

# AVIATION LABORATORIES



**S.O.A.P.**  
INFORMATION FORM

WHITE COPY - LABORATORY • CANARY COPY - CUSTOMER

<b>1. CUSTOMER INFORMATION — <u>MUST</u> Be Completely Filled Out for Proper Processing</b>		TAIL NUMBER <u>N 368MD</u>																																										
<input type="checkbox"/> New Owner <input type="checkbox"/> New Address <b>1. COMPANY</b> <u>MC RAIL ED-WES INC</u> ADDRESS <u>1450 SALLY RIDE DR</u> CITY <u>CONCORD</u> ST <u>CA</u> ZIP <u>94520</u> ATTENTION <u>ARNOLD PETERSON</u> FOR IMMEDIATE NOTIFICATION: CONTACT TELEPHONE ( <u>510</u> ) <u>682-7911</u> TELEX _____ FAX # ( <u>510</u> ) <u>682-5328</u>	<b>2. ENGINE</b> MAKE/MODEL <u>731-3-1G</u> POSITION <u>214</u> HOURS SINCE <input type="checkbox"/> new <input type="checkbox"/> overhaul <u>2316.6</u> HOURS SINCE LAST SAMPLE _____ HOURS SINCE LAST OIL CHANGE _____ HOURS ON THIS FILTER _____ OIL CONSUMPTION SINCE LAST SAMPLE _____ QTS. OIL IN USE: BRAND _____ TYPE _____	SERIAL NUMBER <u>P 76 727 C</u>																																										
<b>3. REASON FOR SAMPLE</b> <input checked="" type="checkbox"/> - NORMAL <input type="checkbox"/> - SPECIAL LAB REQUEST <input type="checkbox"/> - SPECIAL CUSTOMER REQUEST	<b>4. AIRCRAFT TYPE</b> <u>1124</u> S/N <u>368</u> TIME ON AIRCRAFT <u>5462</u>	<b>5. DATE SAMPLE TAKEN</b> <u>6 / 25 / 94</u> Mo. Day Year																																										
<b>6. MAINTENANCE PERFORMED SINCE LAST SAMPLE</b> <u>LOWER ENGINE - REMOVED FROM</u> <u>WESTWIND 368</u>																																												
<b>7. OPERATIONAL PROBLEMS SINCE LAST SAMPLE</b> _____																																												
<b>8. IS THIS ENGINE ON THE MAINTENANCE SERVICE PLAN?</b> <input checked="" type="checkbox"/> YES    MSP CONTRACT NO. <u>3108C</u> EXPIRATION DATE <u>  /  /  </u> <input type="checkbox"/> NO    Mo. Day Year																																												
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**HOUSTON**

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 5401 Mitchelldale, Suite B6  
 Houston, Texas 77092  
 (713) 864-6677 • Fax (713) 864-6990

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# MSP

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	5. DATE SAMPLE TAKEN <u>10</u> <u>1</u> <u>24</u> <u>1992</u> Mo. Day Year																		

6. MAINTENANCE PERFORMED SINCE LAST SAMPLE 0

7. OPERATIONAL PROBLEMS SINCE LAST SAMPLE 0

8. IS THIS ENGINE ON THE MAINTENANCE SERVICE PLAN?  
 YES    MSP CONTRACT NO. 3108C    EXPIRATION DATE 1 13 1993  
 NO    Mo. Day Year

FOR LABORATORY USE ONLY

FLTR WT _____											
WEAR METAL ANALYSIS IN PARTS PER MILLION											
FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN	
FILTER CONTENT ANALYSIS											
AMOUNT:	ST ST	CB ST	AL ST	M50	COPR	SILV	MAG	ALUM	GRIT	MISC	
TYPE: _____											
FORM: _____											
LAB COMMENT: _____											
RECOMMEND: _____ REASON: _____ RESMPL HRS: _____											
CSE: _____ SVC CTR: _____											

