Airworthiness Directive Schedule

Engines

Rolls-Royce 250 Series Turbine Engines

26 May 2022

Notes:

1. This AD schedule is applicable to Rolls-Royce Corporation 250 series engines (previously Allison Engine Company, Allison Gas Turbine Division and Detroit Diesel Allison) manufactured under FAA Type Certificate Numbers:

Engine Series:	FAA Type Certificate Number:
250-B17B	E10CE
250-B17C	E10CE
250-C18	E4CE
250-C18A	E4CE
250-C18C	E4CE
250-C20	E4CE
250-C20B	E4CE
250-C20F	E4CE
250-C20J	E4CE
250-C20R/2	E4CE
250-C28	E1GL
250-C30	E1GL
250-C30M	E1GL
250-C30P	E1GL
250-C30S	E1GL
250-C47B	E1GL
250-C47B/8	E1GL
250-C47E/4	E1GL
250-C47M	E1GL
250-C300/A1	E4CE
250-C300/B1	E4CE

2. The Federal Aviation Administration (FAA) is the National Airworthiness Authority (NAA) responsible for the issue of State of Design Airworthiness Directives (ADs) for these engines.

   State of Design ADs can be obtained directly from the FAA website at: http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/MainFrame?OpenFrameSet

3. The date above indicates the amendment date of this schedule.

4. New or amended ADs are shown with an asterisk *

Contents

DCA/AL250/1 Cancelled: Information now in Maintenance Manual

DCA/AL250/2 Cancelled: Once only inspection, purpose fulfilled

DCA/AL250/3 External Oil Sump Screen - Removal

Applicability: All 250-C18 and 250-C18A turbine assemblies as detailed

Requirement: Allison 250 CEB-24

Compliance: As detailed

Effective Date: 31 March 1968

DCA/AL250/4 Gasifier Turbine Oil Sump Screen - Removal

Applicability: All 250-C18 and 250-C18A turbine assemblies as detailed

Requirement: Allison 250 CEB-25

Compliance: As detailed

Effective Date: 31 March 1968

DCA/AL250/5 Cancelled - Information now in Maintenance Manual

DCA/AL250/6 Sixth Stage Compressor Blades - Modification

Applicability: All 250-C18 and 250-C18A compressor assemblies as detailed

Requirement: Allison 250 CEB-48

Compliance: Before further flight

Effective Date: 28 February 1969

DCA/AL250/7 Compressor Rotor, Second and Third Stage Wheel Assembly - Rework

Applicability: All 250-C18 and 250-C18A as detailed

Requirement: Allison 250 CEB-51

Compliance: By 31 December 1968

DCA/AL250/8 Compressor Case Assembly Vanes Leading Edge - Rework

Applicability: All 250-C18 and 250-C18A as detailed

Requirement: Allison 250 CEB-52

Compliance: By 31 December 1968

DCA/AL250/9 Compound Governor For PY Venting System - Modification

Applicability: 250-C18 and 250-C18A power turbine governors as detailed

Requirement: Allison 250 CEB-22

Compliance: By 31 May 1969

DCA/AL250/10 Fuel Control Start Derichment Bellows - Modification

Applicability: As detailed

Requirement: Allison 250 CEB-83

Compliance: By 1 June 1969

DCA/AL250/11 Cancelled: Once only inspection, purpose fulfilled

DCA/AL250/12 Accessories Gear Box - Modification

Applicability: As detailed

Requirement: FAA AD 69-26-3

Compliance: As detailed

Effective Date: 30 March 1970

DCA/AL250/13 Compressor Wheels Stages 1-6 - Glass Bead Peen - Modification

Applicability: All compressor assemblies prior to 250-C18 CAC 21525B and 250-C18A CAC 21773B

Requirement: Allison 250 CEB-106

Compliance: By next overhaul

Effective Date: 28 February 1971

DCA/AL250/14 Compressor PC Filter Insert - Inspection

Applicability: As detailed

Requirement: Allison 250 CEB-112

Compliance: Every 25 hours TIS until modified

Effective Date: 28 February 1971

DCA/AL250/15 Compressor PC Filter Insert - Rework and Modification

Applicability: As detailed in Parts 1, 2 and 3 of CEB-112

Requirement: Allison 250 CEB-112

Compliance: As detailed

Effective Date: 28 February 1971

DCA/AL250/16 Cancelled: DCA/AL250/19A refers

DCA/AL250/17 Power Turbine Governor to Control Fuel Tube - Modification

Applicability: As detailed

Requirement: Allison 250 CEB-1040

(FAA AD 73-19-7 refers)

Compliance: Within the next 50 hours TIS

Effective Date: 31 October 1973

DCA/AL250/18 Fuel Control Rigging - Inspection

Applicability: 250-C20 engines with Chandler Evans fuel controls

Requirement: FAA AD 74-14-03

Compliance: Within the next 25 hours TIS and thereafter at each change of the fuel control or the associated linkage system

Effective Date: 24 July 1974

DCA/AL250/19A Critical Components - Life Limitations

Applicability: Models 250-B17 series, C18 series, -C20 series, -C28 series and -C30 series engines

Requirement: Life limits established for critical components are published in the following documents and must be observed:

Model 250-B17 series, -C18 series and -C20 series - per corresponding Allison Gas Turbine Operations and Maintenance Manual.

Model 250-C28 series - Per Allison CSL 2005

Model 250-C30 series - per Allison CSL 3005

Effective Date: DCA/AL250/19 - 20 July 1977
DCA/AL250/19A - 23 October 1987

DCA/AL250/20 Compressor Bleed Valve - Modification

Applicability: All model 250-C20 and 250-C20B

Requirement: Allison 250 CEB-1116

(FAA AD 77-09-08 refers)

Compliance: By 31 August 1977

DCA/AL250/21B Power Turbine Outer Coupling Nut - Inspection

Applicability: All model 250-B17, -C18 and -C20 series with power turbine coupling nut P/N 6846278 or 6871338

Requirement: Inspect coupling nut per Allison TP CSL 1030 Rev. 3 (250-B17), CSL 88 Rev. 3 (-C18) or CSL 1060 Rev. 3 (-C20) as appropriate.

(FAA AD 77-15-12 refers)

Compliance: At intervals not exceeding 500 hours TIS, or one calendar year since installation in an aircraft, except that initial inspection may be deferred for not more than next 100 hours TIS or 90 days from the effective date of this requirement, whichever occurs first

Effective Date: DCA/AL250/21A - 12 May 1978
DCA/AL250/21B - 11 March 1983

DCA/AL250/22C Turbine Wheel - Inspection, Retirement and Operating Limitation

Applicability: All model 250-C20, -C20B, -C20C, -B17, -B17B, AND -B17C with following slotted third stage turbine wheels:

Part No.	Type of Shroud
6887113	Full Slot
6888633	Full Slot
6896863	Crimped Full Slot
6898551	Centre Slot
6898567	Centre Slot
6898733	Centre Slot
6898743	Centre Slot
6898753	Centre Slot
6898763	Centre Slot
6898823	Crimped Full Slot
6899364	Crimped Full Slot
6899406	Crimped Centre Slot
6899415	Crimped Centre Slot
6899416	Crimped Centre Slot
6899417	Crimped Centre Slot
6899418	Crimped Centre Slot
6899419	Crimped Centre Slot

Requirement: To preclude possible engine power loss resulting from partial blade and/or shroud separation of slotted third stage turbine wheels, accomplish the following:

1. Remove, inspect, return to service where applicable and ultimately retire from service affected turbine wheels per Allison CEB-A-1174/1146 Rev. 3.

2. Install following placards on aircraft instrument panel:

(a) Adjacent to tachometer `Avoid continuous operation 90 percent to 98 percent N2'.

(b) In clear view of pilot appropriate ground running precautions applicable to engine models affected, per Allison CEB-A-1174/1146 Rev. 3.

(FAA AD 83-03-02R1 refers)

Compliance: 1. Inspection, replacement and retirement - as prescribed in Allison CEB-A-1174/1146 Rev. 3 Compliance Schedule.

