



LABORATORY

AOA

AVIATION OIL ANALYSIS

Phoenix, Arizona 85017

Phone:

Fax:

http://

****email:

YOUR AIRCRAFT.
OUR EXPERTISE

Customer Name: PARAGON AIRCRAFT SERVICE INC

Tail Number N63TV

Comp Serial No.: L-13251-61E

Address: Fairfield NJ 07004
USA

Aircraft Make Cessna

Comp Name: Single Engine

Aircraft Model T206H

Comp Make: Lycoming

Phone:

Serial No.

Comp Model: TIO-540AJ1A

Fax

UIN

Sample No. 44150040939
Date Samples 05-Mar-12
Date Tested 13-Mar-12
Oil Brand Phillips 66
Oil Type XC Aviation MV
Oil Grade 20W50
Oil Hrs 37
Oil Added
Hrs Since New 437
Rebuild Hrs

Metals (ppm)

Aluminium (Al) 12
Iron (Fe) 131.60
Copper (Cu) 17.67
Nickel (Ni) 31
Chromium (Cr) 25
Silver (Ag) <1

Contaminants (ppm)

Silicon (Si) 11

LEGEND

STOP SEVERE ☒ ABNORMAL ! CAUTION ☐ NORMAL

Sample No.

Diagnosis/Recommendations

44150040939

Wear metals appear high for oil time. Possible corrosion if aircraft not flown regularly. Check oil filter for chips. Resample next oil change to establish wear trend.



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Address:
Fairfield NJ 07004
USA

Tail Number: N63TV

Aircraft Make: Cessna

Aircraft Model: T206H

Serial N°:

UIN:

Comp Serial N°: L-13251-61E

Comp Name: Single Engine

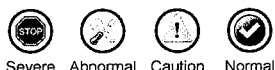
Comp Make: Lycoming

Comp Model: TIO-540AJ1A

Phone:
Fax:

Sample N°	44150055469	44150040939
Date Samples	23-Jul-12	05-Mar-12
Date Tested	05-Oct-12	13-Mar-12
Oil Brand	Phillips 66	Phillips 66
Oil Type	XC Aviation MV	XC Aviation MV
Oil Grade	20W50	20W50
Oil Hrs	86	37
Oil Added		
Hrs Since New	585	437
Rebuild Hrs	585	
Metals (ppm)		
Aluminium (Al)	6	12
Iron (Fe)	102.10	131.60
Copper (Cu)	11.28	17.67
Nickel (Ni)	10	31
Chromium (Cr)	12	25
Silver (Ag)	<1	<1
Contaminants (ppm)		
Silicon (Si)	8	11

