

DUNCAN INTELLIGENCE

• Edited by Ken Kuchenreuther & Dan Arrick • Fall 2001

Pratt & Whitney JT15D Oil Consumption Troubleshooting Tips

By Ken Kuchenreuther

Pratt & Whitney JT15D operators routinely contact Duncan Aviation with a variety of troubleshooting requests. One of the discrepancies we have helped with is excessive oil consumption. Here are some tips that may help determine the cause of oil consumption in the JT15D. As always, consult the appropriate maintenance manuals for proper procedures.

The first step is to remove the engine cowling and inspect the engine for obvious oil leaks and repair those as necessary. It would most likely take a large leak to significantly affect the oil consumption. Next, using a bright light source, carefully inspect the second stage low pressure turbine wheel and exhaust center cone for oil leakage in the #4 bearing area. Oil is supplied to the #4 bearing by the main oil pump. It is then scavenged out of the #4 bearing area along with sealing air by a scavenge section of the same pump. If the scavenge suction is insufficient, the bearing area could flood, pushing the oil past the labyrinth seal and out the exhaust. Visible oil streaking on the low turbine wheel and exhaust cone will result. To check this scavenge pump, it is necessary to remove the elbow at the rear left hand lower side of the bypass duct and connect a vacuum gauge to the oil scavenge line. Motor the engine and allow it to spool to maximum speed and make note of the Hg reading on the gauge. Ensure that a vacuum of 20 to 30" Hg is achieved and held momentarily.

Make sure to double check your connections and vacuum pump if the suction is not what it should be. If suction is too low, a replacement oil pump will be required.

If the suction is normal, remove the oil transfer tube going from the same elbow up to the #4 bearing and inspect it for coking on the inside of the tube. If a boroscope is available, inspect the inside of the #4 bearing housing and check for coking on the interior. Also, remove the plug from the exhaust cone and check for oil leakage by inspecting the area with a boroscope. If a boroscope is not available, shine a light source through the opening. If there is coking on the inside of the #4 bearing housing or evidence of an external oil leak, the bearing housing should be removed for repair.

Iridium Igniters

By Ken Kuchenreuther

Recently Pratt & Whitney, Canada issued a Commercial Support Program Notification dealing with the use of iridium-tipped igniter plugs for all JT15D engines in accordance with SB 7459. This SB indicates that the plugs can last twice as long as the regular plugs. To encourage their use, Pratt & Whitney is offering a one-time-per-engine program that terminates on November 30, 2001. The part, 3119400-01 (CH34659-3), is offered at the published list price less 50%. The Support Program is number A00013.

JT15D Oil Information

By Ken Kuchenreuther

We have had a few questions lately about "Third Generation" oils and hope this article will assist you. The approved "Third Generation" oils are Aero Shell Turbine Oil 560, Royco Turbine Oil 560, and Mobil Jet Oil 254. Oil companies claim that "Third Generation" oil is one that has thermal and oxidative stability when compared to typical type II, 5 centistoke oils. However, it is not recommended that you put this oil in at your next oil change without adhering to the following caution. The recommendation is that the switch from typical type II to "Third Generation" oils ONLY be done when an engine is new or freshly overhauled. If oil is changed at any other time the "Third Generation" oil may dislodge particles that the typical type II leaves behind and overwhelm the filter's capabilities.

Pratt & Whitney Service Bulletin 7001 covers more on this subject along with the applicable maintenance manual.

Name Change

By Ken Kuchenreuther

Exxon Turbo Oil 2380 will eventually become known as BP Turbo Oil 2380. This is due to the merger of Exxon and Mobile petroleum companies and Exxon's jet turbine oil business being sold to Air BP. These products with the same number may be used interchangeably in the future.

For JT15D technical info, we have the experts with whom you should speak.

Our JT15D Engine Teams consist of technicians with hundreds of combined years of experience.

Need technical advice? Call Duncan's JT15D Tech Rep, Ken Kuchenreuther, at 616.969.8486.

*In Lincoln, NE, contact **Jon Dodson** at
402.475.2611 or 1.800.228.4277*

*In Battle Creek, MI, contact **Dan Arrick** at
616.969.8400 or 1.800.525.2376*

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