



OIL REPORT

LAB NUMBER: E05909 UNIT ID: N3961Q
 REPORT DATE: 3/11/2010 CLIENT ID: 34772
 CODE: 80/284 PAYMENT: CC: MC

UNIT	MAKE/MODEL: Lycoming O-320-E2D	OIL TYPE & GRADE: Aeroshell 15W/50
	FUEL TYPE: Gasoline (Leaded)	OIL USE INTERVAL: 26 Hours
	ADDITIONAL INFO: Cessna 1972 172L, Eng S/N 17260061	

CLIENT	MICHAEL SPRY	PHONE: (704) 279-1263
	312 ASHLEY DR	FAX:
	ROCKWELL, NC 28138	ALT PHONE:
		EMAIL: plane2sea@windstream.net

COMMENTS
 MICHAEL: Taking the sample cold was okay. We advise taking it hot because hot oil tends to cook out any traces of fuel and moisture that may have built up, but we found neither contaminant in your sample. Copper is still on the high side, though this is very likely due to the oil and not any sort of problem with a bronze part. All other wear looks great and we are seeing no changes that would spell trouble for your O-320. Insolubles show good oil filtration. Blow-by levels are normal. Looks like a nice engine as of 3/8/10, the sample date.

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	26	UNIT / LOCATION AVERAGES	25	27	32	UNIVERSAL AVERAGES
	MI/HR on Unit	677		652	627	600	
	Sample Date	03/08/10		11/03/09	07/03/09	02/27/09	
	Make Up Oil Added	3 qts		2 qts	2 qts	3 qts	
ALUMINUM	5	6	5	6	6	5	
CHROMIUM	7	8	8	7	10	6	
IRON	15	17	15	17	19	23	
COPPER	23	32	31	36	36	5	
LEAD	2767	2730	2867	2678	2606	2584	
TIN	3	1	0	0	0	1	
MOLYBDENUM	0	0	0	0	0	0	
NICKEL	2	2	1	2	2	2	
MANGANESE	0	0	0	0	0	0	
SILVER	0	0	0	0	0	0	
TITANIUM	0	0	0	0	0	0	
POTASSIUM	0	1	4	0	0	0	
BORON	1	1	1	0	1	0	
SILICON	7	7	7	8	7	5	
SODIUM	1	2	2	2	2	0	
CALCIUM	3	3	4	3	2	4	
MAGNESIUM	0	1	1	1	1	0	
PHOSPHORUS	1112	1023	971	1018	992	446	
ZINC	8	12	13	16	11	4	
BARIUM	0	0	0	0	0	0	

Values Should Be*

PROPERTIES	SUS Viscosity @ 210°F	89.5	82-105	90.5	86.5	88.8
	cSt Viscosity @ 100°C	17.85	16.0-21.8	18.10	17.12	17.68
	Flashpoint in °F	490	>440	450	480	455
	Fuel %	<0.5	<1.0	<0.5	<0.5	<0.5
	Antifreeze %	-		-	-	-
	Water %	0.0	<0.1	0.0	0.0	0.0
	Insolubles %	0.3	<0.6	0.3	0.4	0.2
	TBN					
	TAN					
	ISO Code					

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

UNIT EQUIP. MAKE/MODEL: Lycoming O-320-E2D OIL TYPE & GRADE: Phillips XC (A/C) 20W/50
 FUEL TYPE: Gasoline (Leaded) OIL USE INTERVAL: 29 Hours
 ADDITIONAL INFO: Cessna 1972 172L, Eng S/N L-30083-27A

CLIENT MICHAEL SPRY PHONE: (704) 279-1263
 312 ASHLEY DR FAX:
 ROCKWELL, NC 28138 ALT PHONE:
 EMAIL: mspry@windstream.net

COMMENTS MICHAEL: This is a nice looking report for N3961Q at 900 hours SMOH. Chrome has been high on and off, but it's only three ppm higher than universal averages this time around, and that's not enough to call a problem. The other elements all stayed nice and steady or dropped a little, (Iron) which is always a good thing. A trace of fuel showed up, but it's not going to hurt anything. You could be seeing a little excess priming or maybe it's just from taking the sample cold. In any case, we have no problems to report for this Lycoming.

