ENGINE-INSPECTION/CHECK

WARNING: FAILURE TO PROPERLY INSPECT AND/OR REPAIR INDIVIDUAL COMPONENTS/ PARTS OF THE ENGINE COULD RESULT IN AN ENGINE FAILURE.

1. General

The check and inspection requirements for the engine are categorized into Preflight and Postflight Checks, Scheduled Inspections and Special Inspections.

Preflight checks are given in Table 601. Preflight checks will be completed before the first flight of the day or before the next flight after extended maintenance.

Postflight checks are given in Table 602. Postflight checks will be completed after the last flight of the day.

Scheduled Inspections are given in Tables 603 - 608.

NOTE: Scheduled Inspections given in Table 606 can only be used if the operator is using an approved third generation (HTS) MIL-PRF-23699 oil.

Special Inspections are given in Table 607.

Detailed instructions and information on each item in check and inspection tables is in the referenced Operation and Maintenance Manual paragraphs.

NOTE: Inspections may require using a bright light (flashlight or equivalent) and a mirror.

NOTE: When applicable, review engine records for compliance with all mandatory Bulletins, Inspections and Airworthiness Directives.

NOTE: Review Engine Records for Time and/or Cycle Limited Parts. Review Components, Accessories and Modules time between overhaul.

NOTE: When local conditions dictate, it is the responsibility of the operator to increase the scope and/or frequency of checks and/or inspections to assure an adequate level of serviceability and safety.

Operating and maintenance personnel should be alert to recognize signs of engine abnormal operation that may be indicative of an impending engine difficulty. Any or all of the following engine abnormalities may be indicative of an impending engine difficulty and should be investigated to determine the cause and the required corrective action.

NOTE: Cracks in the horizontal and/or vertical fireside can be indicative of abnormally high engine vibration.

NOTE: Broken, cracked, or fretted fuel, lube, or air tubes can be indicative of abnormally high engine vibration.

NOTE: Polishing of tube assemblies in the tube clamping areas can be indicative of abnormally high engine vibration.

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Certificate of Compliance

Owner/Operator _____ Date _____

Aircraft Make/Model _____

S/N _____ Reg. No. _____ TSN _____

Engine S/N _____ TSN _____ TSO _____ Cycles _____

Type of Inspection _____

Signature _____

NOTE: Use this certificate or an equivalent means, to certify that all checks and inspections referenced in this certificate have been done. Attach completed check and inspection sheets. Keep this certificate and attached completed check and inspection sheets as a permanent part of the aircraft engine records.

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NOTE: N_1 rotor coastdown that is more rapid than what is normally experienced can be indicative of an impending engine difficulty. (Example: coastdown from idle in 4-5 seconds can be indicative of binding in the N_1 rotor system.)

NOTE: The following information will help when referencing chapter 72-00-00 in the following Tables (601-608).

Description and Operation starts on page 1.
Troubleshooting starts on page 101.
Servicing starts on page 301.
Adjustment/Test starts on page 501.
Inspection/Check starts on page 601.
Cleaning/Painting starts on page 701.
Storage Instructions starts on page 901.

TABLE 601

INITIAL	PREFLIGHT CHECKS	REFERENCE SECTION	REMARKS
1.	Check the general condition of the engine. Check all accessible areas for obvious loose bolts, broken or loose connections, security of attachment of all accessories, broken or missing safeties and evidence of fuel and oil leakage.		
2.	Check for and remove any foreign material which may be drawn into the compressor inlet.		
3.	Check oil supply level.	72-00-00 Table 101, Troubleshooting, Items 11 and 12.	Any sudden increase in oil consumption, refer to 72-00-00, Table 101, Troubleshooting. If the engine has been idle for more than 15 minutes, motor the engine for 30 seconds to scavenge any oil that may have drained into the gearbox from the oil tank. Failure to completely scavenge the oil from the gearbox will cause a false indication of high oil consumption.

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TABLE 602

INITIAL	POSTFLIGHT CHECKS	REFERENCE SECTION	REMARKS
	1. Check the general condition of the engine. Check all accessible areas for obvious loose bolts, broken or loose connections, security of attachment of all accessories, broken or missing safeties and evidence of fuel and oil leakage.		If the presence of engine oil is observed coming from the HMU drain port, replace the HMU drive shaft packing and check the encased seal in the gearbox housing cover assembly for integrity. Change seal if necessary.
	2. Visually check the compressor inlet and impeller for foreign object damage and dirt accumulation.	72-30-00 para 3. and para 4.B.	
	NOTE: Anytime the aircraft has been operated in an atmosphere known (or suspected) to be corrosive, perform a water rinse of the compressor.	72-30-00, para 4.A.	
	NOTE: Engines installed in airframes equipped with particle separators designed such that the compressor inlet is not readily visible, inspect the particle separator for missing elements. If elements are missing, inspect compressor inlet for damage	72-00-00, para 1.A.(1), Engine-Inspection/Check. 72-00-00, para 1.A.(2), Engine-Inspection/Check.	After engine operation in an erosive environment (sand or dust) check the compressor inlet for damage. After engine operation in snow or icing conditions, check the compressor inlet for damage.
	3. Check oil supply level.	72-00-00, Table 101, Troubleshooting.	If the engine has been idle for more than 15 minutes, motor the engine for 30 seconds

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TABLE 602 (cont)

INITIAL	POSTFLIGHT CHECKS	REFERENCE SECTION	REMARKS
	CAUTION: NORMAL ENGINES USE A MINIMAL AMOUNT OF OIL. HOWEVER, ANY SUDDEN INCREASE IN OIL CONSUMPTION IS INDICATIVE OF OIL SYSTEM PROBLEMS AND MUST BE CORRECTED.		to scavenge any oil that drained into the gearbox from the oil tank. Failure to completely scavenge the oil from the gearbox will cause a false indication of high oil consumption. Some aircraft may have to be run to properly scavenge oil from the gearbox (Ref. Aircraft Manual.)
	NOTE: Check oil supply level within 15 minutes of engine shutdown.		
	4. Perform a general visual inspection of the outer combustion case (sheet metal and weld seams) for cracks. No cracks are allowed. Pay particular attention to the weld seams in the area of the igniter plugs, dummy plug, drain valves, fuel nozzle bosses, braze patch (AREA A and AREA B), and adjacent areas for cracks.	72-40-00, Figure 203.	
	5. Check for extension of impending oil filter bypass indicator on the CEFA. If the indicator is extended, examine and clean the engine oil filter. Examine the scavenge oil filter. If contamination is found, replace the scavenge oil filter (CEFA). If no contamination is found, reinstall the scavenge oil filter with new packing, and manually reset the indicator. If the CEFA bypass indicator is extended and contamination is found in the scavenge oil filter in CEFA, replace/clean the oil cooler, oil tank, and lubrication lines (Ref. the airframe manual instructions). Drain and replace the engine oil.	72-60-00, para 1.E.	The impending oil filter bypass indicator can extend during a start of a cold soaked engine, which gives a wrong indication of a dirty oil filter. If the impending filter bypass indicator is extended, run the engine until the oil is at operating temperature and push in the indicator button. If the button remains in throughout the normal speed range of the engine, the filter does not require replacement.
	NOTE: The scavenge oil filter cannot be cleaned.		

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TABLE 602 (cont)

INITIAL		POSTFLIGHT CHECKS	REFERENCE SECTION	REMARKS
	NOTE:	If metal contamination is found in the scavenge oil filter in CEFA and a chip light occurred within the previous 50 hours, take the applicable maintenance steps (Ref. para 8.E.(2), this section or 72-60-00, para 4.B.(2)).		
	6.	Check for extension of impending fuel filter bypass indicator.	73-10-02, para 2.B.	If indicator is extended, replace fuel filter.
	7.	If an ECU Fault Indication is noted while engine is running (FADEC FAIL, FADEC DEGRADE, or FADEC MAINT), or when engine is shutdown (FADEC MAINT - Advisory) perform troubleshooting.	77-50-00	Troubleshooting and correction of fault(s) is required before dispatch per Table 2 or 2A .