LEGEND



Sample N°

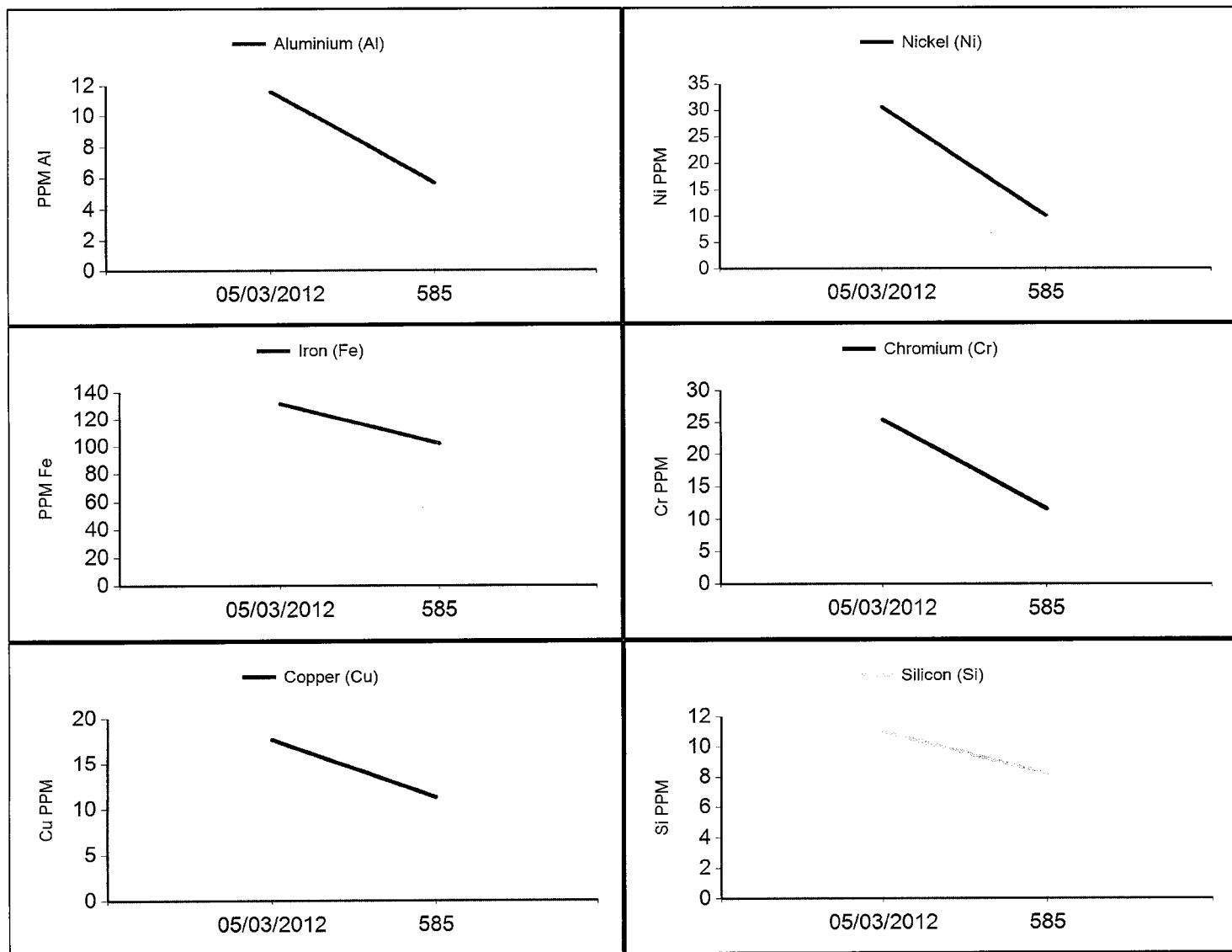
44150055469

44150040939

Diagnosis/Recommendations

All values appear normal.

Wear metals appear high for oil time. Possible corrosion if aircraft not flown regularly. Check oil filter for chips. Resample next oil change to establish wear trend.



Since services are based on samples and information supplied by others, and since corrective actions, if any, are necessarily taken by others, these services are rendered without any warranty or liability of any kind beyond the actual amount paid to ALS Laboratory group for the services. Reported recommendations are based on interpretations of the generated test results and historical data. Certain test results appearing in this report may have been tested at other ALS laboratories within the Tribology divisional network.

Paragon Aircraft Service Inc
Attn: [REDACTED]
Fairfield NJ 07004
USA

**TEST
METHODS:**

Acid Number: ASTM D974/D664
Metals by AA Spectro: ASTM D6595
Viscosity: ASTM D445 / D7279
Water by Crackle: ASTM E203 Mod / In House

0037 v1.1



OIL REPORT

LAB NUMBER: G64103
REPORT DATE: 3/9/2015
CODE: 63/37

UNIT ID: N63TV
CLIENT ID: [REDACTED]
PAYMENT: [REDACTED]

UNIT	MAKE/MODEL:	Lycoming TIO-540-AJ1A	OIL TYPE & GRADE:	Phillips XC (A/C) 20W/50
	FUEL TYPE:	Gasoline (Leaded)	OIL USE INTERVAL:	25 Hours
	ADDITIONAL INFO:	Cessna T206H, E/N: L-13251-61E		

CLIENT	TIM SMITH	PHONE:	[REDACTED]
	PARAGON AIRCRAFT SERVICE, INC.	FAX:	[REDACTED]
	[REDACTED]	ALT PHONE:	[REDACTED]
	FAIRFIELD, NJ 07004-3514	EMAIL:	[REDACTED]