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	29	UNIT / LOCATION AVERAGES	29	25	36	32	44	UNIVERSAL AVERAGES
	MI/HR on Unit	900		871	842	817	781	749	
	Sample Date	08/12/12		04/13/12	11/26/11	08/13/11	04/09/11	12/02/10	
	Make Up Oil Added	3 qts		2 qts	2 qts	3 qts	3 qts	4 qts	
	ALUMINUM	4	5	4	5	5	4	7	5
	CHROMIUM	9	10	10	14	12	10	19	6
	IRON	16	18	22	19	19	16	26	24
	COPPER	3	16	3	3	4	4	9	5
	LEAD	2234	2880	2776	2927	3338	2960	3459	2575
	TIN	0	1	0	0	4	0	1	1
	MOLYBDENUM	0	0	0	0	0	0	0	0
	NICKEL	1	1	1	1	1	1	1	2
	MANGANESE	0	0	0	0	0	0	0	0
	SILVER	0	0	0	0	0	0	0	0
	TITANIUM	0	0	0	0	0	0	0	0
	POTASSIUM	1	1	0	0	0	3	0	0
	BORON	0	1	0	0	1	1	1	0
	SILICON	4	7	5	10	8	5	9	5
	SODIUM	0	1	0	0	2	0	0	0
	CALCIUM	6	4	5	6	6	5	5	8
	MAGNESIUM	0	1	1	1	1	0	1	0
	PHOSPHORUS	0	476	0	0	4	6	63	450
	ZINC	1	6	1	0	2	1	2	4
	BARIUM	0	0	0	0	0	0	0	0

Values Should Be*

PROPERTIES	98.4	86-105	93.4	93.3	101.8	94.3	100.3
SUS Viscosity @ 210°F	98.4	86-105	93.4	93.3	101.8	94.3	100.3
cSt Viscosity @ 100°C	19.97	17.0-21.8	18.80	18.77	20.79	19.01	20.43
Flashpoint in °F	430	>430	470	460	460	450	460
Fuel %	TR	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5
Antifreeze %	-		-	-	-	-	-
Water %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Insolubles %	0.3	<0.6	0.4	0.4	0.3	0.2	0.3
TBN							
TAN							
ISO Code							

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

416 E. PETTIT AVE. FORT WAYNE, IN 46806 (260) 744-2380 www.blackstone-labs.com



OIL REPORT

LAB NUMBER: G35989
 REPORT DATE: 9/30/2014
 CODE: 80/75

UNIT ID: N3961Q
 CLIENT ID: 34772
 PAYMENT: CC: MC

UNIT	MAKE/MODEL: Lycoming O-320-E2D	OIL TYPE & GRADE: Phillips XC (A/C) 20W/50
	FUEL TYPE: Gasoline (Leaded)	OIL USE INTERVAL: 38 Hours
	ADDITIONAL INFO: Cessna 1972 172L, Eng S/N L-30083-27A	

CLIENT	MICHAEL SPRY	PHONE: (704) 279-1263
	312 ASHLEY DR	FAX:
	ROCKWELL, NC 28138	ALT PHONE:
		EMAIL: mspry@windstream.net

COMMENTS
 MICHAEL: This is another great sample here. It looks like you were able to get N3961Q up in the air quite a bit this summer, and the engine seems to have appreciated the attention. This is the longest oil run across the page, yet metals aren't any worse than they have been. The frequency of use helps with that, but the extra make-up oil also plays a part. No contamination was found, and the viscosity was fine. A great sample for sure, as of the 9/25/14 sample date.

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	38	UNIT / LOCATION AVERAGES	26	20	19	23	36	UNIVERSAL AVERAGES
	MI/HR on Unit	1,063		1,025	998	978	959	936	
	Sample Date	09/25/14		05/25/14	01/18/14	09/29/13	05/25/13	01/03/13	
	Make Up Oil Added	3 qts		1 qt	1 qt	1 qt	2 qts	3 qts	
ALUMINUM	2	4	3	3	4	5	3	5	
CHROMIUM	7	10	7	8	10	11	9	6	
IRON	17	18	15	15	23	17	16	24	
COPPER	2	11	2	2	2	2	3	5	
LEAD	2616	2738	2353	1997	2029	2853	3026	2617	
TIN	1	1	0	0	4	0	6	1	
MOLYBDENUM	0	0	0	0	0	0	0	0	
NICKEL	1	1	2	1	1	1	1	2	
MANGANESE	0	0	0	0	0	0	0	0	
SILVER	0	0	0	0	0	0	0	0	
TITANIUM	0	0	0	0	0	0	0	0	
POTASSIUM	0	1	1	1	0	0	2	1	
BORON	0	1	0	1	0	0	1	0	
SILICON	3	6	3	4	5	5	3	5	
SODIUM	1	1	0	1	1	1	1	1	
CALCIUM	4	5	2	7	6	7	6	13	
MAGNESIUM	0	1	0	1	1	1	0	1	
PHOSPHORUS	19	310	16	0	0	1	2	500	
ZINC	2	5	0	4	2	6	2	4	
BARIUM	0	0	0	0	0	0	0	0	