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TABLE 603

Inspection Checksheet

Owner _____ Date _____

A/C Make/Model _____ S/N _____ Reg. No. _____ TSN _____

Engine S/N _____ TSN _____ TSO _____

This inspection checksheet is to be used when performing scheduled inspections. This form can be locally reproduced and/or expanded to reflect the aircraft operating environment. Keep the completed sheets as a permanent part of the aircraft engine records. Detailed information regarding each inspection item is contained in the referenced Operation and Maintenance Manual paragraphs.

CAUTION: BEFORE UNDERTAKING ANY INSPECTION OR MAINTENANCE ACTION, CONSULT THE REFERENCED PARAGRAPHS OF THE OPERATION AND MAINTENANCE MANUAL. FAILURE TO FOLLOW THE RECOMMENDED INSTRUCTIONS IN THE MANUAL COULD RESULT IN EQUIPMENT DAMAGE OR DESTRUCTION, POSSIBLY RESULTING IN PERSONNEL DEATH OR INJURY.

Item	150 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
1	Inspect the engine for obvious loose bolts, broken or loose connections, security of mounting accessories, and broken or miss ing safeties. Check accessible areas for obvious damage and evidence of fuel and oil leakage. Inspect the slippage marks on all fuel, oil and air tube B-nuts to make sure that the nuts have not loosened.			
2	Inspect the compressor impeller leading edges for damage.	72-30-00, para 4.B.		
3	Clean the compressor, as required, with a chemical wash solution if dirt buildup is evident.	72-30-00, para 5.		
4	Without disassembly, inspect turbine, exhaust collector supports and the air tubes for cracks, buckling and general condition.	72-50-00, para 5.K.		
		72-40-00, para 2.B.(1)		
		72-40-00, Table 203		
5	Visually inspect the outer combustion case (OCC)(sheet metal and weld seams) for cracks. Pay careful attention to the weld seams in the area of the igniter plugs, dummy plug, drain valves, fuel nozzle bosses, armpit braze patch and adjacent areas. Use a bright light and mirror as necessary. The OCC does not have to be removed. Perform a Leak Tec check for an installed OCC and FPI for a removed OCC.	72-40-00, Para 2.B.(1), (2), (3) and (4)		

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TABLE 603 (cont)				
Item	150 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
6	Inspect the engine fuel system for evidence of leakage. Check condition and security of fittings and tubing.	73-00-00		
7	Inspect the engine mounts for condition and security.			
8	Inspect electrical harness for loose, chafed, frayed, or broken wires and loose connectors.			
9	Check oil supply level. If the engine has been idle for more than 15 minutes, motor the engine for 30 seconds to scavenge any oil that could have drained into the gearbox from the oil tank. Failure to completely scavenge the oil from the gearbox will cause a false indication of high oil consumption. See Post Flight Check No. 3.	72-00-00, Table 101 Troubleshooting, items 11 and 12.		
	CAUTION: NORMAL ENGINES USE A MINIMAL AMOUNT OF OIL. HOWEVER, ANY SUDDEN INCREASE IN OIL CONSUMPTION IS INDICATIVE OF OIL SYSTEM PROBLEMS AND MUST BE CORRECTED.			
	NOTE: Check oil supply level within 15 minutes of engine shutdown.			
10	Inspect for extension of scavenge oil filter bypass indicator on CEFA. If the bypass indicator is extended, examine/clean the engine oil filter and the scavenge oil filter. If contamination is found, replace the scavenge oil filter. If no contamination is found, reinstall the scavenge oil filter with new packing, and manually reset the indicator. If the CEFA bypass indicator is extended and contamination is found in the scavenge oil filter, replace/clean the oil cooler, oil tank, and lubrication lines (Ref. the airframe manual instructions). Drain and replace the engine oil, and manually reset the indicator. NOTE: If metal contamination is found in the scavenge oil filter in CEFA and a chip light occurred within the previous 50 hours, take the applicable maintenance steps (Ref. 72-00-00, para 8.E.(2), Engine Servicing or 72-60-00 para 4.B.(2)). NOTE: The scavenge oil filter cannot be cleaned.	72-60-00, para 1.E.		
11	Inspect for extension of impending fuel filter bypass indicator. If indicator is extended, replace fuel filter. Ground run engine to assure proper operation of control system.	73-10-02, para 2.B.		

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TABLE 603 (cont)

Item	150 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
12	Clean and inspect the fuel nozzle. Install fuel nozzle with proper number of spacers.	73-10-03		
13	Record component changes, inspections, and compliance with technical instructions as required. Report engine difficulties to Rolls-Royce and/or AMC on a Field Service Report (FSR) submitted on FAST @ <https://fast.aeromanager-online.com> as required.			
14	Inspect compressor scroll for cracks. Pay particular attention to welded areas.			
15	Clean the burner drain valve. Ensure that the airframe overboard is clear. Refer to aircraft manual for maintenance procedures.	72-40-00, para 3.		
16	Inspect the anti-icing solenoid valve and bleed air valve for loose, chafed, frayed or broken wires, loose connections and security of attachment.			
17	Inspect the horizontal and vertical firewall shields for cracks.	72-50-00, para 5.J.		
	NOTE: Continued sheet metal or tube cracking can be an indication of excessve engine, engine accessory, or airframe vibration.			
18	Check HMU for freedom of operation and full travel. Check for condition and security of all linkages.	73-21-01, para 1.B.		
19	Remove, clean, operationally test, and reinstall the magnetic drain plugs: a. Standard type - check the chip detector end of the plugs for cracks. b. Quick disconnect - inspect the locking device and inserts for wear. Torque 60-80 lb in. (6.8-9.0 N·m). No cracks are acceptable. Check each chip detector separately.	72-00-00, Engine Servicing, para 8.E.		
20	Inspect ignition lead for burning, chafing or cracking of conduit. Also, check for loose connectors and/or broken lockwire. Perform operational check of ignitors.	74-20-02 para 2. 74-20-01, para 2.B.		
21	Remove, inspect, clean and reinstall the oil filter. If excessive carbon is found in the filter, inspect the scavenge and pressure oil system. Refer to 72-50-00 para 5.E., 5.F., 5.G., 5.H., 6.A., and 6.B.	72-60-00.para 1.C.		
22	Measure and record power turbine support pressure oil nozzle flow from scavenge oil strut. Record and retain flow record. While motoring N_1 to 16-18% the minimum flow is 90cc in 15 seconds.	72-50-00, para 5.E.		
	Flow_____			
	Compare with previous flow. Any large deviation could indicate carbon buildup.			

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TABLE 603 (cont)

Item	150 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
	NOTE: Refer to M250-C47 series CSL-6038, Recommended Sequence, Engine Oil Change for additional instructions.			
23	HMU Shutdown Function. Record must indicate that shutdown per referenced section has been performed at least once each 150 hours.	72-00-00 para. 7.L, Normal Shutdown - AUTO MODE or para. 8.N, Shutdown, MANUAL MODE		
24	FADEC FAIL, MANUAL MODE Cockpit Lamp Test. Record must indicate that a cockpit check per referenced section has been performed at least once each 150 hours.	73-25-01 para. 4. FADEC MAINTENANCE PRACTICES-Cockpit Lamp Test		
25	HMU MANUAL MODE Operation Function. Record must indicate that a cockpit check per referenced section has been performed at least once each 150 hours.	72-00-00 para 7.C.(1) MANUAL MODE CHECK		
26	MGT indicating system check. During ground run with engine at 100% N_2, Monitor MGT using (MT) Maintenance Terminal Software, analog parameter page. Compare MT value with aircraft MGT gage. Must agree within 5° C. If not within limits, use thermocouple simulator to identify problem.	72-00-00 para 7.C. 72-00-00 para 3.E. 73-25-01 para 3		
27	Torque indicating system check During ground run with engine at 100% N_2, monitor torque (Q) using MT software analog parameter page. Compare MT value with aircraft torque gage. Must agree within 2 psi. If not within limits, use pressure tester to identify problem.	72-00-00 para 7.C. 73-25-01 para 3		
28	Permanent Magnet Alternator (PMA) check. Do the check to verify PMA and harnesses are working properly.	73-20-01 para 2.C.		
	FADEC Fault and Maintenance system check. FADEC must be free of all faults and maintenance actions.	73-25-01 para 2		

TABLE 604

Item	300 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
	In addition to the 150 hour inspection items, perform the following:			
1	Clean power turbine support scavenge oil strut.	72-50-00, para 5.F.		
2	Clean external sump.	72-50-00, para 5.F.		
3	Clean No. 1 bearing oil pressure reducer.	72-30-00, para 2.A. (1)		
4	Clean pressure oil fitting screen assembly.	72-50-00, para 5.F.		