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3. REASON FOR SAMPLE <input checked="" type="checkbox"/> - NORMAL <input type="checkbox"/> - SPECIAL LAB REQUEST <input type="checkbox"/> - SPECIAL CUSTOMER REQUEST	4. AIRCRAFT TYPE <u>1124</u> S/N <u>368</u> TIME ON AIRCRAFT <u>5170</u>
	5. DATE SAMPLE TAKEN <u>10</u> / <u>24</u> / <u>192</u> <span style="font-size: small; margin-left: 100px;">Mo.                  Day                  Year</span>

6. MAINTENANCE PERFORMED SINCE LAST SAMPLE Ø

7. OPERATIONAL PROBLEMS SINCE LAST SAMPLE Ø

8. IS THIS ENGINE ON THE MAINTENANCE SERVICE PLAN?  
 YES    MSP CONTRACT NO. 3108C    EXPIRATION DATE 1 13 1 93  
 NO Mo.                  Day                  Year

**FOR LABORATORY USE ONLY**

FLTR WT. _____										
WEAR METAL ANALYSIS IN PARTS PER MILLION										
FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN
FILTER CONTENT ANALYSIS										
	ST ST	CB ST	AL ST	M50	COPR	SILV	MAG	ALUM	GRIT	MISC
AMOUNT: _____										
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# AVIATION LABORATORIES

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 05-12-1993

APRI AVIATION  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DR.  
  
CONCORD ,CA 94520

ENGINE S/N: 77488  
  
ENGINE MODEL: TFE731-3-16  
AIRCRAFT: WW1124 368  
TAIL NUMBER: N368MD

### GARRETT SOAP2000 SYSTEM

**\*\* CURRENT RECOMMENDATION \*\* IMPORTANT!! SEND A RESAMPLE AFTER 25 HOURS.**

SAMPLE DATE: 05/06/93	*** FILTER ANALYSIS RESULTS ***											
ANALYSIS DATE: 05/12/93	MATL:	ST ST	CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
SAMPLE NUMBER: 8												
TSN HRS: 5013	AMOUNT:	TRACE							TRACE	MINOR	MAJOR	
TSD HRS:	TYPE:											
OIL HRS: 400	FORM:	FN										
FILTER HRS: 108												
OIL ADDED:	*** OIL ANALYSIS RESULTS ***											
FILTER MGS: 55	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN	
FLASHPOINT:	0.10	0.10	< 1.00	< 1.00	0.10	0.10						

LAB FINDINGS: MINOR ALUMINUM ;  
LAB COMMENTS: MSP 310B 1-3-94 ;

**\*\* PREVIOUS - 1 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.**

SAMPLE DATE: 10/24/92	*** FILTER ANALYSIS RESULTS ***											
ANALYSIS DATE: 10/28/92	MATL:	ST ST	CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
SAMPLE NUMBER: 2												
TSN HRS: 5119	AMOUNT:	TRACE							TRACE	TRACE	MAJOR	
TSD HRS:	TYPE:											
OIL HRS: 896	FORM:	FN										
FILTER HRS: 149												
OIL ADDED:	*** OIL ANALYSIS RESULTS ***											
FILTER MGS: 49	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN	
FLASHPOINT:	0.10	0.10	< 1.00	< 1.00	0.10	0.10						

LAB FINDINGS: ;  
LAB COMMENTS: MSP 3108C 1-3-93 ;

**\*\* PREVIOUS - 2 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.**

SAMPLE DATE: 01/23/92	*** FILTER ANALYSIS RESULTS ***											
ANALYSIS DATE: 01/28/92	MATL:	ST ST	CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
SAMPLE NUMBER: 3												
TSN HRS: 4970	AMOUNT:	TRACE							TRACE	TRACE	MAJOR	
TSD HRS:	TYPE:											
OIL HRS: 755	FORM:											
FILTER HRS: 180												
OIL ADDED:	*** OIL ANALYSIS RESULTS ***											
FILTER MGS: 93	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN	
FLASHPOINT:	0.10	0.10	< 1.00	< 1.00	0.10	0.10						

LAB FINDINGS: ;  
LAB COMMENTS: MSP 0310B 01-03-93 ;