2. Placards - by 10 May 1983 if not already accomplished.

Effective Date: DCA/AL250/22B - 11 March 1983
DCA/AL250/22C - 6 April 1984

DCA/AL250/23 Fuel Pump LP Filter Element - Inspection

Applicability: All model 250-C20 engine assemblies P/N 6851480 and 6853341. All model 250-C20B engine assemblies P/N 6886440

Requirement: 1. Replace 10 Micron LP fuel filter element with 5 Micron element per Allison CEB-1092

2. Install HP fuel filter assembly per Allison CEB-1095

(Allison 250-C20/C20B CSL 1061 refers)

Compliance: By 30 September 1978

Effective Date: 23 June 1978

DCA/AL250/24 Fuel Pump Drive - Inspection

Applicability: All model 250-C18 series and 250-C20 series with fuel pump P/N 6854292, 6856250, 6857548, 6876803 and 6877719

Requirement: To prevent flameout due to spline failure:

1. Inspect per Allison CSL 61 for 250-C18 series and CSL 1007 for 250-C20 series

2. Modify per Allison CSB 161 for 250-C18 series and CSB 1051 for 250-C20 series

(FAA AD 78-14-08 refers)

Compliance: 1. Inspection - prior to 225 hours TTIS and thereafter at intervals not exceeding 200 hours TIS. Pumps which have exceeded 200 hours TTIS shall be initially inspected within the next 25 hours TIS

2. Modification - prior to 1500 hours TTIS. Pumps which have exceeded 1475 hours TTIS within the next 25 hours TIS

Effective Date: 22 July 1978

DCA/AL250/25 Compressor Wheels - Retirement

Applicability: All model 250-C18 with fourth stage compressor wheels P/N 6856754 or 6871444 in S/N range C01408 through C02321 as detailed in Allison 250-C18 CSL-96

Requirement: Remove from service all affected compressor wheels per Allison 250-C18 CSL-96

Compliance: Within the next 100 hours TIS

Effective Date: 31 August 1979

DCA/AL250/26A Turbine Wheels - Removal

Applicability: All model 250-B17, B17B, B17C, C20, C20B, and C20C engines with third stage turbine wheels P/N 6898551, 6898567, 6898733, 6898743, 6898753, 6898763, 6896863, 6898823, 6899364, 6899406, 6899415, 6899416, 6899417, 6899418 and 6899419

Requirement: To preclude possible engine power loss resulting from third stage turbine wheel failure, remove turbine wheels from service if following temperature time limits are exceeded and install a serviceable approved P/N turbine wheel

Temperature Range	**Time Limit**
810°C to 927°C (1490°F to 1700°F)	10 seconds max.
Over 927°C (1700°F)	0 seconds

(Allison CSL 1051 Rev. 3, CSL 1084 Rev. 3 and FAA AD 79-21-01R1 refer)

Note: Time at temperature limits is not additive and may be repeated without restriction

Compliance: Before further flight when hot start beyond established limits experienced except that aircraft may be flown to a base where removal can be performed

Effective Date: DCA/AL250/26 - 1 November 1979
DCA/AL250/26A - 24 July 1981

DCA/AL250/27 N2 (Electronic) Overspeed Control System - Deactivation

Applicability: All model 250-C28B engines installed in, but not limited to, Bell Model 206L-1 rotorcraft

Requirement: To preclude possible engine power loss resulting from intermittent or spurious activation of N2 (Electronic) overspeed control system, accomplish the following:

1. (a) Pull aircraft installed N2 overspeed circuit breaker and secure by wrapping with tape or placing `Ty-wrap' (or equivalent) around breaker stem.

   (b) Adjacent to N2 overspeed circuit breaker install placard which, in letters at least ¼ inch high states: "ENG OVSP CIRCUIT DEACTIVATED".

2. Install P/N AN814-4DL or alternative plug and P/N AS3084-04 packing in outlet port of N2 overspeed solenoid valve. Tighten and safety with lockwire.

(FAA AD 82-03-02 refers)

Compliance: Before further flight unless already accomplished

Effective Date: 12 March 1982

DCA/AL250/28 HP Fuel Control Filter - Modification

Applicability: All model 250-C20 and C20B with CECO fuel system

Requirement: Modify engine high pressure fuel control filter assembly P/N 6895173 or 6896727 to P/N 6899279 per Allison 250 CEB-A-1144

(FAA AD 82-13-03 refers)

Compliance: By 1 October 1982

Effective Date: 30 July 1982

DCA/AL250/29A Engine Fuel and Control System – Inspection

Applicability: All model 250 series engines fitted with a Bendix fuel control and power turbine governor assemblies containing or suspected of containing bushing assemblies P/N 2526146 with a nylon ball bearing separator.

Note: This AD amended to include Allison CEB-A-73-3021 which is applicable to model 250-C30, -C30P and –C30S engines.

Requirement: Inspect per Allison 250 CEB-A-229, CEB-A-1206, CEB-A-1166, CEB-A-73-2026 or CEB-A-73-3021 as applicable and replace any bushing assembly which has a nylon ball bearing separator with an assembly containing a steel ball bearing separator.

(FAA AD 82-24-05 refers)

Compliance: As prescribed in the requirement documents.

Effective Date: DCA/AL250/29 - 28 January 1983
DCA/AL250/29A - 26 June 2008

DCA/AL250/30 Turbine Assembly, Splined Adaptor Locknut - Inspection

Applicability: Models 250-C28B, -C28C and -C30 series engines with following turbine S/Ns CAT 70001 through 70802 and 70804; CAT 28001 through 28046; CAT 90001 through 95436 and 95438

Requirement: Inspect splined adaptor locknut torque per Allison 250-C28/C30 CEB-A-72-2132/3146.

(FAA AD 86-20-13 refers)

Compliance: Within the next 5 hours TIS unless already accomplished

Effective Date: 24 April 1987

DCA/AL250/31 Turbine Assembly - Modification

Applicability: Model 250-C30 series with turbine S/Ns detailed in Allison CEB-A-72-3128 Rev. 1 and CEB-A-72-3137 Rev. 2

Requirement: To preclude possibility of a gas producer uncontained turbine rotor failure, accomplish the following:

1. Install first stage turbine wheel internal energy absorbing ring P/N 23031909, or 23032263 per Allison CEB-A-72-3128 Rev. 1.

2. Replace second stage turbine wheel P/N 6892762, or 6898922, or 23004233 with P/N 23032280 per Allison CEB-A-72-3137 Rev. 2.

(FAA AD 86-19-12 refers)

Compliance: By 30 November 1987

Effective Date: 23 October 1987

DCA/AL250/32A Gas Producer Oil Tube - Modification

Applicability: All model 250-C30 series with turbine S/Ns detailed in Allison CEB-A-72-3165

Requirement: To preclude possibility of engine oil loss, modify No. 8 bearing oil supply tube assembly per Allison CEB-A-72-3165.

(FAA AD 88-07-06 refers)

Compliance: By 31 July 1988

Effective Date: DCA/AL250/32 - 23 October 1987
DCA/AL250/32A - 5 July 1988

DCA/AL250/33 Fuel Control - Removal

Applicability: Model 250-B17, -C20, -C20R and -C30 series with a Bendix gas producer controls listed in Allison CEB-A-1231, -A-1272, -A-73-4008 and -A-73-3042 respectively

Requirement: To prevent possible engine over-temperature, loss of throttle response or unscheduled power increase, remove affected fuel controls from service.

(FAA AD 88-17-01 refers)

Compliance: By 9 June 1989

Effective Date: 12 May 1989

DCA/AL250/34 Second Stage turbine Nozzle - Modification

Applicability: Model 250-C28B, except those with turbine S/N CAT 70498, CAT 70499, CAT 70502, CAT 70513 and subsequent

Model 250-C28C except those with turbine S/N CAT 28010 and subsequent

Requirement: To prevent failure of the second stage turbine nozzle and possible uncontained turbine wheel failure, modify and re-identify second stage turbine nozzle P/N 6898952 into P/N 23001942 per Allison CEB-A-72-2044 Rev. 4.

(FAA AD 89-23-12 refers)

Compliance: Within the next 100 hours TIS, or at the next turbine repair or overhaul, whichever occurs first, but not later than June 30, 1990

Effective Date: 30 March 1990

DCA/AL250/35 Scavenge Line Air/Oil Separator Assembly - Installation

Applicability: Model 250-C28B, S/N CAE 860011 through CAE 860787 with turbine S/N CAT 70011 through 70804

Requirement: To improve venting of the No. 8 bearing oil sump install No. 8 bearing scavenge line air/oil separator assembly, P/N 23034772 per Allison CEB-A-72-2138 Revision 1.

(FAA AD 86-16-03 refers)

Compliance: By 31 March 1991

Effective Date: 21 December 1990

DCA/AL250/36B Unapproved Components - Removal

Applicability: Model 250 series fitted with any of the following components.