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TABLE 604 (cont)

Item	300 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
	CAUTION: EXTREME CARE SHOULD BE EXERCISED TO PREVENT TWISTING OF OIL NOZZLE DURING REMOVAL. DO NOT ATTEMPT TO STRAIGHTEN OR REUSE IF TWISTED.			
5	Clean power turbine pressure oil nozzle.	72-50-00, para 5.F.		
6	Remove and disassemble fuel nozzle. Clean and inspect fuel nozzle filter assembly. Assemble and install fuel nozzle.	73-10-03		
7	Remove, inspect, and reinstall the turbine pressure oil check valve.	72-60-00, para 2.I.		
	NOTE: Check Valve P/N 23074872 and subsequent part numbers are not applicable to this inspection (these valves are considered "ON CONDITION").			
8	Inspect the rear engine mount for security and excessive bearing wear.	72-00-00, para 1.A., (3) Engine-Inspection/ Check.		
9	Drain the oil system and refill. Oil changed at: 300 hours: _____ 600 hours: _____ Maximum interval between oil changes is 300 hours or 6 months, whichever occurs first. This limit can be extended to 600 hours or 12 calendar months, whichever occurs first, if an approved high thermal stability oil (Third Generation) is used.	72-00-00, para 8.D., Engine Servicing.		
10	On power and accessory gearbox cover, check the applied torque on all turbine and exhaust collector support-to-gearbox retaining nuts. Torque must be 120-150 lb in. (14-17 N·m).	72-50-00, para 1.B.		
11	Inspect the thermocouple assembly (TOT/MGT).	77-20-01, para 2.B.		

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TABLE 605

Item	2000 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
	The following inspections are required every 2000 hours time since last inspection			
1	Remove and replace the fuel filter element. Before discarding filter, inspect for signs of contaminants. If contaminants are found, inspect the entire fuel system and clean if necessary.	73-10-02, para 2.		
2	Inspect the combustion liner.	72-40-00, para 1.C.		
3	Examine the outer combustion case for cracks using Leak-Tek and/or Fluorescent Penetrant Inspection (FPI).	72-40-00, para 2.B.(2) (3), and (4)		
4	Inspect the compressor discharge air tubes.	72-40-00, para 4.C.		
5	Inspect the spur adapter gearshaft, compressor rotor splined adapter and associated impeller bore.	72-30-00, para 4.B.(2), 4.C. and 4.E.		
6	Inspect the turbine to compressor coupling, turbine splined adapter, power turbine inner shaft and turbine shaft-to-pinion gear coupling Turbine to compressor coupling is part of the turbine assembly.	72-50-00, para 5.A. and 5.B.		
7	Visually examine the power drive train gears. Disassembly of the gearbox is not necessary for this inspection.	CSL 6134		
	NOTES: Not applicable for: Torquemeter gear part number 23084248 and subsequent Power take-off gear part number 23084249 and subsequent Pinion gear part number 23084247 and subsequent.			
	NOTES: The following inspections are recommended whenever the turbine or compressor is removed in-between the required 2000 hour inspection.			
	Anytime the compressor is removed from the engine, visually inspect the aft end of the spur adapter gearshaft for worn or damaged splines. Anytime the turbine is removed from the engine visually inspect the splines on the following items, turbine-to-compressor coupling, turbine splined adapter, power turbine outer shaft and turbine shaft-to-pinion gear coupling for worn or damaged splines. If spline wear or damage is observed the appropriate maintenance action is required. (Refer to items 5 and 6 above)			
	Inspection intervals must not exceed 2000 hours.			

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TABLE 606

Inspection Checksheet

Owner _____ Date _____

A/C Make/Model _____ S/N _____ Reg No. _____ TSN _____

Engine S/N _____ TSN _____ TSO _____

This inspection checksheet is to be used when performing scheduled inspections. This form can be locally reproduced and/or expanded to reflect the aircraft operating environment. Keep the completed sheets as a permanent part of the aircraft engine records. Detailed information regarding each inspection item is contained in the referenced Operation and Maintenance Manual paragraphs.

CAUTION: BEFORE UNDERTAKING ANY INSPECTION OR MAINTENANCE ACTION, CONSULT THE REFERENCED PARAGRAPHS OF THE OPERATION AND MAINTENANCE MANUAL. FAILURE TO FOLLOW THE RECOMMENDED INSTRUCTIONS IN THE MANUAL COULD RESULT IN EQUIPMENT DAMAGE OR DESTRUCTION, POSSIBLY RESULTING IN PERSONNEL DEATH OR INJURY.

NOTE: THIS INSPECTION CHECKLIST CAN ONLY BE USED IF THE OPERATOR IS USING AN APPROVED THIRD GENERATION (HTS) OIL.

NOTE: COMPLIANCE TO THE 150 HOUR AND 300 HOUR ITEMS IN THIS TABLE MUST BE PERFORMED AT LEAST EVERY 12 CALENDAR MONTHS OR BY HOURS, WHICHEVER OCCURS FIRST.

Item	150 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
1	Inspect for extension of scavenge oil filter bypass indicator on CEFA. If the bypass indicator is extended, examine/clean the engine oil filter and the scavenge oil filter. If contamination is found, replace the scavenge oil filter. If no contamination is found, reinstall the scavenge oil filter with new packing, and manually reset the indicator. If the CEFA bypass indicator is extended and contamination is found in the scavenge oil filter, replace/clean the oil cooler, oil tank, and lubrication lines (Ref. the airframe manual instructions). Drain and replace the engine oil, and manually reset the indicator. NOTE: If metal contamination is found in the scavenge oil filter in CEFA and a chip light occurred within the previous 50 hours, take the applicable maintenance steps (Ref. 72-00-00, para 8.E.(2), Engine Servicing or 72-60-00 para 4.B.(2)). NOTE: The scavenge oil filter cannot be cleaned.	72-60-00, para 1.E.		

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TABLE 606 (cont)

Item	150 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
2	Inspect for extension of impending fuel filter bypass indicator. If indicator is extended, replace fuel filter. Ground run engine to assure proper operation of control system.	73-10-02, para 2.B.		
3	Clean and inspect the fuel nozzle. Install fuel nozzle with proper number of spacers.	73-10-03		
4	HMU MANUAL MODE Operation Function. Record must indicate that a cockpit check per referenced section has been performed at least once each 150 hours.	72-00-00, para 7.C.(1) MANUAL MODE CHECK.		
5	Visually inspect the outer combustion case (OCC)(sheet metal and weld seams) for cracks. Pay careful attention to the weld seams in the area of the igniter plugs, dummy plug, drain valves, fuel nozzle bosses, armpit braze patch and adjacent areas. Use a bright light and mirror as necessary. The OCC does not have to be removed. Perform a Leak Tec check for an installed OCC and FPI for a removed OCC.	72-40-00, Para 2.B.(1), (2), (3) and (4)		
Item	300 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
	In addition to the 150 hour inspection items, perform the following:			
1	Inspect the engine for obvious loose bolts, broken or loose connections, security of mounting accessories, and broken or missing safeties. Check accessible areas for obvious damage and evidence of fuel and oil leakage. Inspect the slippage marks on all fuel, oil and air tube B-nuts to make sure that the nuts have not loosened.			
2	Inspect the compressor impeller leading edges for damage.	72-30-00, para 4.B.		
3	Clean the compressor, as required, with a chemical wash solution if dirt buildup is evident.	72-30-00, para 5.		
4	Without disassembly, inspect turbine, exhaust collector supports and the air tubes for cracks, buckling and general condition.	72-50-00, para 5.K. 72-40-00, para 2.B.(1) 72-40-00, Table 203		
5	Inspect the engine fuel system for evidence of leakage. Check condition and security of fittings and tubing.	73-00-00		
6	Inspect the engine mounts for condition and security.			

