Report of the Month

This GTSIO-520 is no longer flying. What happened?

To learn more about where the elements are coming from, click here .

ELEMENTS IN PARTS PER MILLION								
	MI/HR on Oil	22	UNIT/ LOCATION AVERAGES					UNIVERSAL AVERAGES
	MI/HR on Unit	115						
	Sample Date	10/11/12						
	ALUMINUM	29	23					5
	CHROME	8	12					7
	IRON	56	74					45
	COPPER	8	9					4
	LEAD	2732	2658					4578
	TIN	8	4					1
	MO LYBDENUM	10	9					3
	NICKEL	39	31					15
	PO TASSIUM	0	0					1
	BORON	1	1					0
	SILICON	11	8					6
	SODIUM	0	0					1
	CALCIUM	87	84					12
	MAGNESIUM	5	4					1
	PHOSPHORUS	88	93					217
	ZINC	7	5					6
	BARIUM	0	0					0

PROPERTIES		Values Should Be*				
SUS Viscosity @210°F	86.4	82-105				
cSt Viscosity @ 100°C	17.10	16.0-21.8				
Flashpoint in °F	470	>430				
Fuel %	<0.5	<1.0				
Antifreeze %	-	-				
Water %	0.0	0.1				
Insolubles %	0.3	<0.6				
TBN						
TAN						
ISO Code						

*THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

This engine suffered a catastrophic bearing failure in flight after this sample was taken. Bearing problems can be hard to see in analysis because lead, the most prominent bearing metal, is obscured by 100LL from blow-by past the rings. Still, this engine was clearly not right. Copper and tin likely show bearing wear, and aluminum, iron, and nickel are also out of line. The crank had worn away the bearing completely and was eating into the case. The filter was fill of metal from the failure. One speculation as to the cause of the failure is that this type of engine has an oil cooler, which can drain if the engine sits for a while, which this one did. You then have to prime the oil cooler before running the engine. If that's not done, it could possibly lead to oil starvation.