Values Should Be*

PROPERTIES	SUS Viscosity @ 210°F	93.6	86-105	90.5	85.8	88.9	89.6	92.7
	cSt Viscosity @ 100°C	18.84	17.0-21.8	18.11	16.96	17.72	17.89	18.63
	Flashpoint in °F	470	>430	455	445	445	480	460
	Fuel %	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5
	Antifreeze %	-	-	-	-	-	-	-
	Water %	0.0	<0.1	0.0	0.0	0.0	0.0	0.0
	Insolubles %	0.2	<0.6	0.3	0.3	0.2	0.5	0.3
	TBN							
	TAN							
	ISO Code							

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UNIT
MAKE/MODEL: Lycoming O-320-E2D

OIL TYPE & GRADE: Phillips XC (A/C) 20W/50

FUEL TYPE: Gasoline (Leaded)

OIL USE INTERVAL: 30 Hours

ADDITIONAL INFO: Cessna 1972 172L, Eng S/N L-30083-27A

CLIENT
MICHAEL SPRY
 312 ASHLEY DR
 ROCKWELL, NC 28138

PHONE: (704) 279-1263
FAX:
ALT PHONE:
EMAIL: mspry@windstream.net

COMMENTS

MICHAEL: This is another beautiful report for N3961Q. Wear metals are tracking along low and steadily, and that's a great indication that there aren't any obvious issues in the works here. No contamination was found. Keep up the good work. Wear trends this good don't come by accident -- clearly you're taking great care of this engine. Happy Holidays!

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	30	UNIT / LOCATION AVERAGES					UNIVERSAL AVERAGES	
	MI/HR on Unit	1,222	23	26	20	27	32		
	Sample Date	12/3/2016	7/31/2016	3/1/2016	11/1/2015	6/28/2015	2/2/2015		
	Make Up Oil Added	3 qts	2 qts	3 qts	2 qts	2 qts	3 qts		
	ALUMINUM	3	4	2	3	6	3	2	5
	CHROMIUM	6	9	5	6	8	5	5	6
	IRON	16	17	15	15	18	14	14	25
	COPPER	2	9	1	2	2	2	2	5
	LEAD	2926	2739	2536	2695	2624	2732	2928	2737
	TIN	0	1	1	1	1	0	2	1
	MOLYBDENUM	0	0	0	0	0	0	0	0
	NICKEL	2	1	1	2	1	2	3	2
	MANGANESE	0	0	0	0	0	0	0	0
	SILVER	0	0	0	0	0	0	0	0
	TITANIUM	0	0	0	0	0	0	0	0
	POTASSIUM	3	1	0	0	2	3	0	1
	BORON	0	1	0	3	0	2	0	1
	SILICON	5	6	5	5	3	3	3	5
	SODIUM	0	1	0	1	4	1	0	1
	CALCIUM	6	5	5	6	6	5	6	17
	MAGNESIUM	0	1	0	1	3	3	0	1
	PHOSPHORUS	0	231	0	0	1	0	26	526
	ZINC	1	4	1	2	2	2	2	4
	BARIUM	0	0	0	0	0	0	0	0

 Values
Should Be*

PROPERTIES	SUS Viscosity @ 210°F	91.4	86-105	90.0	91.8	92.2	94.6	88.3
	cSt Viscosity @ 100°C	18.31	17.0-21.8	17.99	18.42	18.51	19.07	17.56
	Flashpoint in °F	445	>430	490	460	450	445	450
	Fuel %	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5
	Antifreeze %	-	-	-	-	-	-	-
	Water %	0.0	<0.1	0.0	0.0	0.0	0.0	0.0
	Insolubles %	0.3	<0.6	0.3	0.2	0.3	0.3	0.3
	TBN							
	TAN							
	ISO Code							

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