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TABLE 606 (cont)

Item	300 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
7	Inspect electrical harness for loose, chafed, frayed, or broken wires and loose connectors.			
8	Check oil supply level. If the engine has been idle for more than 15 minutes, motor the engine for 30 seconds to scavenge any oil that could have drained into the gearbox from the oil tank. Failure to completely scavenge the oil from the gearbox will cause a false indication of high oil consumption. See Post Flight Check No. 3.	72-00-00, Table 101 Troubleshooting, items 11 and 12.		
	CAUTION: NORMAL ENGINES USE A MINIMAL AMOUNT OF OIL. HOWEVER, ANY SUDDEN INCREASE IN OIL CONSUMPTION IS INDICATIVE OF OIL SYSTEM PROBLEMS AND MUST BE CORRECTED.			
	NOTE: Check oil supply level within 15 minutes of engine shutdown.			
9	Inspect compressor scroll for cracks. Pay particular attention to welded areas.			
10	Clean the burner drain valve. Ensure that the airframe overboard is clear. Refer to aircraft manual for maintenance procedures.	72-40-00, para 3.		
11	Inspect the anti-icing solenoid valve and bleed air valve for loose, chafed, frayed or broken wires, loose connections and security of attachment.			
12	Inspect the horizontal and vertical firewall shields for cracks.	72-50-00, para 5.J.		
	NOTE: Continued sheet metal or tube cracking can be an indication of excessive engine, engine accessory, or airframe vibration.			
13	Check HMU for freedom of operation and full travel. Check for condition and security of all linkages.	73-21-01, para 1.B.		
14	Remove, clean, operationally test, and reinstall the magnetic drain plugs: a. Standard type - check the chip detector end of the plugs for cracks. b. Quick disconnect - inspect the locking device and inserts for wear. Torque 60-80 lb in. (6.8-9.0 N·m). No cracks are acceptable. Check each chip detector separately.	72-00-00, Engine Servicing, para 8.E.		
15	Inspect ignition lead for burning, chafing or cracking of conduit. Also, check for loose connectors and/or broken lockwire. Perform operational check of ignitors.	74-20-02 para 2. 74-20-01, para 2.B.		

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TABLE 606 (cont)

Item	300 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
16	Remove, inspect, clean and reinstall the oil filter. If excessive carbon is found in the filter, inspect the scavenge and pressure oil system. Refer to 72-50-00 para 5.E., 5.F., 5.G., 5.H., 6.A., and 6.B.	72-60-00.para 1.C.		
17	Measure and record power turbine support pressure oil nozzle flow from scavenge oil strut. Record and retain flow record. While motoring N_1 to 16-18% the minimum flow is 90cc in 15 seconds.	72-50-00, para 5.E.		
	Flow_____			
	Compare with previous flow. Any large deviation could indicate carbon buildup.			
	NOTE: Refer to M250-C47 series CSL-6038, Recommended Sequence, Engine Oil Change for additional instructions.			
18	HMU Shutdown Function. Record must indicate that shutdown per referenced section has been performed at least once each 300 hours.	72-00-00, para. 7.L, Normal Shutdown - AUTO MODE or para. 8.N, Shutdown, MANUAL MODE.		
19	FADEC FAIL, MANUAL MODE Cockpit Lamp Test. Record must indicate that a cockpit check per referenced section has been performed at least once each 300 hours.	73-25-01, para. 4. FADEC MAINTENANCE PRACTICES-Cockpit Lamp Test.		
20	MGT indicating system check. During ground run with engine at 100% N_2, Monitor MGT using (MT) Maintenance Terminal Software, analog parameter page. Compare MT value with aircraft MGT gage. Must agree within 5°C (41°F). If not within limits, use thermocouple simulator to identify problem.	72-00-00, para 7.C. 72-00-00, para 3. E. 73-25-01, para 3.		
21	Torque indicating system check During ground run with engine at 100% N_2, monitor torque (Q) using MT software analog parameter page. Compare MT value with aircraft torque gage. Must agree within 2 psi (13.78 kPa). If not in limits, use pressure tester to identify problem.	72-00-00, para 7.C. 73-25-01, para 3.		
22	FADEC Fault and Maintenance system check. FADEC must be free of all faults and maintenance actions.	73-25-01, para 2.		
23	Clean power turbine support scavenge oil strut.	72-50-00, para 5.F.		
24	Clean external sump.	72-50-00, para 5.F.		
25	Clean No. 1 bearing oil pressure reducer.	72-30-00, para 2.A. (1)		

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TABLE 606 (cont)				
Item	300 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
26	Clean pressure oil fitting screen assembly.	72-50-00, para 5.F.		
	CAUTION: EXTREME CARE MUST BE EXERCISED TO PREVENT TWISTING OF OIL NOZZLE DURING REMOVAL. DO NOT ATTEMPT TO STRAIGHTEN OR REUSE IF TWISTED.			
27	Clean power turbine pressure oil nozzle.	72-50-00, para 5.F.		
28	Remove and disassemble fuel nozzle. Clean and inspect fuel nozzle filter assembly. Assemble and install fuel nozzle.	73-10-03		
29	Remove, inspect, and reinstall the turbine pressure oil check valve.	72-60-00, para 2.I.		
	NOTE: Check Valve P/N 23074872 and subsequent part numbers are not applicable to this inspection (these valves are considered "ON CONDITION").			
30	Inspect the rear engine mount for security and excessive bearing wear.	72-00-00, para 1.A., (3) Engine-Inspection/ Check.		
31	Drain the oil system and refill. Oil changed at: 300 hours: _____ 600 hours: _____ Maximum interval between oil changes is 300 hours or 6 months, whichever occurs first. This limit can be extended to 600 hours or 12 calendar months, whichever occurs first, if an approved high thermal stability oil (Third Generation) is used.	72-00-00, para 8.D., Engine Servicing.		
32	On power and accessory gearbox cover, check the applied torque on all turbine and exhaust collector support-to-gearbox retaining nuts. Torque must be 120-150 lb in. (14-17 N·m).	72-50-00, para 1.B.		
33	Record component changes, inspections, and compliance with technical instructions as required. Report engine difficulties to Rolls-Royce and/or AMC on a Field Service Report (FSR) submitted on FAST @ <https://fast.aeromanager-online.com> as required.			
34	Inspect the thermocouple assembly (TOT/MGT).	77-20-01, para 2.B.		
35	Visually inspect the outer combustion case (OCC) (sheet metal and weld seams) for cracks. Pay careful attention to the weld seams in the area of the igniter plugs, dummy plug, drain valves, fuel nozzle bosses, armpit braze patch and adjacent areas. Use a bright light and mirror as necessary. The OCC does not have to be removed. Perform a Leak Tec check for an installed OCC and FPI for a removed OCC.	72-40-00, Para 2.B.(1), (2), (3) and (4)		

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TABLE 606 (cont)

Item	2000 HOUR INSPECTION	REFERENCE SECTION	✓	Initial
	The following inspections are required every 2000 hours time since last inspection			
1	Remove and replace the fuel filter element. Before discarding filter, inspect for signs of contaminants. If contaminants are found, inspect the entire fuel system and clean if necessary.	73-10-02, para 2.		
2	Inspect the combustion liner.	72-40-00, para 1.C.		
3	Examine the outer combustion case for cracks using Leak-Tek and/or Fluorescent Penetrant Inspection (FPI).	72-40-00, para 2.B.(2) (3), and (4)		
4	Inspect the compressor discharge air tubes.	72-40-00, para 4.C.		
5	Inspect the spur adapter gearshaft, compressor rotor splined adapter and associated impeller bore.	72-30-00, para 4.B.(2), 4.C. and 4.E.		
6	Inspect the turbine to compressor coupling, turbine splined adapter, power turbine inner shaft and turbine shaft-to-pinion gear coupling. Turbine to compressor coupling is part of the turbine assembly.	72-50-00, para 5.A. and 5.B.		
7	Visually examine the power drive train gears. Disassembly of the gearbox is not necessary for this inspection.	CSL 6134		
	NOTES: Not applicable for: Torquemeter gear part number 23084248 and subsequent Power take-off gear part number 23084249 and subsequent Pinion gear part number 23084247 and subsequent.			
	NOTES: The following inspections are recommended whenever the turbine or compressor is removed in-between the required 2000 hour inspection.			
	Anytime the compressor is removed from the engine, visually inspect the aft end of the spur adapter gearshaft for worn or damaged splines. Anytime the turbine is removed from the engine visually inspect the splines on the following items, turbine-to-compressor coupling, turbine splined adapter, power turbine outer shaft and turbine shaft-to-pinion gear coupling for worn or damaged splines. If spline wear or damage is observed the appropriate maintenance action is required. (Refer to items 5 and 6 above)			
	Inspection intervals cannot exceed 2000 hours.			