Power Turbine Governor P/N 23005491 Serial Number: 4493
Power Turbine Governor P/N 2524769-11 Serial Number: 24924
Turbine disk #1 P/N 6886407 Serial Number: X108906 X69846 X90633
Turbine disk #2 P/N 6877092 Serial Number: X32096
Turbine disk #2 P/N 6898782 Serial Number: AD84185

Requirement: To prevent possible in-service failure of unapproved components, remove the components listed from service.

Any of the components listed held as spares must not be fitted to any engine.

Compliance: Before further flight.

Effective Date: DCA/AL250/36A - 27 November 1996
DCA/AL250/36B - 14 February 1997

DCA/AL250/37 Superior Air Parts Bearings - Inspection

Applicability: Model 250-B15G, -B17F, -B17F/1, -B17F/2, -C20, -C20B, -C20F, -C20J, -C20S, -C20W, -R, -C20R/1, -C20R/2, -C20R/4, -C28B, -C28C, -C30, -C30P, -C30M, and -C30G turbine engines, with Superior Air Parts, Inc. Parts Manufacture Approval (PMA) bearings, P/N A6871505 and/or P/N A23007152, installed.

These engines are installed on, but not limited to the following aircraft:- ASTA N-22 and N-24 series, Bell 206 series, Eurocopter AS355 series, Hiller UH12 series (Soloy Conversions) and McDonnell Douglas 369 series.

Requirement: To prevent bearing failure due to bearing separator instability, which can result in subsequent turbine and engine failure, accomplish the following:-

1. For engines with No. 5 bearings, Superior P/N A6871505 installed:-

(a) Perform an initial visual inspection of all engine filters for metal particles per Superior Turbine SB T95-SB001, Rev A. If any engine filter contains metal particles that exceed the return to service criteria described in the SB, prior to further flight remove the No. 5 bearing, Superior P/N A6871505, and replace with a serviceable No. 5 bearing, Allison P/N 6871505.

(b) Thereafter, for engines with No. 5 bearing, Superior P/N A6871505 installed, perform visual inspections of all engine filters for metal particles per SB T95-SB001 Rev A, and if necessary replace with serviceable parts.

2. For engines with No. 8 bearings, Superior P/N A23007152 installed:-

(a) Perform an initial visual inspection of all engine filters for metal particles per SB T95-SB002 Rev A. If any engine filter contains metal particles that exceed the return to service criteria described in the SB, prior to further flight remove the No. 8 bearing, Superior P/N A23007152, and replace with a serviceable No. 8 bearing, Allison P/N 23031478.

(b) Thereafter, for engines with No. 8 bearing, Superior P/N A23007152 installed, perform visual inspections of all engine filters for metal particles per SB T95-SB002 Rev A, and if necessary replace with serviceable parts.

3. Remove the No. 5 bearing, Superior P/N A6871505, and replace with a serviceable No. 5 bearing, Allison P/N 6871505; and remove the No. 8 bearing, Superior P/N A23007152, and replace with a serviceable No. 8 bearing, Allison P/N 23031478. This constitutes terminating action to the inspection requirements of this AD.
(FAA AD 96-19-01 refers)

Compliance: 1. (a) Within the next 20 days.
(b) For engines with 300 hours or less TIS since overhaul, or TSN if never overhauled, perform inspections at intervals not to exceed 25 hours TIS since last inspection.
For engines with more than 300 hours TIS since new or overhaul, whichever is lesser, perform inspections at intervals not to exceed 100 hours TIS since last inspection.

2. (a) Within the next 20 days.
(b) For engines with 300 hours or less TIS since overhaul, or TSN if never overhauled, perform inspections at intervals not to exceed 25 hours TIS since last inspection.
For engines with more than 300 hours TIS since new or overhaul, whichever is lesser, perform inspections at intervals not to exceed 100 hours TIS since last inspection.

3. At the next engine overhaul, repair or maintenance when disassembly permits replacement of the bearing, whichever occurs first.

Effective Date: 25 October 1996

DCA/AL250/38A Electrical Harness, HMU and ECU - Replacement

Applicability: Model 250-C47B engines, installed on but not limited to Bell Model 407 helicopters.

Requirement: To prevent uncommanded in-flight engine shutdowns, which can result in autorotation, forced landing, and possible loss of the helicopter, accomplish the following:-

1. Replace the engine main electrical harness assembly, P/N 23062796, with an improved assembly, P/N 23065805, per Allison Alert Commercial Engine Bulletin (CEB) CEB-A-73-6010.

2. Install a new hydromechanical unit and engine control unit per Allison CEB-A-73-6015, Revision 1, or Revision 2.

3. Remove the "OVRSPD SYSTEM INOP" placard required by paragraph (d) of AD 96-24-09, and revise the Flight Manual by removing the pages added by paragraph (f) of AD 96-24-09, and incorporate BHTC Flight Manual BHT-407-FM-1, Revision 5, dated June 24, 1997.

4. Install a corrosion resistant electronic control unit (ECU) per Allison CEB-A-73-6017, Revision 1, or Revision 2. Installation of a corrosion resistant ECU in accordance with this paragraph will satisfy the requirement in paragraph 2 of this AD to install a new ECU.
(FAA AD 98-10-03 refers)

Compliance:
1. Prior to further flight.
2. Prior to 31 January 1998.
3. Prior to further flight after completing the requirements of paragraph 2 of this AD.
4. By 17 August 1998.

Effective Date: DCA/AL250/38 - 19 December 1997
DCA/AL250/38A - 3 July 1998

DCA/AL250/39 Fuel Control Bellows - Replacement

Applicability: Model 250-B15, 250-B17, 250-B17F, series turboprop engines and 250-C18, 250-C20, 250-C20R, 250-C28, 250-C30 series turboshaft engines.

Requirement: To prevent main fuel control (MFC) bellows assembly leakage, which can result in an uncommanded minimum fuel flow condition and subsequent loss of engine fuel flow control, accomplish the following:-

Replace existing beryllium copper MFC bellows assemblies, P/Ns 2523722, 2539647, 2540539, 2540767, and 2542526, with Inconel 718 stainless steel welded MFC bellows assemblies, P/N 2543598, per Allison CEB-A-282/AlliedSignal Aerospace Equipment Systems SB GT-242, Revision 2.
(FAA AD 98-24-28 refers)

Note: Allison CEB-A-282, Revision 2, dated April 15, 1998, also serves as CEB-A-1329 for the 250-C20 series engines, CEB-A-73-2053 for the 250-C28 series engines, CEB-A-73-3068 for the 250-C30 series engines, CEB-A-73-4029 for the 250-C20R series engines, Turboprop (TP) CEB-A-158 for the 250-B15G series engines, TP CEB-A-1286 for the 250-B17 series engines, and TP CEB-A-73-2014 for the 250-B17F series engines.

Compliance: At the earlier of the following:

The next time the MFC is being repaired or overhauled, or

By 31 March 1999 for all MFCs listed by P/Ns in Tables 1 and 2 of the CEB/SB.
By 31 August 1999 for all MFCs listed by P/Ns in Table 3 of the CEB/SB.
By 31 October 1999 for all MFCs listed by P/Ns in Tables 4 and 5 of the CEB/SB.

Effective Date: 15 January 1999

DCA/AL250/40A Torquemeter - Replacement

Applicability: Models 250-C20, -C20B, -C20F, -C20J, -C20R, -C20R/1, -C20R/2, -C20S and –C20W turboshaft engines and 250-B17, -B17C, -B17D, -B17E, -B17F, -B17F/1, and B17F/2 turboprop engines.

Note: This revision to the AD, adds model 250-C20J.

Requirement: To prevent uncontained engine failure, engine failure and possible fire, accomplish the following:-

Replace helical torquemeter gearshaft assemblies P/N 23035299 or 23038191 that have less than 100 hoursTSN, with a serviceable torquemeter. For the purposes of this AD the following torquemeter assemblies are considered serviceable;

(1) P/N 23035299 or 23038191 that have greater than 100 hours TSN.

(2) A torquemeter assembly with a P/N other than 23035299 or 23038191.

(FAA AD 2001-24-12 refers)

Compliance: Before further flight unless already accomplished.

Effective Date: DCA/AL250/40 – 3 October 2001
DCA/AL250/40A – 20 December 2001

DCA/AL250/41 Third Stage Turbine – Life Limitation

Applicability: Model 250-C28, -C28B and –C28C with third stage turbine wheels P/N 6899383 and one of the following S/Ns.