**MATL:****Filter Material Codes**

ST ST Stainless steel  
CB ST Carbon Steel  
AL ST Alloy steel  
M50 Bearing alloy  
MAGNS Magnesium  
ALUM Aluminum

**AMOUNT:****Filter Amount Codes**

TRACE 0-10%  
MINOR 10-40%  
MAJOR 40-100%  
Percent of total  
filter weight

**FORM:****Filter Material  
Form Codes**

BF Brass fines  
BZ Bronze fines  
CK Chunks  
CP Corrosion products  
FL Flakes  
FN Fines  
MC Machining chips  
OP Oxidized platelets  
PL Plating  
PT Platelets  
SL Slivers  
ST Stringers

**TYPE:****Filter Material  
Type Codes**

BR Black rubber/elastic  
CM Carbon seal material  
CS Plain carbon steel  
CU Copper  
DL Moly drylube  
FE Iron  
FI Fibers  
FP Fel-pro C5A  
GB Glass beads  
HR Hylomar sealant  
MG Magnesium  
MO Moly (Metal spray)  
MS 400 Stainless steel  
NI Nickel  
OX Iron oxide  
PH 17-4 PH Iron  
PC Paint chips  
SG Silicone grease  
SI Silicon  
SS 300 Stainless steel  
TS BRNG Alloy (M50)  
VO Voishan seal material

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8. IS THIS ENGINE ON THE MAINTENANCE SERVICE PLAN? <input checked="" type="checkbox"/> YES    MSP CONTRACT NO. <u>3108C</u> EXPIRATION DATE <u>1</u> / <u>1</u> / _____ <input type="checkbox"/> NO    Mo. Day Year																																																									
FOR LABORATORY USE ONLY																																																									
FLTR WT _____ WEAR METAL ANALYSIS IN PARTS PER MILLION <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">FE</td> <td style="width:10%;">CU</td> <td style="width:10%;">NI</td> <td style="width:10%;">CR</td> <td style="width:10%;">AG</td> <td style="width:10%;">MG</td> <td style="width:10%;">AL</td> <td style="width:10%;">PB</td> <td style="width:10%;">BE</td> <td style="width:10%;">OTHER</td> <td style="width:10%;">TAN</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table> FILTER CONTENT ANALYSIS <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">AMOUNT:</td> <td style="width:10%;">ST ST</td> <td style="width:10%;">CB ST</td> <td style="width:10%;">AL ST</td> <td style="width:10%;">M50</td> <td style="width:10%;">COPR</td> <td style="width:10%;">SILV</td> <td style="width:10%;">MAG</td> <td style="width:10%;">ALUM</td> <td style="width:10%;">GRIT</td> <td style="width:10%;">MISC</td> </tr> <tr> <td>TYPE:</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>FORM:</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table> LAB COMMENT: _____ RECOMMEND: _____ REASON: <u>P-77472</u> CSE: _____ <u>1124 N368MD</u> <u>SMOKE IN CABIN</u> RESMPL HRS: _____ SVC CTR: _____ <u>7-30-93</u>			FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	AMOUNT:	ST ST	CB ST	AL ST	M50	COPR	SILV	MAG	ALUM	GRIT	MISC	TYPE:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	FORM:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN																																															
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____																																															
AMOUNT:	ST ST	CB ST	AL ST	M50	COPR	SILV	MAG	ALUM	GRIT	MISC																																															
TYPE:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____																																															
FORM:	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____																																															

### HOUSTON

Administrative Offices  
 Aviation Laboratories, Inc.  
 5401 Mitchelldale, Suite B6  
 Houston, Texas 77092  
 (713) 864-6677 • Fax (713) 864-6990

### NEW ORLEANS

Laboratory Facility  
 Aviation Laboratories, Inc.  
 918 Maria Street  
 Kenner, LA 70062  
 (504) 469-6751 • Fax (504) 469-6886

### LOS ANGELES

Laboratory Facility  
 Aviation Laboratories, Inc.  
 12911 Budlong Avenue  
 Gardena, CA 90247  
 (310) 217-9369 • Fax (310) 217-0637