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A. Checks and Inspections

The following items are details of checks in Table 602, Postflight Checks, and Tables 603, 604, 605 and 606, Scheduled Inspections. These items are referenced in the Section column of the applicable inspection.

(1) Erosion Inspection

If the aircraft is subjected to sand or dust ingestion, then inspect the compressor for erosion and monitor performance.

NOTE: If the aircraft is subjected to sand or dust ingestion, periodic compressor erosion inspection is recommended. The frequency of the inspection should be based on the degree of ingestion and condition of the compressor at the last inspection. The need for more frequent compressor wash may also be indicated.

(2) Snow Ingestion Inspection

Inspect the engine for snow, ice, or water damage as follows:

(a) Obtain access to the compressor inlet but do not disassemble any engine parts.

NOTE: Replace the compressor assembly if any mechanical damage, distortion, or bending is detected on the compressor front support struts or on the impeller.

(3) Rear Engine Mount Inspection (300 hr intervals)

Inspect the bearing in the rear engine mount for looseness every 300 hours. Send the rear mount to an overhaul facility for bearing replacement if any of the following wear limits are exceeded.

(a) Axial movement . . . . . 0.03 in. (0.76 mm)

(b) Diametrical movement . . . . . 0.012 in. (0.30 mm) (any plane)

(c) Bearing outer ring-to-bore . . . . . No looseness allowed

B. Special Inspections

The following items are details of checks in Table 607, Special Inspections, and are referenced in the Section column of the applicable inspection.

(1) Hard Landing Limits

(a) The M250 engine is capable of sustaining load forces during abnormal landings up to 10g without any detrimental effect. When forces of 10g or less are experienced, the engine need not be removed from the aircraft for any special inspection as long as it is free of any external damage. Engines, and FADEC systems that have sustained landing load forces exceeding 10g must be removed and sent to an overhaul facility.

(b) There are various airframe structural components that can be used to determine the landing impact force experienced. The following criteria is furnished.

1 BELL 407
Bell defines a hard landing when the airframe landing skids and cross tubes deform to a degree that the cabin fuselage touches (or shows evidence of having touched) the ground.

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TABLE 607

INITIAL	SPECIAL INSPECTIONS	REFERENCE SECTION	REMARKS
	1. Hard landing.	72-00-00, para 1.B. (1), Engine-Inspection Check.	
	2. Sudden stoppage of rotor.	72-00-00, para 1.B.(2), Engine-Inspection/Check.	Refer also to aircraft manufacturer's maintenance instructions.
	3. Foreign object damage.	72-30-00, para 4.	
	a. Inspect the compressor.		
	b. Inspect the first-stage turbine wheel blades, first-stage turbine nozzle, and nozzle shield.	72-50-00, para 5.C. and 5.D.	
	4. Operation with inlet restricted.	72-00-00, para 1.B.(3), Engine-Inspection/Check.	
	5. Engine Submerged	72-00-00, para 1.B.(4), Engine-Inspection/Check	
	6. Overtemperature operation. After engine operation at temperatures exceeding the operating limits, inspect the following:	72-00-00, Table 1, 2, 3, or para 3.D, Engine-Description and Operation	
	a. Verify accuracy of MGT indicating system (MGT).	77-20-01, para 2.	If either the turbine 1st-stage wheel or 1st-stage nozzle is rejected because of overtemperature, then the complete turbine (gas producer and power turbine) must be removed and sent to an authorized/approved maintenance, repair, or overhaul facility for inspection. Note the reason for removal, including the time and temperature and attach the tag to the engine prior to shipment.
	b. Inspect thermocouples.	77-20-01, para 2.	
	c. Inspect first-stage turbine wheel blades, first-stage turbine nozzle, and nozzle shield.	72-50-00, para 5.C. and 5.D.	If either the turbine 1st-stage wheel or 1st-stage nozzle is rejected because of overtemperature, then the complete turbine (gas producer and power turbine) must be removed and sent to an authorized/approved maintenance, repair, or overhaul facility for inspection. Note the reason for removal, including the time and temperature and attach the tag to the engine prior to shipment.

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TABLE 607

INITIAL	SPECIAL INSPECTIONS	REFERENCE SECTION	REMARKS
	d. Inspect outer combustion case.	72-40-00, para 2.B	
	e. Inspect combustion liner.	72-40-00, para 1.C.	
	7. Hot start encountered.	72-00-00, Table 1, 2, 3, or para 3.D, Engine-Description and Operation	
	a. Verify accuracy of MGT indicating system (MGT)		Check engine/airframe interface of the MGT indicating system per airframe manual using a Barfield (or equivalent) system. Compare these results together with the reported temperature to more accurately determine the true temperature experienced. For example, if the aircraft gauge is indicating 30° low, when added to the reported temperature, an additional inspection may be required.
	b. Inspect thermocouples.	77-20-01, para 2.	
	c. Inspect first-stage turbine wheel blades, first-stage turbine nozzle, and nozzle shield.	72-50-00, para 5.C. and 5.D.	If either the turbine 1st-stage wheel or 1st-stage nozzle is rejected because of overtemperature, then the complete turbine (gas producer and power turbine) must be removed and sent to an authorized/approved maintenance, repair, or overhaul facility for inspection. Note reason for removal, including time and temperature and attach the tag to the engine prior to shipment.
	d. Inspect outer combustion case.	72-40-00, para 2.B.	
	e. Inspect combustion liner.	72-40-00, para 1.C.	
	8. Oil temperature limit exceeded.	72-00-00, para 8.B., Engine-Servicing.	
	9. Engine operated for more than 30 seconds without oil pressure	72-00-00, para 8.C., Engine-Servicing	Any time the engine is operated for more than 30 seconds without oil pressure, maintenance is required.

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TABLE 607 (cont)

INITIAL	SPECIAL INSPECTIONS	REFERENCE SECTION	REMARKS
	10. Oil contamination.		
	a. Metal contamination.	72-00-00, para 8.E.	
	b. Carbon contamination.	72-50-00, para 5.F.	
	11. Installed engine inactive more than 45 days, preserve fuel and oil systems.	72-00-00, para 9.A., 9.C., and 9.D., Engine-Servicing.	
	12. Lighting strike inspection.	72-00-00, para 1.B. (5), Engine-Inspection/Check.	
	13. High engine compartment temperature.	72-00-00, para 1.B. (6), Engine-Inspection/Check.	
	14. Compressor On Condition Inspection.	72-00-00, para 1.B. (7), Engine-Inspection/Check.	
	15. Power and Accessory Gearbox On Condition Inspection.	72-00-00, para 1.B. (8), Engine-Inspection/Check.	
	16. Power and Accessory Gearbox Cover on Condition Inspection.	72-00-00, para 1.B. (9), Engine-Inspection/Check	
	17. Outer Combustion Case On Condition Inspection.	72-00-00, para 1.B. (10), Engine-Inspection/Check.	
	18. Oil system contamination inspection after the first 50 hours of operation on new, repaired, or overhauled engine.	72-00-00 para 1.B. (11), Engine-Inspection/Check.	
	19. Engine Overspeed.	72-00-00, para 1.B. (13), Engine-Inspection/Check.	Any exceedance of an overspeed limit requires maintenance action.
	20. Engine Overtorque.	72-00-00, para 1.B. (14), Engine-Inspection/Check.	Any exceedance of an overtorque limit requires maintenance action.

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TABLE 607 (cont)

INITIAL	SPECIAL INSPECTIONS	REFERENCE SECTION	REMARKS

(2) Sudden Stoppage/Engagement Inspection

NOTE: The following specific items and/or functions are the minimum required actions when performing a sudden stoppage engagement inspection. Each incident should be judged on an “as required” basis possibly requiring more than these minimum requirements. Engines involved in sudden stoppage/engagement do not require overhaul automatically. This judgement is the responsibility of the service facility performing the inspection.