HX91428R	HX91471R	HX91489R	HX91512R	HX91707R	HX91736R
HX91456R	HX91472R	HX91490R	HX91513R	HX91708R	HX91738R
HX91457R	HX91473R	HX91492R	HX91519R	HX91709R	HX91742R
HX91458R	HX91474R	HX91493R	HX91520R	HX91710R	HX91744R
HX91459R	HX91475R	HX91494R	HX91522R	HX91711R	HX91748R
HX91461R	HX91477R	HX91500R	HX91523R	HX91712R	HX91749R
HX91462R	HX91478R	HX91501R	HX91524R	HX91713R	HX91750R
HX91464R	HX91480R	HX91503R	HX91525R	HX91714R	HX91754R
HX914659	HX91482R	HX91504R	HX91526R	HX91715R	HX91764R
HX91465R	HX91483R	HX91506R	HX91527R	HX91721R	HX91765R
HX91466R	HX91485R	HX91507R	HX91528R	HX91722R	HX91766R
HX91467R	HX91486R	HX91508R	HX91529R	HX91726R	HX91767R
HX91468R	HX91487R	HX91510R	HX91530R	HX91733R	HX91768R
HX91469R	HX91488R	HX91511R	HX91706R	HX91735R	HX91769R

Requirement: To prevent failure of the third stage turbine leading to loss of power and damage to the airframe, remove the above listed turbine wheels from service per the following :

For 3rd stage turbine wheel	Remove by
With fewer than 3,000 cycles-since-new (CSN), and fewer than 1,500 hours time-since-new (TSN).	3,000 CSN or 1,500 hours TSN, whichever occurs earlier.
With between 3,000 and 6,000 CSN, and fewer than 1,500 hours TSN.	200 additional cycles.
With fewer than 3,000 CSN, and between 1,500 and 3,000 hours TSN	100 additional hours.
With between 3,000 and 6,000 CSN and between 1,500 and 3,000 hours TSN	200 additional cycles or 100 additional hours, whichever occurs earlier
With more than 6,000 CSN, or more than 3,000 hours TSN	Before further flight

(FAA AD 2002-06-08 refers)

Compliance: As detailed in table above.

Effective Date: 26 April 2002

DCA/AL250/42 Cancel DCA/AL250/43 refers

Effective Date: 27 January 2005

DCA/AL250/43 Cancelled - DCA/AL250/50 refers

Effective Date: 31 August 2006

DCA/AL250/44 Power lever Angle Potentiometer - Inspection

Applicability: Rolls-Royce Corporation (RRC, formerly Allison Engine Company, Allison Gas Turbine Division, and Detroit Diesel Allison),

Models 250-C30R/3, -C30R/3M, -C47B, and -C47M turboshaft engines that have a hydromechanical unit (HMU) with a P/N listed in 1.A. Group A of RRC Alert Commercial Engine Bulletins No. CEB A-73-3103, Revision 4, and No. CEB A-73-6030, Revision 4,

Note: These engines are installed on, but not limited to, Bell OH-58D, Bell Helicopter Textron 407, Boeing AH/MH-6M, and MD Helicopters Inc. 600N helicopters.

Requirement: This AD supersedes DCA/AL250/42 and results from the manufacturer releasing a redesigned HMU that has a dual-element potentiometer. This AD retains the initial and repetitive inspections of DCA/AL250/42 but replacement of the HMU with the redesigned unit is now terminating action for this AD.

To prevent uncommanded and sudden changes in engine power accomplish the following:

1. Perform an initial electrical signal inspection of the HMU Power Lever Angle (PLA) potentiometer IAW paragraphs 2.B. through 2.B.(8) and 2.B.(10) of the Accomplishment Instructions of RRC ACEB No. CEB A-73-3103, Revision 4, or No. CEB A- 73-6030, Revision 4. Replace the HMU before further flight if the electrical signal inspection result is unacceptable.

2. Replace the HMU with an HMU that has a P/N not specified in this AD within 600 FH after the effective date of this AD, or January 31, 2005, whichever occurs earlier. Replacement with a unit with a P/N outside the range effected by this AD terminates the repetitive inspection requirement specified in paragraph 1.

(FAA AD 2004-24-04 refers)

Compliance: 1. Within 100 hours TIS, or 300 hours TIS since inspection per DCA/AL250/42, whichever occurs later, and thereafter at intervals not to exceed 300 hours between inspections.

2. Within 600 hours TIS.

Effective Date: 27 January 2005

DCA/AL250/45 C28 3rd Stage Turbine Wheels – Life Limitation

Applicability: Rolls-Royce Corporation (formerly Allison Engine Company, Allison Gas Turbine Division, and Detroit Diesel Allison) models 250-C28, -C28B, and -C28C turboshaft engines with third-stage turbine wheels, P/N 6899383, with the following S/Ns:

TABLE 1.—SNs OF AFFECTED THIRD STAGE TURBINE WHEELS

HX91922 X523242 X523281

HX91923 X523243 X523283

HX91925 X523244 X523284

HX91926 X523246 X523287

HX91928 X523249 X523288

HX91929 X523250 X523289

HX91930 X523251 X523290

HX91932 X523253 X523291

HX91934 X523255 X523292

HX91936 X523257 X523293

HX91937 X523260 X523294

HX91939 X523261 X523295

HX91940 X523262 X523296

HX91960 X523263 X523297

HX91962 X523264 X523298

HX91966 X523265 X523300

HX91976 X523266 X523305

HX91977 X523268 X523309

HX91979 X523269 X523313

HX91980 X523270 X523315

X523236 X523271 X523317

X523237 X523273 X523319

X523238 X523276 X523320

X523239 X523277

X523241 X523278

These engines are installed on, but not limited to, Bell Helicopter Textron 206L-1; Eurocopter Deutschland BO 105 LS A-1; and Eurocopter Canada BO 105 LS A-3 helicopters. (FAA AD 2004-14-02)

Requirement: To prevent power loss and uncommanded engine shutdown due to failure of the third-stage turbine wheel blade and shroud, replace effected 3rd stage turbine wheels as specified below.

Compliance: For any third-stage turbine wheel with fewer than 250 hours TSN, replace turbine wheel before accumulating 300 hours TSN.

For any third-stage turbine wheel with 250 or more hours TSN on the effective date of this AD, replace turbine wheel before accumulating an additional 50 hours TIS.

Effective Date: 24th February 2005

DCA/AL250/46B Compressor Couplings – Removal from Service

Applicability: Rolls-Royce Corporation (formerly Allison Engine Company, Allison Gas Turbine Division and Detroit Diesel Allison) 250-B17, -B17B, -B17C, -B17D, -B17E, 250-C20,-C20B, -C20F, -C20J, -C20S and -C20W series turboprop and turboshaft engines fitted with the following compressor adaptor couplings:

Alcor Engine Company P/N 23039791AL and 23039791AL–1/–2/–3, and

Extex Ltd P/N A23039791, E23039791, E23039791–1/–2/–3, EH23039791 and EH23039791–1/–2/–3, and

Rolls-Royce Corp P/N 23039791–1/–2/–3, and

Superior Air Parts P/N A23039791.

Note: DCA/AL250/46B revised to extend the compliance (i.e. the replacement) for RRC compressor adaptor couplings P/N 23039791-1, -2 and -3 to 1 March 2017. There is no change to the AD requirement.

Requirement: To prevent compressor adaptor coupling failure which could result in an engine shutdown, accomplish the following:

1. Alcor compressor adaptor couplings**:**

Replace Alcor compressor adaptor couplings P/N 23039791AL, 23039791AL-1, -2 and -3.

2. Extex and SAP compressor adaptor couplings**:**

Replace Extex and SAP compressor adaptor couplings P/N A23039791, E23039791, E23039791-1, -2 and -3, EH23039791 and EH23039791-1, -2 and -3.

3. Rolls-Royce Corporation (RRC) compressor adaptor couplings**:**

Replace RRC compressor adaptor couplings P/N 23039791-1, -2 and -3.

(FAA AD 2004-26-09 and FAA AMOC dated 24 Feb 2012 refer)

Compliance: 1. For Alcor compressor adaptor couplings**:**

For couplings with 600 or more hours TSN, or unknown operating hours that cannot be determined, replace affected couplings at the next access or within 300 hours TIS from 8 March 2005 (the effective date of DCA/AL250/46A) whichever occurs sooner.

For couplings with fewer than 600 hours TSN, replace couplings at the next access or before exceeding 900 hours TSN whichever occurs sooner.

2. Extex and SAP compressor adaptor couplings**:**

For couplings with unknown operating hours that cannot be determined and couplings with 600 or more hours TSN, replace affected couplings at the next access or within 300 hours TIS from 8 March 2005 (the effective date of DCA/AL250/46A) whichever occurs sooner.