COMMENTS	TIM: These numbers are a lot easier to take than the high aluminum, chrome, iron, and nickel we saw last time. The shorter oil run obviously helped, but most of the metals are lower on a ppm/hour basis too, meaning that the engine really did wear better. If anything, nickel could still stand to be lower. 13 ppm is almost high enough to get a mark, so that's one we'll be monitoring next time. There's a trace of fuel to report this time, but that's not anything to worry about. It's likely just from normal use. Much better at 1,151.6 hours SNew.
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ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	25	UNIT / LOCATION AVERAGES	68					UNIVERSAL AVERAGES
	MI/HR on Unit	1,152		925					
	Sample Date	03/04/15		12/19/13					
	Make Up Oil Added			1 qt					
ALUMINUM	4	4	18						7
CHROMIUM	8	8	36						10
IRON	37	37	198						60
COPPER	4	4	13						10
LEAD	7089	7089	9140						5091
TIN	0	0	4						1
MOLYBDENUM	0	0	1						0
NICKEL	13	13	26						7
MANGANESE	0	0	2						1
SILVER	0	0	0						0
TITANIUM	0	0	1						0
POTASSIUM	1	1	1						1
BORON	1	1	1						1
SILICON	6	6	10						8
SODIUM	0	0	2						1
CALCIUM	5	5	6						20
MAGNESIUM	2	2	2						3
PHOSPHORUS	208	208	838						541
ZINC	2	2	7						7
BARIUM	0	0	0						0

Values
Should Be*

PROPERTIES	SUS Viscosity @ 210°F	93.3	86-105	97.2				
	cSt Viscosity @ 100°C	18.76	17.0-21.8	19.69				
	Flashpoint in °F	430	>430	455				
	Fuel %	TR	<1.0	<0.5				
	Antifreeze %	-	-	-				
	Water %	0.0	<0.1	0.0				
	Insolubles %	0.4	<0.6	0.6				
	TBN							
	TAN							
	ISO Code							

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

[REDACTED] FORT WAYNE, IN 46806 [REDACTED] [REDACTED]



OIL REPORT

LAB NUMBER: G82694
REPORT DATE: 6/12/2015
CODE: 63/37

UNIT ID: N63TV
CLIENT ID: [REDACTED]
PAYMENT: [REDACTED]

UNIT MAKE/MODEL: Lycoming TIO-540-AJ1A OIL TYPE & GRADE: Phillips XC (A/C) 20W/50
FUEL TYPE: Gasoline (Leaded) OIL USE INTERVAL: 24 Hours
ADDITIONAL INFO: Cessna T206H, E/N: L-13251-61E

CLIENT TIM SMITH
PARAGON AIRCRAFT SERVICE, INC.
[REDACTED]
FAIRFIELD, NJ 07004-3514

PHONE: [REDACTED]
FAX: [REDACTED]
ALT PHONE: [REDACTED]
EMAIL: [REDACTED]

COMMENTS TIM: The oil sample run for you 3-months ago looked much like this one after about the same oil use run. Wear easily beat universal average levels, the universal average wear based on (an average of) 30-oil use hours. We see nothing in any of these data that would suggest a new engine problem developing at 1,179.3 (SNew) hours.

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	24	UNIT / LOCATION AVERAGES	25	68				UNIVERSAL AVERAGES
	MI/HR on Unit	1,179		1,152	925				
	Sample Date	6/9/2015		3/4/2015	12/19/2013				
	Make Up Oil Added				1 qt				
ALUMINUM	4	4	4	4	18				7
CHROMIUM	9	9	8	36					10
IRON	37	37	37	198					60
COPPER	4	4	4	13					10
LEAD	6884	6987	7089	9140					5094
TIN	2	1	0	4					1
MOLYBDENUM	0	0	0	1					0
NICKEL	13	13	13	26					7
MANGANESE	0	0	0	2					1
SILVER	0	0	0	0					0
TITANIUM	0	0	0	1					0
POTASSIUM	0	1	1	1					1
BORON	0	1	1	1					1
SILICON	6	6	6	10					8
SODIUM	0	0	0	2					1
CALCIUM	7	6	5	6					20
MAGNESIUM	5	4	2	2					3
PHOSPHORUS	10	109	208	838					548
ZINC	1	2	2	7					7
BARIIUM	0	0	0	0					0