If the engine has to be removed from the airframe as a result of the main rotor sudden stoppage/engagement (Specified in paragraphs following), then the operator should take care to provide the Rolls-Royce Authorized Maintenance Center (AMC) with all the details about the incident. This information should include a description of damage to the airframe power train and mounts, as well as any other pertinent information.

(a) If the drive system component malfunctions or if an aircraft main rotor blade(s) strike an object and sustain damage which is repairable in accordance with aircraft manufacturer’s recommendations, perform the following:

1 Examine the magnetic drain plugs for metal. (Refer to 72-00-00, Engine Servicing, Magnetic Plug Inspection, para 8.E.)

2 Inspect the engine inlet for foreign objects.

3 Inspect the compressor for foreign object damage.

4 Motor the engine and check for unusual noise.

5 Operate the engine for 30 minutes on the ground. Examine the magnetic drain plugs for metal. (Refer to 72-00-00, Engine Servicing, Magnetic Plug Inspection, para 8.E.)

a On twin engine aircraft, single engine should be operated at 100% N_r and flat pitch.

b On single engine aircraft, engine should be operated at power required to make aircraft light on its skids.

(b) If a drive system component malfunctions or if the aircraft main rotor blade(s) strike an object during operation and sustain damage that requires the main rotor blade(s) or any aircraft main rotor blade(s) or any aircraft main rotor drive system component to be removed from service, remove the engine and perform the following:

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1 Examine the turbine shaft to pinion gear coupling and the power turbine outer shaft and pinion gear splines for evidence of damage, wear, and acceptability for further service. (Refer to Power Turbine Outer Shaft Spline Inspection, 72-50-00, para 5.I., and Power Train Pinion Helical Gear Inspection, 72-60-00, para 4.B.) Magnetic particle inspect the turbine shaft-to-pinion gear coupling.

2 Send the accessory gearbox to an overhaul facility for inspection per the M250-C47B Overhaul Manual, Pub. No. CSP22001

3 Inspect the compressor for foreign object damage.

4 After engine reassembly, operate the engine for 30 minutes on the ground. Examine the magnetic drain plugs for metal. (Refer to 72-00-00, Engine Servicing, Magnetic Plug Inspection, para 8.E.) Engine must be operated at power necessary to make the aircraft light on its skids.

NOTE: Test cell run may be substituted for the above 30 minute ground run.

(c) If a drive system component malfunctions or the aircraft main rotor blade(s) strike an object during operation and the engine or transmission mounts are fractured or misaligned, return engine to an Rolls-Royce AMC for complete overhaul with the following exceptions. The accessories listed below must be bench tested in accordance with the M250-C47B Overhaul Manual, Pub. No. CSP22001, and meet all overhaul limits or hard landing inspection limits if specified separately.

1 Bleed Valve

2 Hydromechanical Unit

3 Fuel Nozzle

4 Anti-Ice Valve

5 Full Authority Digital Electronic Control (FADEC)

(3) Compressor Inlet Air Blockage

Replace the compressor assembly if the engine has been operated with inlet air restricted due to foreign objects or materials which have become lodged in the compressor inlet. Tag the replaced compressor to show that the cause of removal was inlet air blockage and send to an Rolls-Royce approved repair facility for complete overhaul.

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Conditions which constitute blockage are power loss encountered following a restriction at the compressor inlet area while the engine is in operation. Blockage in flight can usually be verified by inspection after landing (blockage still exists). However, some blockage may be followed by ingestion before inspection can take place. Objects or materials which were large enough to have stopped at the inlet guide vanes before ingestion, or which causes a noticeable rise in MGT, can be considered to have caused compressor inlet blockage.

(4) Engine Submerged in Water

If the engine has been submerged in water, proceed as follows:

(a) Contact Rolls-Royce AMC for recommended disposition.

(b) Tag the engine indicating that it encountered submersion in water.

(5) Lightning Strike Inspection

Aircraft lightning strikes occur when the airframe can serve as a least-resistance bridge for the electrical bolt as it travels through the air. Consequently, aircraft extremities (tail pylon, blades, nose, landing gear, etc.) typically act as points of entry or exit.

However since the exact electrical path through the aircraft may not be readily traceable following a strike, the following guidelines are recommended:

(a) In the event of a lightning strike in the immediate vicinity of the engine(s) (as evidenced by charring, burn marks or pitting associated with electrical arcing on the engine cowl, compartment or inlet) remove the engine(s) prior to further flight and send them to an Rolls-Royce approved repair facility for detailed tear-down and inspection.

(b) Where the aircraft is known or suspected of having been involved in a lightning strike and entry/exit points either cannot be determined or appear remote to the engine(s), perform the following:

1 Inspect the engine compartment for evidence of lightning strike damage.

2 Manually rotate N_1 and N_2 systems and check for binding and abnormal noise.

3 Remove, clean, and examine the engine oil filter and chip detectors. (Refer to 72-60-00, para 1.C. and 72-00-00, Engine Servicing, Magnetic Plug Inspection, para 8.E.)

4 Operate the engine for 30 minutes on the ground and reexamine the magnetic drain plugs for metal. (Refer to 72-00-00, Engine Servicing, Magnetic Plug Inspection, para 8.E.) Engine must be operated at power necessary to make the aircraft light on its skids.

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5 Listen for abnormal noise on coastdown and abnormally short coastdown time.

6 No action is required for the HMU if it is involved in a lightning strike unless one of the following occurs:

a Evidence of a fault having occured as a result of the strike (such as illumination of a fault light).

b Physical damage, caused by the strike, occurs to the HMU or the harness connected to it.

In the event of a or b above the HMU shall be returned to CECO for complete functional test and relacement of damaged components as necessary.

7 No action is required for the ECU if it is involved in a lightening strike unless one of the following occurs:

a Evidence of a fault having occured as a result of the strike (such as illumination of a fault light).

b Physical damage, caused by the strike, occurs to one of the harness connected to the ECU.

In the event of a or b above the ECU shall be returned to CECO for complete functional unit and board level test and repair before being returned to service.

(6) High Engine Compartment Temperature

If evidence such as charred or burned paint, burned or melted electrical equipment, broken, leaking, or damaged customer bleed air plumbing, etc., exists (indicating that the engine may have been subjected to high temperature), conduct the following special inspection:

(a) Conduct a visual inspection of the engine exterior and engine compartment components for signs of heat damage. Replace damaged components or send them to an Rolls-Royce approved repair facility for further inspection.

(b) Visually inspect the engine electrical harness for heat damage. Replace harness if damaged.

(c) Remove magnetic chip detector plug electrical connector. Short the center pin to ensure cockpit indication is provided.

(d) Prior to returning aircraft to service, determine cause of high compartment temperature and repair as required. Check airframe manufacturer's exhaust system for proper adjustment and any discrepancies.

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(e) Check run engine(s) prior to the next flight in accordance with 72-00-00, Engine-Description and Operation, para 7., conduct the following checks and repair as necessary:

1 Anti-icing system operation.

2 Note erratic or abnormal N_1 and/or N_2 speed or MGT indications.

(7) On Condition Inspection - Compressor

Anytime the impeller is removed, it must be fluorescent penetrant inspected if the log book indicates more than 3500 hours since it was last fluorescent penetrant inspected. (Refer to M250-C47B Overhaul Manual, Pub. No. CSP22001 for inspection criteria.)

NOTE: Record compliance with this inspection in the appropriate section of the log book. Include date and hours.

(8) On Condition Inspection - Power and Accessory Gearbox

Anytime the gearbox housing is separated from the cover, and at an Authorized Maintenance Facility all gears must be Magnetic Particle Inspection (MPI) if the log book indicates that more than 3500 hours have elapsed since the gears were new or last magnafluxed. (Refer to M250-C47B Overhaul Manual, Pub. No. CSP22001, for inspection criteria.)

NOTE: Record compliance with this inspection in the appropriate section of the log book. Include date and hours.