For couplings with fewer than 600 hours TSN, replace affected couplings at the next access or before exceeding 900 hours TIS whichever occurs sooner.

3. RRC compressor adaptor couplings**:**

Replace affected couplings the next time the compressor rotor is disassembled for any reason, or by 1 March 2017 whichever occurs sooner.

Effective Date: DCA/AL250/46 - 24 February 2005
DCA/AL250/46A - 8 March 2005
DCA/AL250/46B - 29 March 2012

DCA/AL250/47 Turbine Wheel Energy Absorbing Ring - Installation

Applicability: Model 250-B17B, B17C, -B17D, -B17E, -C20, -C20B, - C20F, -C20J, -C20S, and -C20W turboprop and turboshaft engines that are not fitted with a turbine energy absorbing ring, P/N 23035175, or an equivalent approved turbine energy absorbing ring.

These engines are installed on, but not limited to Aerospatiale AS 355F1, Agusta AB206B, Bell 206B, Bell 206L, Bolkow BO 105 DBS-4, Hiller UH-12E, GAF N24A, Hughes 369D, Hughes 369E and Hughes 369HS aircraft.

Requirement: To minimize the risk of uncontained 1st stage turbine wheel fragments from causing damage to the aircraft or damage to the second engine on twin-engine installations, which could lead to loss of control of the aircraft, install a turbine energy absorbing ring, P/N 23035175, or an equivalent approved turbine energy absorbing ring, in the plane of the 1st stage turbine wheel, per paragraphs 1.M., 2.A., and 2.B. of Rolls-Royce Corporation Alert Commercial Engine Bulletin CEB-A-1255, revision 4.
(FAA AD 2005-10-13 refers)

Compliance: At the next disassembly of the turbine rotor module, or within 1750 hours time since new, overhaul, heavy maintenance or last hot section inspection, whichever occurs first, but no later than 31 October 2011, unless already accomplished.

Effective Date: 30 June 2005

DCA/AL250/48 Third Stage Turbine Wheels – Inspection

Applicability: All model 250-C28, -C28B and -C28C turboshaft engines.

Requirement: To prevent failure of the third-stage turbine wheel resulting in loss of power and possible uncommanded engine shutdown, remove the third-stage turbine wheel P/N 6899383, and inspect the seal joint in each passage between airfoils at the hub and shroud, per Rolls-Royce Corporation Alert Service Bulletin CEB-A-72-2205. Replace unserviceable turbine wheels, before further flight.
(FAA AD 2005-20-11 refers)

Compliance: For third-stage turbine wheels with less than 3000 hours TSN, inspect at next exposure of third-stage turbine wheel, or by 1 July 2007, whichever occurs sooner.

For third-stage turbine wheels with 3000 hours or more TSN, inspect within 300 hours TIS, or by 1 July 2007, whichever occurs sooner.

Effective Date: 1 December 2005

DCA/AL250/49 Gas Producer Rotor Assembly Tie Bolts - Replacement

Applicability: Model 250-B17, 250-B17B, 250-B17C, 250-B17D, 250-B17E, 250-B17F, 250-B17F/1, 250-B17F/ 2, 250-C18, 250-C20, 250-C20B, 250-C20F, 250-C20J, 250-C20R, 250-C20R/1, 250-C20R/2, 250-C20R/4, 250-C20S and 250-C20W series turboprop and turboshaft engines fitted with gas producer rotor assembly tie bolt P/Ns listed in the following table:

Manufacturer:	Affected Part Numbers:
Extex Ltd. (EXTEX)	A23008020 and E23008020
Rolls-Royce Corporation (RRC)	23008020, 6843388 and 6876991
Superior Air Parts Inc. (SAP)	A23008020
Pacific Sky Supply Inc	23008020P

These engines are installed on, but not limited to Bell 206A, 206B, 206C, McDonnell Douglas 369D, 369E, 369F, 369H, 369HS, Schweizer 269D, GAF N24A and Eurocopter AS355E, AS355F, AS355F1, AS355F2 aircraft.

Requirement: To prevent tie bolt failure which could cause loss of engine power due to overspeed of the first stage turbine wheel, replace the gas producer rotor assembly tie bolts with P/Ns that are not listed in the applicability table of this AD, per Rolls-Royce Corporation Commercial Engine Bulletin CEB A-304, CEB A-1371, CEB A-72-4076, TP CEB A-176, TP CEB A-1319 or TP CEB A-72-2027 as applicable.

Note: Do not install gas producer rotor assembly tie bolts with P/Ns as listed in table 1 to any model 250-B or 250-C series engine.
(FAA AD 2006-13-06 refers)

Compliance: At the next turbine repair or overhaul, or by 31 October 2011 whichever occurs sooner.

Effective Date: 27 July 2006

DCA/AL250/50 Fuel Nozzle Screen – Inspection

Applicability: Model 250-B and 250-C series turboshaft and turboprop engines as follows:

-B15A, -B15E, -B15G, -B17, -B17B, -B17C, -B17D, -B17E, -B17F, -B17F/, -B17F/2, -C18, -C18A, -C18B, -C18C, -C20, -C20B, -C20C, -C20F, -C20J, -C20R, -C20R/1, -C20R/2, -C20R/4, -C20S, -C20W, -C28, -C28B, -C28C, -C30, -C30G, -C30G/2, -C30M, -C30P, -C30R, -C30R/1, -C30R/3, -C30R/3M, -C30S, -C30U, -C40B, -C47B and -C47M.

These engines are installed on, but not limited to, Bell Helicopter Textron models 206A, 206B, 206L, 206L-1, 206L-3, 206L-4, 407 and 430, Eurocopter France models AS355E, AS355F, AS355I and AS355F2, Eurocopter Deutschland Models BO-105A, BO-105C, BO-105S and BO-105LS A-1, McDonnell Douglas 369D, 369E, 369F, 369H, 369HE, 369HM, 369HS, 369FF and 500N, Schweizer TH269D and Sikorsky S-76A aircraft.

Requirement: To minimize the risk of sudden loss of engine power and uncommanded engine shutdown, due to the possible collapse of the screen in the fuel nozzle, accomplish the following:

1. For engines fitted with the following fuel nozzles, inspect per the applicable Rolls-Royce Corporation Alert Commercial Engine Bulletins (CEB):

Manufacturer	P/N	Corresponding RRC vendor P/N
RRC	6874959	5232815
	6894610	5233465
	6898531	5233585
Goodrich Delavan (Parts Manufacturer Approval) PMA	47069	N/A
	47101	N/A
	49445	N/A

If contamination is found on the screen, inspect and clean the entire aircraft fuel system, per the applicable CEB, before further flight.

2. For engines fitted with the following fuel nozzles, inspect per the applicable CEB:

Manufacturer	P/N	Corresponding RRC vendor P/N
RRC	6852020	5232480
	6890917	5233333
	6899001	5233600

If contamination is found on the screen, inspect and clean the entire aircraft fuel system, per the applicable CEB, before further flight.

3. Replace all fuel nozzles listed in requirements 1 and 2 with a fuel nozzle P/N which is not listed in this AD.

(FAA AD 2006-16-04 refers)

Note 1: If the inspection of RRC fuel nozzles P/Ns 6852020, 6890917 and 6899001 has been accomplished per DCA/AL250/43 (FAA AD 2004-24-09 refers), then requirement 2 has been accomplished.

Note 2: Service information related to the requirements of this AD can be found in Rolls-Royce Corporation Alert Commercial Engine Bulletins CEB–A–313, CEB–A–73–2075, CEB–A–1394, CEB–A–73–3118, CEB–A–73–4056, CEB–A–73–5029, CEB–A–73–6041, TP CEB–A–183, TP CEB–A–1336 and TP CEB–A–73–2032, as applicable.

Compliance: 1. Within the next 50 hours TIS.

2. Within the next 150 hours TIS, unless already accomplished per DCA/AL250/43.

3. At the next fuel nozzle overhaul.

Effective Date: 31 August 2006

DCA/AL250/51A Third and Fourth Stage Turbine Wheels – Speed Range Life Limitation

Applicability: Models 250- C30, -C30G, -C30G/2, -C30M, -C30P, -C30R, -C30R/1, -C30R/3, -C30R/ 3M, -C30S, -C30U, -C40B, -C47B and -C47M turboshaft engines, fitted with third-stage turbine wheels, P/Ns 6898663 or 23065843, or a fourth-stage turbine wheel P/Ns 6892764 or 23066744.

