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SERVICE INSTRUCTION

DATE: April 18, 1997

Service Instruction No. 1241C
(Supersedes Service Instruction No. 1241B)
Engineering Aspects are
FAA Approved

SUBJECT: Pre-Oiling Engine Prior to Initial Start

MODELS AFFECTED: All Textron Lycoming engines.

TIME OF COMPLIANCE: Prior to initial start after engine change, overhaul, oil cooler replacement or draining or any prolonged period of inactivity.

To avoid possible high speed bearing failure resulting from lack of lubrication during initial starts all aircraft engines should be pre-oiled prior to first start. Engines need not be pre-oiled after an oil change or whenever the oil lines have been disconnected. However, on dry sump engines after an oil change or whenever the oil lines have been disconnected it will be necessary to disconnect the oil inlet connection at the oil pump and drain a sufficient amount of oil from the tank to be certain there are no obstructions or air in the inlet line to the oil pump. The following procedure is intended to apply to wet sump and dry sump engines.

1. Fill the oil tank or sump to the proper level. In all turbocharged engines use only ashless dispersant oil conforming to specification MIL-L-22851 or SAEJ1899.

2. External oil tanks and turbocharged engines.

   a. On engines with external oil tanks, disconnect the oil inlet connection at the oil pump and drain a sufficient amount of oil to eliminate any possible obstructions or air in the inlet passage. Reinstall oil inlet connections to the oil pump.

   b. On turbocharged engines, disconnect the inlet lines at the turbocharger and the front lines to the exhaust valve guide oiler, if applicable. Also disconnect the engine air duct from the compressor housing inlet. Fill the turbocharger oil inlet port with clean engine oil and manually turn the compressor wheel several revolutions in both directions to coat all journal and bearing surfaces with oil. Reconnect the air duct.

3. For wet sump engines, except TIO-541-E series, fill the cooler with oil.

4. Remove one spark plug from each cylinder of the engine.

5. Place the mixture control in idle cut-off and the fuel selector or shut off in the “off” position. If the engine is not equipped with idle cut-off, open throttle to full open position and put fuel and ignition switches in “off” position.

6. Turn engine with starter (or external power source, if available) until oil is visible at the end of the oil lines disconnected in steps 2 and 3. Reconnect the oil lines. Turn engine with starter (or external power source, if available) until a minimum pressure of 20 lbs. is indicated on the oil pressure gage.

NOTE

If oil pressure is not attained after cranking 10-15 seconds, allow starter to cool.

7. Energize starter for 2 or more 10-15 seconds periods.

CAUTION

DO NOT ENERGIZE STARTER FOR PERIODS OF OVER 10-15 SECONDS. ALLOW TO COOL AFTER EACH ENERGIZING.

Lack of pressure build-up or rapid drop-off of pressure is an indication of the presence of air in the line and the engine is not being pre-oiled. To remedy this, repeat steps 2 and 3 and continue until oil pressure is indicated.

8. The line disconnected in step 2 may be reconnected after the oil pressure is attained and the oil is flowing from the disconnected lines.

9. Turn the engine with the starter for approximately 10 seconds to check for continued oil pressure.

10. Reinstall spark plugs and proceed with normal starting procedure which should not be later than three housing after pre-oiling.

11. When engine is started it should be run for about three minutes at approximately 1000 RPM for fixed wing applications, and idle RPM on helicopters before increasing power for other ground operations or take-off power.

CAUTION

ON TURBOCHARGED ENGINES MAINTAIN LOW SPEED OPERATION UNTIL PRESSURE HAS STABILIZED. OVERBOOST CAN OCCUR IF ABNORMAL OIL PRESSURES ARE PRESENT IN THE TURBOCHARGER CONTROL SYSTEM; DUE TO OIL BELOW MINIMUM OPERATION TEMPERATURE.