(9) On Condition Inspection-Power and Accessory Gearbox Cover

Anytime the gearbox is disassembled at an Authorized Maintenance Facility for replacement of a failed No. 2-1/2, 3 or 4 bearing, perform an FPI or MPI for cracks in the area of the casting boss supporting the bearing. (Refer to the Engine Overhaul Manual, Pub. No. CSP22001, for inspection criteria.)

(10) On Condition Inspection-Outer Combustion Case

Anytime the outer combustion case is separated from the engine, visually inspect AREA A and AREA B, Figure 203, for cracks. Use a bright light in a dark room to inspect the inside of the part. If the outer combustion case is at an Authorized Maintenance Facility, inspect per Overhaul Manual 72-40-00, Table 2.

(11) Oil System Contamination Inspection

After first 50 hours of operation on new, repaired or overhauled engine, check oil filters for contamination. Also, if decreased oil pressure is noticed during operation, check engine oil filters for contamination at that time. If debris is found, proceed as follows:

(a) Drain oil system. Pay particular attention to metallic debris in the oil. Swab the oil tank and note foreign material.

(b) Flush engine oil system and clean oil filter.

(c) Reinstall filter and fill filter cavity with fresh oil. Fill oil tank with fresh oil.

(d) Do a 30-minute ground run at power. (Refer to 72-00-00, Engine Servicing, Magnetic Plug Inspection, para 8.E.)

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(e) After ground run, remove and inspect filter. If filter shows not accumulated debris, release aircraft for flight. During the next 30 hours of operation, check engine oil filter at approximately 10-hour intervals to determine if additional debris has accumulated in the filter.

(12) Engine Operated With No Oil Pressure

Engines operated for more than 30 seconds without oil pressure must be removed and sent to an Rolls-Royce authorized facility for disassembly and inspection as defined by the M250-C47B Engine Overhaul Manual, Publication CSP22001.

(13) Engine Overspeed

For a N_2 exceedance between 102.1% and 113.3% for greater than 15 seconds, remove turbine for inspection at Overhaul facility.

For a N_2 exceedance of Maximum Transient limit 113.3%, remove turbine for inspection at Overhaul facility. If power turbine speed exceeds 113.3%, replacement of 3rd and 4th stage turbine wheels is required and inspection of accessory gearbox is required.

For a complete loss of output shaft load, remove turbine and accessory gearbox for inspection at Overhaul facility.

For a N_1 exceedance greater than 10 seconds between 105% and 106.5% N_1, remove the turbine and compressor for inspection at Overhaul facility.

For a N_1 exceedance greater than 106.5% N_1, remove the turbine and compressor for inspection at Overhaul facility.

(14) Engine Overtorque

For exceedances exceeding 10 seconds between 590 ft-lbs and 637 ft-lbs, the engine must be removed and sent to an Overhaul facility for inspection.

For exceedances exceeding 2 seconds between 637 ft-lbs and 686 ft-lbs, the engine must be removed and sent to an Overhaul facility for inspection.

For exceedances exceeding 686 ft-lbs, the engine must be removed and sent to an Overhaul facility for inspection.

NOTE: Because torque is transmitted through the entire N2 drivetrain, it is necessary to inspect the turbine shaft to pinion gear coupling shaft and potentially the Power Turbine outer shaft, hence the need to return the engine to an overhaul facility.

C. Phase Inspection Recommendation.

(1) Introduction

The following provides Rolls-Royce's recommended engine inspection schedule for those operators that desire to maintain their aircraft on a progressive type inspection program. Other portions of this manual must also be consulted regarding the hour and cycle requirements on life limited parts and the recommended overhaul periods for the engine, modules, accessories, and components. (Refer to Table 608)

The inspection intervals specified in this program are intended to be the maximum allowable. If an operator finds more frequent compliance with certain portions is required due to local or operational conditions, it is the responsibility of that operator to adjust the compliance times accordingly.

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The inspection program as described is separated into Daily Inspections (preflight to be performed by flight or maintenance personnel), eight inspection events, and special inspections. At least one complete cycle (eight inspection events) must be completed every 12 calendar months to satisfy the FAA annual inspection requirement.

The inspection program may be started from new or after completion of a 300 hr inspection. Termination of the program is accomplished by the completion of a 300 hr inspection prior to reverting to the conventional 150/300 hr inspection program specified in this manual.

NOTE: Progressive inspection programs are organized to maintain the airworthiness of an aircraft. Engines, alone, cannot be inspected on a progressive inspection schedule. Consult the appropriate airframe manufacturer or their maintenance manuals for assistance in establishing an aircraft progressive inspection schedule.

Table 608

Phase Inspection Recommendation

M250-C47 Phase Inspection Recommendation	Daily	50	100	150	200	250	300	6 mo	12 mo	SPL
Visual inspection of engine for general condition, leads, cracks, security of hardware and equipment, compressor for FOD.	A	B	B	B	B	B	B			
Check oil level within 15 minutes of shutdown.	C									
Inspection compressor inlet ducting for foreign material that could be drawn into the compressor.	D									
Compressor rinse is required if operated in a corrosive environment (after last flight of the day).	E									
Inspect impending fuel and oil bypass indicator.	F									
Compressor wash as indicated by condition and performance.							G			
Clean combustion drain valve.				H			H			
Chip detectors - remove, clean, and test. Inspect locking pins of the quick disconnect type.				I			I			
Remove, inspect, and clean the engine oil filter screen.				J			J			
Measure and record oil flow from No. 6/7 bearing scavenge sump.				K			K			
Change oil (whichever occurs first).							L	L	L	
Clean No. 6/7 bearing scavenge oil strut.							M			
Clean No. 6/7 bearing pressure oil nozzle and screen.							N			
Clean No. 6/7 bearing external sump.							O			
Inspect and clean fuel nozzle.				P			P			
Rear engine mount visual inspection							Q			
Inspect No. 1 bearing pressure reducer							R			
Replace L.P. fuel filter element.										2000
N_1 Shaft Joint Inspections.										2000
Hard Landing Inspection										X
Sudden Stoppage of the Rotor System.										X
Foreign Object Damage.										X
Operation with inlet restricted										X
Engine Submerged										X
Turbine Overtemperature Indication										X
Oil Temperature Exceedance										X

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Table 608

Phase Inspection Recommendation (cont)

M250-C47 Phase Inspection Recommendation	Daily	50	100	150	200	250	300	6 mo	12 mo	SPL
Review Records for Compliance				S			S		S	

NOTE:
1. All inspections noted as "Daily" may be performed by pilots whom have received training and instruction on how to perform the "Daily" instructions properly. The "Daily" inspections could then be incorporated into the preflight or post flight inspections.
2. At least one 300 hr cycle must be completed every 12 months.
3. Consult appropriate paragraphs for specific inspection requirements.

(2) Description of Inspections

(a) This is a visual preflight inspection of the engine which is normally conducted by a pilot and is intended to be a visual inspection of the engine for general conditions, obvious fuel or oil leaks, general engine integrity, and inlet foreign object damage. This inspection does not require engine or airframe disassembly. Engine access is to be gained through the normal cooling access doors. The compressor inlet is not accessible on some installations due to particle separator installation. In this case, the pilot should assure himself of the integrity of the particle separator by looking for missing elements.

(b) This inspection is to be accomplished by a mechanic. The engine or airframe should be disassembled as required to gain adequate access to the engine to assure complete inspection.

	Requirement	Reference
1	Inspect the engine for obvious loose bolts, broken or loose connections, security of mounting accessories, and broken or missing safeties. Check accessible areas for obvious damage and evidence of fuel and oil leakage.	
2	Inspect the compressor impeller leading edges for damage.	72-30-00, para 4.B.
3	Clean the compressor, as required, with a chemical wash solution if dirt buildup is evident.	72-30-00, para 5.B.
4	Inspect electrical harness for loose, chafed, frayed, or broken wires and loose connectors.	
5	Inspect the engine fuel system for evidence of leakage. Check condition and security of fittings and tubing. Check HMU lever for freedom of operation and full travel. Check condition and security of all linkages.	73-21-01
6	Inspect the engine mounts for condition and security.	
7	Inspect compressor scroll for cracks. Pay particular attention to welded areas.	