These engines are installed on, but not limited to, Bell 206L-3, Bell 206L-4, Bell 230, Bell 407, Bell 430, MDHI 369F, MDHI 369FF, MDHI 600N and Sikorsky S-76A helicopters.

Note 1: AD amended to include note 3 and 4.

Requirement: To prevent the possibility of uncontained engine failure or loss of engine power or engine shutdown, replace the third and fourth-stage turbine wheels after the turbine wheels have entered the speed event range for the sixth time.

To determine the turbine speed event range refer to the instruction in paragraph 2.A. through 2.A.(5) and the applicable figures 1 through to 5 of Rolls Royce Corporation Alert Commercial Engine Bulletins (CEBs) No. CEB A-72-3272, No. CEB A-72-5048 and No. CEB A-72-6054 (combined in one document), revision 2.

Record every occurrance when the third and fourth-stage turbine wheels enters the speed range between "Event Threshold" and "Maximum Overspeed Transient".

Note 2: The turbine wheels are only allowed to enter the speed range between "Event Threshold" and "Maximum Overspeed Transient" five times. After the sixth event, the turbine wheels must be replaced.

Note 3: Sign engine logbook for AD compliance at time of adding the inspection requirement to the aircraft tech log. Also add the retirement criteria in this AD to the engine logbook in Section 3 Engine Component Record.

Note 4: The pilot must record every event when the turbine wheels have entered the speed range between "Event Threshold" and "Maximum Overspeed Transient". (FAA AD 2006-20-07 refers)

Note 5: The retirement criteria in this AD are in addition to the existing third- and fourth-stage turbine wheel hour and cycle life limitations. Turbine wheels are to be replaced when they exceed their life limit (transient speed excursions, hours, or cycles).

Compliance: By the 30 December 2006.

Effective Date: DCA/AL250/51 - 30 November 2006
DCA/AL250/51A - 26 July 2007

DCA/AL250/52 Generator Idler Gearshaft – Life Limit

Applicability: All model 250-C28 and 250-C30 series engines fitted with a generator idler gearshaft P/N 6898980 or 6898591 or 77 tooth spur idler gearshaft P/N 6898652

These engines are known to be installed on, but not limited to Bell 206L-1 and Sikorsky S-76 helicopters.

Requirement: To prevent failure of the accessory drive gearbox possibly resulting in loss of engine power, the affected gearshaft must be removed from service prior to reaching the life limit.

Accomplish these requirements per Commercial Engine Bulletins CEB 72-2003 for 250-C28 engines and CEB 72-3003 for 250-C30 series engines.

Note: For the purpose of this AD, a cycle is defined as an engine start, or an attempted engine start, or the turning over of the engine using the starter. The start counter which accumulates the cycle counts is only activated when the ignition circuit is energized. A cycle must be added if the engine is turned over using the starter with the ignition circuit off.

(FAA AD 79-16-06 refers)

Compliance: For 250-C28 series engines:

At 9000 CSN or within the next 50 cycles whichever is the later, unless previously accomplished, and thereafter at intervals not to exceed 9000 cycles.

For 250-C30 series engines:

At 2000 CSN or within the next 50 cycles whichever is the later, unless previously accomplished, and thereafter at intervals not to exceed 2000 cycles.

Effective Date: 26 June 2008

DCA/AL250/53 4th Stage Turbine Nozzles – Life Limit

Applicability: Model 250-C30, -C30P and C30S engines and turbine assemblies fitted with 4th stage turbine nozzle assembly P/N 6898694,

Except model 250-C30 and 250-C30S engines with engine S/N, turbine S/N CAE 890690, 890691, CAT 95105, 95106, 890692, 890696 onward, 95108, 95109 onward, and model 250-C30P engines, with engine S/N, turbine S/N CAE 895086, 895087 onward, CAT 95110, 95111, 95112 onward.

Requirement: To prevent cracks in 4th stage turbine wheel nozzles P/N 6898694 possibility resulting in uncontained engine failure or loss of engine power or engine shutdown, accomplish the following:

Inspect nozzles P/N 6898694, reduce the life limits based on inspection results and replace affected nozzles in accordance with the schedule, instructions and inspection criteria specified in Detroit Diesel Allison Commercial Engine Alert Bulletin CEB-A-72-3056, revision 3 or later approved revision.

(FAA AD 81-13-12R1 refers)

Compliance: As prescribed in CEB-A-72-3056, unless already accomplished.

Effective Date: 26 June 2008

DCA/AL250/54 Turbine & Compressor Assemblies – Inspection

Applicability: Model 250-C30 engines, S/N CAE 900001 through to 9000026, and

Model 250-C30 and -C30S engines, S/N CAE 890001 through to 890840, 890843 through 890847, 890849 through to 890858, 890860, 890861, 890863, and

Model 250-C30R engines, S/N CAE 895068, 895077, 895078, 895082, 895084, 895085, 895096, and

Model 250-C30P engines, S/N CAE 895001 through to 895177, and

Fitted with turbine S/N CAT 900001 through to 90683, 95001 through to 95336, 95338 through to 95347, 95349, 95350, 95352 through to 95365, 95368, 95370, 95372 through to 95374, 95376 through to 95394, 95396, 95398 through to 95407

Except model 250-C30 series engines embodied with the following Allison Commercial Engine Bulletins (CEB's):

Commercial Engine Bulletin No:	Subject:
CEB-A-72-3134, revision 2 dated 15 Sep 1985 or CEB-A-72-3135, revision 1 dated 15 Sept 1985 or later approved revision.	Engine, Turbine Assembly, Turbine-to-Compressor Coupling Shaft-Replace.
CEB-72-3100, revision 1 dated 15 Sep 1985 or later approved revision.	Engine, Compressor Assembly, Spur Adapter Gearshaft - modified by adding Three Slots in Bore & Plugging Oil Feed Hole.
CEB-72-3059, revision 4 dated 15 Sep 1985 or later approved revision.	Engine, Compressor and Gearbox Assemblies - modify to Roller Number 2 1/2 Bearing Configuration.
CEB-72-3096, revision 1 dated 15 Sep 1985, or later approved revision	Engine, Turbine-Exhaust Collector Modifications.

Requirement: To prevent cracks in the turbine-to-compressor coupling P/N 23008080, or carbon build up on the turbine shafts and couplings that can cause shaft rub, or shaft misalignment possibly resulting in a disconnect failure, engine overspeed and uncontained engine failure, accomplish the following:

1. For model 250-C30 and -C30S engines fitted to Sikorsky S-76A aircraft:

   1.1 Remove coupling P/N 23008080 and replace with P/N 23032345 in accordance with Allison CEB-A-72-3134, revision 2, or later approved revision, or as alternative temporary compliance, replace coupling P/N 23008080 with a serviceable P/N 6896895 or P/N 6889071 per Allison CEB-A-72-3134.

   1.2 Inspect, clean the turbine shafting/couplings and replace O-ring P/N AS 3085-018 (two for P/N 23032345 and one for P/N 6896895 or P/N 6889071) on the aft end of the spur adapter gearshaft in accordance with CEB-A-72-3108, revision 3 or later approved revision.

   1.3 Modify the spur adapter gearshaft assembly P/N 23005276 per Allison CEB 72-3100, revision 1 or later approved revision.

   Modify the engine compressor and gearbox assemblies to include the roller bearing configuration at the 2 1/2 bearing location per Allison CEB 72-3059, revision 4 or later approved revision.

   Replace turbine-to-compressor-couplings P/N 6896895 or P/N 6889071 with P/N 23032345 and install two O-rings P/N AS 3085-018 on the aft end of the spur adapter gearshaft per Allison CEB-A-72-3134.

   1.4 Modify the turbine-exhaust-collector per Allison CEB 72-3096, revision 1 or later approved revision.

2. For model 250-C30, -C30P, -C30R and -C30S engines fitted to another aircraft other than a Sikorsky S-76A aircraft:

   2.1 Inspect and clean the turbine shafting/couplings and replace the O-rings P/N AS 3085-018 (two for P/N 23032345 and one for P/N 6896895 or P/N 6889071) on the aft end of the spur adapter gearshaft per CEB-A-72-3143, revision 2 or later approved revision.

   2.2 Replace the turbine-to-compressor coupling P/N 23008080 with P/N 23032345 and fit two O-rings P/N AS 3085-018 on the aft end of the spur adapter gearshaft per Allison CEB-A-72- 3135, revision 1 or later approved revision.

