, and Task 72-53-06-200-000-007 Disk Bore Eddy Current Inspection
LPTR Stage 1-5 Disks	All	Task 72-57-02-200-000-001 Fluorescent-Penetrant Inspection
LPTR Shaft	All	Task 72-57-03-200-000-002 Fluorescent-Penetrant Inspect, and Task 72-57-03-200-000-006 Eddy Current Inspection

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

For CF6-80C2 Engines configured with the R88DT Turbine (Models CF6-80C2B2F, 80C2B4F, 80C2B6F, 80C2B7F, 80C2B8F):		
Disk/Shaft, HPT Rotor, Stage One (R88DT, No Rim Bolt Holes)	All	Task 72-53-16-200-000-001 Fluorescent-Penetrant Inspect, and Task 72-53-16-200-000-005 Disk Bore Area Eddy Current Inspection
Disk, HPT Rotor, Stage Two (R88DT, No Rim Bolt Holes)	All	Task 72-53-18-200-000-002 Fluorescent-Penetrant Inspect, and Task 72-53-18-200-000-005 Disk Bore Area Eddy Current Inspection
Rotating Interstage Seal (R88DT)	All	Task 72-53-17-200-000-001 Fluorescent-Penetrant Inspect, and Task 72-53-17-200-000-005 Seal Bore Area Eddy Current
Forward Outer Seal (R88DT)	All	Task 72-53-21-200-000-001 Fluorescent-Penetrant Inspect, and Task 72-53-21-200-000-004 Seal Bore Area Eddy Current
For CF6-80E1 Engines:		
Disk, Fan Rotor, Stage One	All	Sub Task 72-21-03-230-051 Fluorescent-Penetrant Inspection, and Sub Task 72-21-03-250-051 or 72-21-03-250-052 Disk Bore Eddy Current Inspection

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

Shaft, Fan	All	Sub Task 72-21-05-230-051 Fluorescent Penetrant Inspection, and Sub Task 72-21-05-250-051 Vent Hole Eddy Current Inspection
Compressor Rotor, Stage 1 Disk	All	Sub Task 72-31-04-230-051 Fluorescent Penetrant Inspection,
Compressor Rotor, Stage 2 Disk	All	Sub Task 72-31-05-230-051 Fluorescent Penetrant Inspection
Compressor Rotor, Stage 3-9 Spool	All	Sub Task 72-31-06-230-051 Fluorescent Penetrant Inspection
Compressor Rotor, Stage 10 Disk (Pre SB 72-0150)	All	Sub Task 72-31-07-230-051 Fluorescent Penetrant Inspection
Compressor Rotor Spool/Shaft, Stage 11-14 (Pre SB 72-0150)	All	Sub Task 72-31-08-230-051 Fluorescent Penetrant Inspection
Compressor Rotor Spool/Shaft, Stage 10-14 (SB 72-0150)	All	Sub Task 72-31-23-230-052 Fluorescent Penetrant Inspection
Compressor Rotor No. 4 Bearing Rotating Air Seal (CDP Rotating Seal)	All	Sub Task 72-31-10-230-051 Fluorescent Penetrant Inspection

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

HPT Disk/Shaft, Stage 1	All	Sub Task 72-53-02-230-051 Fluorescent-Penetrant Inspection, and Sub Task 72-53-02-250-051 Eddy Current Inspection, Rim Bolt Holes, and Sub Task 72-53-02-250-054 Eddy Current Inspection, Disk Bore
HPT Disk, Stage 2	All	Sub Task 72-53-06-230-051 Fluorescent-Penetrant Inspection, and Sub Task 72-53-06-250-051 Eddy Current Inspection, Rim Bolt Holes, and Sub Task 72-53-06-250-054 Eddy Current Inspection, Disk Bore
LPT Rotor Shaft	All	Sub Task 72-55-01-240-051 Magnetic Particle Inspect
LPT Disks, Stages 1-5	All	Sub Task 72-57-02-230-051 Fluorescent-Penetrant Inspect
LPT Rotor Torque Cone	All	Sub Task 72-57-03-220-051 Fluorescent-Penetrant Inspect
For CF6-80E1 Engines configured with the R88DT Turbine:		
Disk/Shaft, HPT Rotor, Stage 1 (R88DT, No Rim Bolt Holes)	All	Sub Task 72-53-16-230-052 Fluorescent-Penetrant Inspect, and Sub Task 72-53-16-250-051 Disk Bore Area Eddy Current Inspection

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

Disk, HPT Rotor, Stage 2 (R88DT, No Rim Bolt Holes)	All	Sub Task 72-53-18-230-051 Fluorescent-Penetrant Inspect, and Sub Task 72-53-18-250-051 Disk Bore Area Eddy Current Inspection
** HPT Rotor Rotating Interstage Seal (R88DT)	All	Sub Task 72-53-17-230-056 Fluorescent-Penetrant Inspect, and Sub Task 72-53-17-250-051 Seal Bore Area Eddy Current
HPT Rotor Forward Outer Seal (R88DT)	All	Sub Task 72-53-21-230-051 Fluorescent-Penetrant Inspect, and Sub Task 72-53-21-250-051 Seal Bore Area Eddy Current

2. Perform inspections of the parts listed in Table 1 of this AD in accordance with the instructions provided in the applicable manual provisions.

Definition:

For the purposes of these mandatory inspections, piece-part opportunity means:

a) The part is considered completely disassembled when accomplished in accordance with the disassembly instructions in the manufacturer's engine manual; and

b) The part has accumulated more than 100 cycles-in-service since the last piece-part opportunity inspection, provided that the part was not damaged or related to the cause for its removal from the engine.

The parts added to the table of this AD are identified by an asterisk (*) that precedes the part nomenclature. Also, parts that have an Engine Manual Inspection Task and or Sub Task Number reference updated in the table of this AD, are identified by two asterisks (**) that precede the part nomenclature.

AMOC's:

AMOC's previously approved for FAA AD 2002-07-12, are also approved for this AD.

General Electric Turbine Engines - CF6 Series

AD/CF6/71 (continued)

Note 2: FAA AD 2009-04-10 Amdt 39-15816 dated 5 February 2009 refers.

Note 3: This AD supersedes AD/CF6/46.

Compliance: Fro Requirement 1 - Within 180 days after the effective date of this AD.

For Requirement 2 - At each piece-part opportunity after Requirement 1 of this AD is completed.

This Airworthiness Directive becomes effective on 9 April 2009.

Background: This AD is superseding an existing airworthiness directive (AD) for General Electric Company (GE) CF6-80A, CF6-80C2, and CF6-80E1 series turbofan engines. That AD required revisions to the Airworthiness Limitations Section (ALS) of the manufacturer's Instructions for Continued Airworthiness (ICA) to include required inspection of selected critical life-limited parts at each piece-part exposure.

This AD requires revisions to the CF6-80A, CF6-80C2, and CF6-80E1 series engines ALS sections of the manufacturer's manuals and an air carrier's approved continuous airworthiness maintenance program to incorporate additional inspection requirements, and to update certain Engine Manual Inspection Task and Sub Task Number references.

This AD results from the need to require enhanced inspection of selected critical life-limited parts of CF6-80A, CF6-80C2, and CF6-80E1 series engines. The issuing of this AD is intended to prevent critical life-limited rotating engine part failure, which could result in an uncontained engine failure and damage to the aeroplane.

James Coyne
Delegate of the Civil Aviation Safety Authority

27 February 2009