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	Requirement	Reference
8	Inspect the anti-icing valve and solenoid valve for loose, chafed, frayed or broken wires, loose connections and security of attachment.	
9	Inspect the horizontal and vertical firewall shields for cracks.	72-50-00, para 5.J.
	NOTE: Continued sheet metal or tube cracking may be an indication of excessive engine, engine accessory, or airframe vibration.	
10	Inspect ignition lead for burning, chafing or cracking of conduit. Also, check for loose connectors and/or broken lockwire.	74-20-02, para 2.
11	Perform operational check of igniters.	74-20-01, para 2.B.
12	Record component changes, inspections, and compliance with technical instructions as required. Report engine difficulties to Rolls-Royce and/or AMC on a Field Service Report (FSR) submitted on FAST @ <https://fast.aeromanager-online.com> as required.	
13	Without disassembly, visually inspect turbine and exhaust collector supports and the air tubes for cracks, buckling and general condition.	72-00-00 Table 603 Item 4

(c) Flight or maintenance personnel must check the engine oil level within 15 minutes following engine shut down.

	Requirement	Reference
1	Check oil supply level within 15 minutes of engine shutdown.	72-00-00, Table 101.

NOTE: If the engine has been idle for more than 15 minutes, motor the engine for 30 seconds to scavenge any oil that may have drained into the gearbox from the oil tank. Failure to completely scavenge the oil from the gearbox will cause a false indication of high oil consumption. In some aircraft installation the engine must be started and run at idle for approximately one minute to assure proper gearbox scavenging before checking oil level if the aircraft has sat for more than 15 minutes.

CAUTION: NORMAL ENGINE USE A MINIMAL AMOUNT OF OIL. HOWEVER, ANY SUDDEN INCREASE IN OIL CONSUMPTION IS INDICATIVE OF OIL SYSTEM PROBLEMS AND MUST BE CORRECTED.

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(d) Flight or maintenance personnel should inspect the engine inlets prior to start up to assure the inlet plugs have been removed and there is no foreign material in the inlet that could be drawn into the compressor.

(e) Flight and/or maintenance personnel must conduct a compressor rinse after the last flight of the day.

	Requirement	Reference
1	Anytime the aircraft has been operated in an atmosphere known (or suspected) to be corrosive, perform a water rinse of the compressor.	72-30-00, para 5.A.

NOTE: Operators should be aware that salt laden air may be encountered for 75-150 miles inland under certain weather conditions. If there is any doubt about the conditions in which your engines are operated, the compressors should be given a daily water rinse. Water will not damage the engine but salt and chemicals will.

(f) Flight or maintenance personnel are to inspect fuel impending bypass indicators.

	Requirement	Reference
1	Inspect for extension of impending fuel filter bypass indicator.	73-10-02, para 1.

NOTE: If indicator is extended, replace fuel filter.

(g) Maintenance personnel must wash the engine compressor at least every 300 hours unless conditions dictate earlier compliance.

	Requirement	Reference
1	Wash compressor	72-30-00, para 5.B.

(h) Maintenance personnel are to clean and inspect the combustion drain valves.

Requirement	Reference
Inspect and clean the combustion drain valves.	72-40-00, para 3.

NOTE: Assure the airframe overboard drain lines are clear. Refer to airframe manual for procedures.

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(i) Maintenance personnel are to remove, inspect, clean, and test the engine chip detectors.

	Requirement	Reference
1	Remove, clean, operationally test, and reinstall the magnetic drain plugs: a Quick disconnect - inspect the locking pins and flanged inserts for wear.	72-00-00, Engine Servicing, para 8.E.

(j) Maintenance personnel are to remove, inspect for metal and carbon accumulation, clean, and reinstall the main engine pressure oil screen.

	Requirement	Reference
2	Remove, inspect, clean and reinstall the oil filter.	72-60-00, para 1.C. 72-00-00, para 8.C., Engine-Servicing.

NOTE: If excessive carbon is found in the filter, inspect the scavenge and pressure oil system.
Refer to 72-50-00 para 5.E., 5.F., 5.G., 5.H., 6.A., and 6.B.

(k) Maintenance personnel are to measure and record the oil flow from the No. 6/7 bearing scavenge strut, maintain N_1 speed at 16-18%.

	Requirement	Reference
1	Measure and record power turbine support pressure oil nozzle flow from scavenge oil strut. Record and retain flow record. Flow_____ Compare with previous flow. Any large deviation could indicate carbon buildup.	72-50-00, para 5.E.

(l) Maintenance personnel or flight personnel, provided complex aircraft disassembly is not required, may change the engine oil.

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PARA 1.C. (cont)

	Requirement	Reference
1	Drain the oil system and refill.	72-00-00, para 8.D. Engine-Servicing

NOTE: Please reference Inspections in Table 604, this section, for all change time limits.

(m) Maintenance personnel are to clean the No. 6/7 bearing power turbine scavenge strut.

	Requirement	Reference
1	Clean power turbine support scavenge oil strut	72-50-00, para 5.G.

NOTE: The flow check specified in item (k.) must be accomplished after compliance with (m), (n), and (0) at 300 hr.

(n) Maintenance personnel are to clean the No. 6/7 bearing external sump can.

	Requirement	Reference
1	Clean power turbine external sump can.	72-50-00, para 5.G.

(o) Maintenance personnel are to clean the power turbine pressure oil nozzle, screen, and fitting.

	Requirement	Reference
1	Clean pressure oil fitting & screen assembly.	72-50-00, para 5.F.
2	Clean power turbine pressure oil nozzle.	72-50-00, para 5.F.

CAUTION: EXTREME CARE SHOULD BE EXERCISED TO PREVENT TWISTING OF OIL NOZZLE DURING REMOVAL. DO NOT ATTEMPT TO STRAIGHTEN OR REUSE IF TWISTED.

(p) Maintenance personnel are to remove, inspect and clean the fuel nozzle.

	Requirement	Reference
1	Clean and inspect the fuel nozzle.	73-10-03

NOTE: Install fuel nozzle with proper number of spacers.

(q) Maintenance personnel are to inspect the rear engine mount for security and excessive bearing wear.

	Requirement	Reference
1	Inspect rear engine mount for security and excessive bearing wear.	72-00-00, para 1.A. (3), Engine-Inspection/Check

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(r) Maintenance personnel are to clean No. 1 bearing oil pressure reducer.

	Requirement	Reference
1	Clean No. 1 bearing oil pressure reducer.	72-30-00, para 2.A. (1)

(s) Maintenance personnel are to review engine records at least every 12 months (annual inspection) or 100 hours, whichever occurs first to assure compliance with the following:

1 All outstanding FAA Airworthiness Directives (AD Notes) have been complied with, including those which institute reoccurring inspections.

2 All outstanding Alert Commercial Engine Bulletins in accordance with their individual compliance requirements.

NOTE: Operators must contact Aviall, Inc. to assure distribution of the following M250 Engine publications.

E-mail: sales@aviall.com or 250pubs@aviall.com
Website: www.aviall.com

From North America and Canada:
Phone: 1 (800) AVIALL-1 (800-284-2551)
Fax: 1 (800) FAXAVIA (800-329-2842)

Internationally:
Phone: (972) 406-2310
Fax: (972) 406-2315

- Operation and Maintenance Manual revision service
- Illustrated Parts Catalog revision service
- Commercial Engine Bulletins
- Commercial Service Letters
- Installation Bulletins

3 All component and module changes are correctly noted in the engine logbook.

4 Accumulated hours and cycles must be reviewed against all part life limits to assure that neither the hour or cycle limit has not nor will not be exceeded prior to the next regularly scheduled inspection.

5 Review records for recommended TBO conformance on those components or modules with established overhaul periods.

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2000 Hour

To be performed by maintenance personnel.

	Requirement	Reference
1.	Remove and replace the low pressure fuel filter element.	73-10-02, para 2.
2.	Inspect N_1 shafting.	72-30-00, para 4.B.(2)
		72-30-00, para 4.C.
		72-30-00, para 4.E.
		72-50-00, para 5.B.

To ensure proper HMU start fuel scheduling subsequent to a maintenance operation which involves draining fuel from the engine fuel system - such as replacing the fuel filter or HMU, it is recommended that the air purge procedure described in chapter 73-00-00 be used.

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