2.3 Modify the spur adapter gearshaft assembly P/N 23005276 per Allison CEB 72-3100.

Modify the engine compressor and gearbox assemblies to include the roller bearing configuration at the 2 1/2 bearing location per Allison CEB 72-3059, revision 4 or later approved revision.

Replace turbine-to-compressor-couplings P/N 6896895 or P/N 6889071 with P/N 23032345 and install two O-rings P/N AS 3085-018 on the aft end of the spur adapter gearshaft per Allison CEB-A-72-3135, revision 1 or later approved revision.

2.4 Modify the turbine-exhaust-collector per Allison CEB 72-3096, revision 1 or later approved revision.
(FAA AD 84-24-54R2 refers)

Compliance: 1.1 Replace couplings P/N 23008080 before further flight or accomplish alternative temporary compliance per requirement 1 and replace coupling with P/N 23032345 at the next turbine repair/overhaul shop visit, or within the next 12 months, whichever occurs sooner.

1.2 & 2.1 Within the next 50 hours TIS, unless already accomplished within the last 250 hours TIS, and thereafter at intervals not to exceed 300 hours TIS since the last inspection.

1.3 & 2.3 At the next engine repair/overhaul shop visit, when both the compressor and gearbox are disassembled to permit access, or within the next 12 months, whichever occurs sooner.

1.4 & 2.4 At the next turbine repair/overhaul shop visit, or within the next 12 months, whichever occurs sooner

2.2 Within the next 100 hours TIS, or at next turbine repair/overhaul shop visit, or within the next 2 months, whichever occurs sooner.

Effective Date: 26 June 2008

DCA/AL250/55 Outer Combustion Case Assembly – Inspection

Applicability: Model 250-C28 and -C30 series engines with an outer combustion case assembly P/N 6899237 or 23009569.

Requirement: To prevent cracks at the butt or seam weld on the outer combustion case P/N 6899237 and 23009569 progressing to a point where the case could rupture and cause a sudden loss of engine power, accomplish the following:

1. <u>For model 250-C28B, -C28C, -C30, -C30P, -C30R and -C30S engines</u>:

1.1 With the aid of a bright light and a mirror, inspect all of the outer combustion case welds which are located as follows:

a.) The horizontal butt welds on the outer surface and the welds between the air discharge tube attachment flanges and gas producer attachment flange on the forward side.

b.) Both forward and aft circumferential seam welds between the outer case and inner liner.

c.) The welds attaching the bosses of fuel nozzle, both combustion case drain valves and both igniter plugs.

If any cracks are found, the outer combustion case must be replaced before further flight.

Note 1: Pay particular attention to welds in areas defined in sub-paragraphs a.) where these horizontal welds meet the circumferential welds defined in sub-paragraph b.)

Note 2: Requirement 1.1 of this AD may be accomplished by adding the inspection requirement to the tech log. The visual inspection may be performed and certified under the provision in Part 43 Appendix A.1 (7) by the holder of a current pilot licence, if that person is rated on the aircraft, appropriately trained and authorised (Part 43, Subpart B refers), and the maintenance is recorded and certified as required by Part 43.

1.2 In addition to requirement 1.1 of this AD, inspect the areas of horizontal butt weld between the air discharge tube attachment flanges and gas producer attachment flange on the forward side of the outer combustion case as follows:

a.) NDT inspect the designated areas using dye penetrant, or

b.) Apply a soap solution to the designated areas and with the aid of a suitable power source turn the engine over to at least 20 percent N1 and inspect for bubbles to reveal cracks.

If any cracks are found, the outer combustion case must be replaced before further flight.

2. <u>For model 250-C30 and -C30S engines fitted to Sikorsky Model S-76A helicopters</u>:

Replace or modify the outer combustion case assembly P/N 6899237 and 23009569 with/to P/N 23030910 and 23030911, respectively, per Allison CEB-A-72-2113/3115 revision 2, or earlier/later approved revision.

3. <u>For model 250-C28B, -C28C, -C30, -C30P, -C30R and -C30S engines fitted any other aircraft other than a Sikorsky S-76A helicopter</u>:

Replace or modify the outer combustion case assembly P/N 6899237 and 23009569 with/to P/Ns 23030910 and 23030911, respectively, per Allison CEB-A-72-2113/3115.

(FAA AD 85-25-07R1 refers)

Compliance: 1.1 Before further flight and thereafter at every daily inspections until requirements 2 or 3 as applicable is accomplished.

1.2 Within the next 5 hours TIS, unless already accomplished within the last 20 hours TIS, and thereafter at intervals not to exceed 25 hours TIS from the last inspection, until requirements 2 or 3**,** as applicable, is accomplished.

2. Within the next 150 hours TIS or within the next 6 months, whichever occurs sooner.

3. At the next turbine repair or overhaul, or within the next 9 months, whichever occurs sooner.

Effective Date: 26 June 2008

DCA/AL250/56 Compressor Mount Assembly – Inspection

Applicability: Model 250-C28B engines, S/N CAC 70011 through to 70793, 70795, and
Model 250-C28C engines, S/N CAC 28001 through to 28021, and
Model 250-C30, -C30P, -C30S engines, S/N CAC 90001 through to 90822, and
Fitted with compressor mount assembly P/N 6896021, 6898966 or 6898611.

<u>Except model 250-C28 and -C30 series engines embodied with Allison Commercial Engine Bulletin CEB 72-2085/3085, revision 1, or later approved revision</u>.

Requirement: To prevent failure of the compressor mount that can cause misalignment and subsequent failure of compressor to turbine shafting spline joints which may lead to an inflight loss of power or disconnect of the gas producer turbine rotor with a subsequent inflight shutdown/overspeed uncontained turbine wheel failure, accomplish the following:

1. Inspect compressor mount assembly per the instructions of Allison CEB-A-72-2080/3081, dated 15 September 1982 or later approved revision.

If only one crack is found in the compressor mount assembly and the crack has not progressed beyond 3/8 inch of the edge of the mount sheet metal, the mount assembly can remain in service provided that the inspections per requirement 1 of this AD is accomplished at intervals not to exceed 25 hours TIS.

If one crack is found and the crack has progressed beyond 3/8 inch of the edge of the mount sheet metal, or if more than one crack is found of any length, the compressor mount assembly must be replaced before further flight.

2. Replace compressor mount assemblies P/N 6896021, 6898966 and 6898611 with P/N 23007217 per the instructions in Allison CEB 72-2085/3085, revision 1, dated 30 April 1985 or later approved revision.
(FAA AD 85-25-08 refers)

Compliance: 1. Within the next 100 hours TIS, unless already accomplished within the last 200 hours TIS, and thereafter at intervals not to exceed 300 hours TIS.

2. At the next compressor assembly overhaul or repair, or within the next 9 months, whichever occurs sooner.

Effective Date: 26 June 2008

DCA/AL250/57 Cancelled – FAA AD 2015-02-22 refers

Effective Date: 09 March 2015

The State of Design ADs listed below are available directly from the National Airworthiness Authority (NAA) websites. Links to NAA websites are available on the CAA website at https://www.aviation.govt.nz/aircraft/airworthiness/airworthiness-directives/links-to-state-of-design-airworthiness-directives/
If additional NZ ADs need to be issued when an unsafe condition is found to exist in an aircraft or aeronautical product in NZ, they will be added to the list below.

2015-02-22 Cancelled – FAA AD 2017-18-14 refers

Effective Date: 13 October 2017

DCA/AL250/58 No. 5 Engine Bearing with P/N M250-10106 – Replacement

Applicability: All model 250 series engines fitted with a No. 5 bearing with P/N M250-10106.

Requirement: To prevent failure of the engine No. 5 bearing, which could result in loss of engine power, replace the No. 5 bearing with a new part.
Accomplish the bearing replacement per the engine manufacturer instructions.

Note 1: Report any defects found to the CAA by completing a CA005 Defect Report form. Provide photographs and as much engineering detail as possible, and also retain the defective parts for analysis. The form can be obtained from http://www.caa.govt.nz/Forms/CA005D_Form.pdf The completed form can be emailed to the CAA at CA005@caa.govt.nz

Compliance: At 300 hours TTIS on bearing P/N M250-10106, or within the next 50 hours TIS, whichever occurs later, and thereafter at intervals not to exceed 300 hours TIS.

Note 2: The installation of a No. 5 bearing with an alternate approved P/N is a terminating action to the AD requirements.

