

DUNCAN INTELLIGENCE

Dedicated to "Perfecting the Craft" • Edited by Jon Dodson • Summer '98

What Kind Of Oil Should I Be Using Anyway?

Should I stay with my trusty old Mobil Jet II or Exxon 2380? Or should I switch to the "improved" third generation Mobil Jet 254 or Aeroshell/Royco Turbine Oil 560?

Initially, there were a couple of schools of thought on this issue. The new oils are designed to provide a higher thermal resistance against coke formation over the typical Type II oils. Carbon seals number one and five are experiencing leakage due to coke formation at the seal interface. Temperatures at the seal interface exceed the coke formation threshold of Type II oils. Using the third generation oils will resist this coke formation.

The new oil also wants to dissolve any carbon deposits or coke that may have already formed around the seals. The result could be a soap sample coming back with high carbon grit noted, and a request for a resample. High filter weight can also be found. Usually, the resample indicates that everything is fine.

So should I wait until MPI/CZI or what? AlliedSignal publishes some informative Service Information Letters (SILs) which address this issue. SIL #F731-82 specifically recommends changing to one of the third generation oils as soon as practical, contrary to

any previous recommendations and even between major maintenance events.

What about MSP engines, you ask? MSP engines must have the new oil. When the new design carbon seals are installed, there is no longer any choice for MSP operators. The new oil must go in or the warranty is void.

For more info, please contact Jon Dodson or Cecil Sloan at 1.800.228.4277 or Dan Arrick at 1.800.525.2376.

I Smell Oil

Do you have an early morning smell of napalm in your pristine cabin? If so, the boss and other passengers are probably not impressed by the slimy synthetic smell; the blue tint in the air is probably a little disconcerting as well. What should you do?

The first thing we find helpful is to try and isolate which engine bleed air is contributing to the condition. This is not always the answer (because both engines may be contributing), but it often helps. Another thing pilots should take note of is, when is the smell at its worst? During the first start of the day, during take-off or at the top of descent? That type of information is useful.

The next thing that needs to happen is to have a qualified TFE73 1 technician perform some gearbox pressure checks. The

accessory gearbox pressure will tell the technician if the problem is in the #1 or #3 bearing carbon seal area. The transfer gearbox pressure will tell the technician if the #4 or #5 bearing carbon seal area is at fault.

Once the fault area is determined, a borescope inspection through the LP bleed port will, in many cases, demonstrate evidence of oil on the HP compressor impeller. Once that is determined, the engine will need to undergo a compressor access to repair the #4 and #5 carbon seals. The #1 and #3 carbon seals are field repairable, and in most every case, you can be back in the air in a couple of days.

Once the new carbon seals have been installed in the engine, it is not uncommon to see a slightly different oil pressure reading than observed previously. This is largely due to the combination of negative scavenge pump pressure in the fan gearbox that wasn't there before, combined with positive pump pressure. These total up to something different than you are used to observing. This is not a cause for alarm, the engine oil pressure should still fall within normal tolerance levels; it just won't be quite the same as before.

For more info, please contact Jon Dodson or Cecil Sloan at 1.800.228.4277 or Dan Arrick at 1.800.525.2376.

For TFE731 technical info, we have the experts with whom you should speak.

Our 731 Engine Teams consist of technicians with hundreds of combined years of experience.

Need technical advice? Call Duncan's 731 Tech Rep, Doug Alleman, at 402.479.1689

In Lincoln, contact **Cecil Sloan** or **Jon Dodson**
at **402.4752611** or **1.800.228.4277**

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