Values
Should Be*

PROPERTIES	SUS Viscosity @ 210°F	101.8	86-105	93.3	97.2			
	cSt Viscosity @ 100°C	20.79	17.0-21.8	18.76	19.69			
	Flashpoint in °F	455	>430	430	455			
	Fuel %	<0.5	<1.0	TR	<0.5			
	Antifreeze %	-	-	-	-			
	Water %	0.0	<0.1	0.0	0.0			
	Insolubles %	0.2	<0.6	0.4	0.6			
	TBN							
	TAN							
	ISO Code							

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

[REDACTED] FORT WAYNE, IN 46806 [REDACTED] [REDACTED]



OIL REPORT

LAB NUMBER: G94813
REPORT DATE: 8/12/2015
CODE: 63/37

UNIT ID: N63TV
CLIENT ID: [REDACTED]
PAYMENT: [REDACTED]

UNIT

MAKE/MODEL: Lycoming TIO-540-AJ1A
FUEL TYPE: Gasoline (Leaded)
ADDITIONAL INFO: Cessna T206H, E/N: L-13251-61E

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

CLIENT

TIM SMITH
PARAGON AIRCRAFT SERVICE, INC.
[REDACTED]
FAIRFIELD, NJ 07004-3514

PHONE: [REDACTED]
FAX: [REDACTED]
ALT PHONE: [REDACTED]
EMAIL: [REDACTED]

COMMENTS

TIM: Steady as she goes for this sample out of N63TV. If we're being picky you could say that iron should have come down as a result of the shorter oil run, but 39 ppm isn't bad at all for one of these engines after 20 hours on the oil. Everything else is in good shape, so we'd be surprised if the extra iron on a per-hour basis turned out to be an issue. No problems with the oil itself were found, making for a very nice report overall.

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	20	UNIT / LOCATION AVERAGES	24	25	68			UNIVERSAL AVERAGES
	MI/HR on Unit	1,199		1,179	1,152	925			
	Sample Date	8/4/2015		6/9/2015	3/4/2015	12/19/2013			
	Make Up Oil Added					1 qt			
ALUMINUM	4	4	4	4	18				7
CHROMIUM	8	8	9	8	36				10
IRON	39	38	37	37	198				60
COPPER	4	4	4	4	13				10
LEAD	5814	6596	6884	7089	9140				5084
TIN	2	1	2	0	4				1
MOLYBDENUM	0	0	0	0	1				0
NICKEL	10	12	13	13	26				7
MANGANESE	0	0	0	0	2				1
SILVER	0	0	0	0	0				0
TITANIUM	0	0	0	0	1				0
POTASSIUM	1	1	0	1	1				1
BORON	0	0	0	1	1				1
SILICON	5	6	6	6	10				8
SODIUM	0	0	0	0	2				1
CALCIUM	6	6	7	5	6				20
MAGNESIUM	4	4	5	2	2				3
PHOSPHORUS	4	74	10	208	838				552
ZINC	2	2	1	2	7				7
BARIUM	0	0	0	0	0				0

Values
Should Be*

PROPERTIES	SUS Viscosity @ 210°F	99.7	86-105	101.8	93.3	97.2
	cSt Viscosity @ 100°C	20.28	17.0-21.8	20.79	18.76	19.69
	Flashpoint in °F	460	>430	455	430	455
	Fuel %	<0.5	<1.0	<0.5	TR	<0.5
	Antifreeze %	-	-	-	-	-
	Water %	0.0	<0.1	0.0	0.0	0.0
	Insolubles %	0.3	<0.6	0.2	0.4	0.6
	TBN					
	TAN					
	ISO Code					

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[REDACTED] FORT WAYNE, IN 46806 [REDACTED] [REDACTED]