Effective Date: 13 April 2016

*** 2017-18-14 Cancelled – FAA AD 2022-10-06 refers**

Effective: 28 June 2022

2018-13-01 Power Turbine Governor (PTG) Bearing Assembly P/N 2544198

Applicability: Rolls-Royce Corporation (RRC) 250-C10D, 250-C18, 250-C18A, 250-C18B, 250-C18C, 250-C19, 250-C20, 250-C20B, 250-C20C, 250-C20F, 250-C20J, 250-C20R, 250-C20R/1, 250-C20R/2, 250-C20R/4, 250-C20S, 250-C20W, 250-C28, 250-C28B, 250-C28C, 250-C30, 250-C30G, 250-C30G/2, 250-C30M, 250-C30P, 250-C30S, and 250-C30U turboshaft engines fitted with power turbine governor (PTG) bearing assembly P/N 2544198.

Effective: 16 August 2018

DCA/AL250/59 Fuel Nozzle Assembly Screen Filter – Inspection

Applicability: All Rolls-Royce Allison 250 series engines fitted with a fuel nozzle assembly P/N M250-10603.

Requirement: To prevent reduced fuel flow due to the possible installation of a fuel nozzle with an old design screen filter, which could result in loss of engine power, or engine shutdown, inspect the fuel nozzle screen as follows:

Remove the fuel line from the fuel nozzle assembly and inspect the aft end of the screen filter through the fuel inlet of the nozzle.

If the aft end of the screen filter is constructed of gauze mesh, then replace the fuel nozzle before further flight.

If the aft end of the screen filter has a solid metal disc, then no further action is required.

If the inspection through the fuel inlet of the nozzle assembly cannot determine that the aft end of the screen filter has a solid metal disc, then replace the fuel nozzle before further flight.

Affected fuel nozzles with an old design fuel screen (i.e. the screen completely constructed of gauze mesh, including the aft end of the screen), must not be fitted to any engine.

Report any defects found to the CAA by completing a CA005 Defect Report form. Provide photographs and as much engineering detail as possible. The form can be obtained from http://www.caa.govt.nz/Forms/CA005D_Form.pdf

The completed form can be emailed to the CAA at CA005@caa.govt.nz

Note: New design fuel nozzle assemblies have a screen filter with a solid metal disk at the aft end of the screen filter. New design fuel nozzles have a screen filter with P/N 139968.

The screen filter on the left of the photo is the new design screen filter, which has a solid metal disc at the aft end of the screen filter.

The screen filter on the right of the photo is the old design screen filter, which is completely constructed of gauze mesh, including the aft end of the screen – Replace before further flight.

Compliance: Within the next 25 hours TIS.

Effective Date: 7 March 2019

DCA/AL250/60B Engine Compressor Modules - Inspection

Applicability: All Rolls-Royce Allison 250 series engines.

Note 1: DCA/AL250/60B revised to add C47 compressor module serial number (S/N) CAC44094 to Table 2 in the AD requirements.

Background: A recent audit has determined that compressor module inspections and repairs may not have been carried out at overhaul in accordance with approved Original Equipment Manufacturer (OEM) procedures.

Requirement: To prevent possible engine failure, accomplish the following:

1. Review the engine logbooks and determine if a compressor module with a Serial Number (S/N) listed in Tables 1 and 2 is installed in the engine.
2. Remove Rolls-Royce Allison C20B series and C20R compressor modules with a S/N listed in Table 1 from service before further flight.
3. Remove Rolls-Royce Allison C18 series, C28 series, C30 series and C47 compressor modules with a S/N listed in Table 2 (except S/N CAC44094) from service within the next 50 hours TIS from 12 March 2020 (the effective date of DCA/AL250/60), or by 12 April 2020, or at the next engine shop visit, whichever is the sooner.

   Remove C47 compressor module S/N CAC44094 from service, within the next 50 hours TIS, or by 4 June 2020, or at the next engine shop visit, whichever is the sooner
4. All affected Rolls-Royce Allison C20B series and C20R compressor modules must be sent to an approved maintenance organisation to be assessed in accordance with OEM specifications, before returning to service.

   Compressor rotor wheels in the position numbers listed in Table 1 must be replaced before returning the compressor module to service.
5. All affected Rolls-Royce Allison C18 series, C28 series, C30 series and C47 compressor modules must be sent to an approved maintenance organisation to be assessed in accordance with OEM specifications, before returning to service.

   Compressor impellers must be replaced, or may only be returned to service through an approved repair scheme before returning the compressor module to service.

Note 2: The primary safety concern with C18, C28, C30 and C47 series compressor modules relates to unauthorized drilling of compressor impellers for balancing.

Note 3: The primary safety concern with C20B and C20R series compressor modules relates to blending repairs on compressor rotor wheels with the lack of shot peening.

Table 1: Affected C20B and C20R compressor modules.

Affected Compressor Module Serial Numbers (S/N):			
C20B series		**C20R series**	
Module S/N:	**Compressor Rotor Wheel Position Number:**	**Module S/N:**	**Compressor Rotor Wheel Position Number:**
CAC23900	1, 2, 3 & 4.	CAC15280	1
CAC30243	1	CAC15850	1 & 4.
CAC30972	1	CAC15973	1 & 4.
CAC31261F	1	CAC28209	3 & 4.
CAC31394	To be advised (TBA).		
CAC32128	2, 3 & 4.		
CAC33247	1 & 6.		
CAC33931	1 & 2.		
CAC34205	TBA.		
CAC35463	4		
CAC36132	2, 3, 4, & 6.		
CAC37795	1		
CAC37814	1, 2, 3, 4 & 5.		
CAC37978	1		
CAC38521	TBA.		
CAC39053	TBA.		
CAC40090	1		
CAC40093	1		

CAC40446 CAC40483 CAC40560 CAC41262 CAC41846 CAC41917 CAC42465 CAC43498	TBA. TBA. 1 & 5. 1 TBA. 1 1 & 4. 1 & 5.		

Table 2: Affected C18, C28, C30 and C47 compressor modules.

Affected Compressor Module Serial Numbers:			
C18 series	**C28 series**	**C30 series**	**C47 series**
CAC21705B	CAC28017 CAC28022 CAC28048 CAC28119 CAC70026 CAC70243 CAC70779	CAC28046 CAC90011 CAC90052 CAC90069 CAC90507 CAC90719 CAC91119 CAC91305 CAC91311 CAC91507 CAC91607 CAC91623 CAC91635 CAC91820 CAC98516 CAC98537	**CAC44094** CAC44293 CAC44294 CAC45072 CAC45750

Note 4: For aircraft located away from a maintenance facility, one non-revenue ferry flight is permitted to return the aircraft to a maintenance base to carry out this AD.

Note 5: Operators, please advise the CAA if your engine has an affected module installed by emailing airworthinessdirectives@caa.govt.nz Please include the aircraft registration, the engine series, the engine S/N and the affected compressor module S/N.

Note 6: Maintenance providers, please report the results of all assessments of affected compressor modules to the CAA by emailing airworthinessdirectives@caa.govt.nz

Note 7: This AD is an interim action and further AD action may follow.

Compliance:

1. Before further flight.

2. Before further flight:

Remove Rolls-Royce Allison C20B series and C20R compressor modules with a S/N listed in Table 1 from service.

3. Within the next 50 hours TIS from 12 March 2020 (the effective date of DCA/AL250/60), or by 12 April 2020, or at the next engine shop visit, whichever is the sooner:

Remove Rolls-Royce Allison C18 series, C28 series, C30 series and C47 compressor modules with a S/N listed in Table 2 (except S/N CAC44094) from service.

Rolls-Royce Allison C47 compressor module S/N CAC44094:

Remove C47 compressor module S/N CAC44094 from service, within the next 50 hours TIS, or by 4 June 2020, or at the next engine shop visit, whichever is the sooner.

4. Before returning to service.

5. Before returning to service.

Effective Date:
DCA/AL250/60 - 12 March 2020
DCA/AL250/60A - 19 March 2020
DCA/AL250/60B - 4 May 2020

*** 2022-10-06 Turbine Wheels 3rd and 4th Stage - Inspection**

Applicability: Rolls-Royce Corporation (RRC) 250-C20, 250-C20B, 250-C20C (T63-A 720), 250-C20F, 250-C20J, 250-C20R, 250-C20R/1, 250-C20R/2, 250-C20R/4, 250-C20W, 250- C300/A1, and 250-C300/B1 model turboshaft engines fitted with either a 3rd-stage turbine wheel P/N 23065818, or a 4th-stage turbine wheel P/N 23055944 or RR30000240.

Effective: 28 June 2022