AVIATION LABORATORIES, INC. WARRANTS THAT THE RESULTS OF THIS ANALYSIS SHALL BE ACCURATE BASED ON THE CONDITION OF THE SAMPLE AND DATA PROVIDED BY THE USER OR CUSTOMER. THIS WARRANTY EXPRESSLY LIMITS LIABILITY OF AVIATION LABORATORIES, INC. FOR ANY MISTAKE, ERRORS OR OMISSIONS IN THIS ANALYSIS TO THE FULL PRICE PAID FOR THIS ANALYSIS ONLY.

# AVIATION LABORATORIES

**MAILED**  
82

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 08-01-1993

APRI AVIATION  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DR.

CONCORD ,CA 94520

ENGINE S/N: 77488

ENGINE MODEL: TFE731-3-16  
AIRCRAFT: WW1124 368  
TAIL NUMBER: N368MD

### GARRETT SOAP 2000 SYSTEM

**\*\* CURRENT RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 07/30/93		<b>*** FILTER ANALYSIS RESULTS ***</b>														
ANALYSIS DATE: 08/01/93		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
SAMPLE NUMBER: 6																
TSN HRS:	5307	AMOUNT:			TRACE			TRACE			TRACE		TRACE		MAJOR	
TSO HRS:		TYPE:														
OIL HRS:	29	FORM:														
FILTER HRS:	29	ST														
OIL ADDED:		FN														
FILTER MGS:	43	FN														
FLASHPOINT:																
		<b>*** OIL ANALYSIS RESULTS ***</b>														
FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN						
0.10	0.10	< 1.00	< 1.00	0.10	0.10											

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108

**\*\* PREVIOUS - 1 RECOMMENDATION \*\*** IMPORTANT!! SEND A RESAMPLE AFTER 25 HOURS.

SAMPLE DATE: 05/06/93		<b>*** FILTER ANALYSIS RESULTS ***</b>														
ANALYSIS DATE: 05/12/93		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
SAMPLE NUMBER: 8																
TSN HRS:	5013	AMOUNT:			TRACE						TRACE		MINOR		MAJOR	
TSO HRS:		TYPE:														
OIL HRS:	400	FORM:														
FILTER HRS:	108															
OIL ADDED:		FN														
FILTER MGS:	55															
FLASHPOINT:																
		<b>*** OIL ANALYSIS RESULTS ***</b>														
FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN						
0.10	0.10	< 1.00	< 1.00	0.10	0.10											

LAB FINDINGS: MINOR ALUMINUM ; ; ; ;  
LAB COMMENTS: MSP 3108 1-3-94

**\*\* PREVIOUS - 2 RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 10/24/92		<b>*** FILTER ANALYSIS RESULTS ***</b>														
ANALYSIS DATE: 10/28/92		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
SAMPLE NUMBER: 2																
TSN HRS:	5119	AMOUNT:			TRACE						TRACE		TRACE		MAJOR	
TSO HRS:		TYPE:														
OIL HRS:	896	FORM:														
FILTER HRS:	149															
OIL ADDED:		FN														
FILTER MGS:	49															
FLASHPOINT:																
		<b>*** OIL ANALYSIS RESULTS ***</b>														
FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN						
0.10	0.10	< 1.00	< 1.00	0.10	0.10											

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108C 1-3-93



**MATL:**  
**Filter Material Codes**

ST ST	Stainless steel
CB ST	Carbon Steel
AL ST	Alloy steel
M50	Bearing alloy
MAGNS	Magnesium
ALUM	Aluminum

**AMOUNT:**  
**Filter Amount Codes**

TRACE	0-10%
MINOR	10-40%
MAJOR	40-100%

Percent of total filter weight

**FORM:**  
**Filter Material**  
**Form Codes**

BF	Brass fines
BZ	Bronze fines
CK	Chunks
CP	Corrosion products
FL	Flakes
FN	Fines
MC	Machining chips
OP	Oxidized platelets
PL	Plating
PT	Platelets
SL	Slivers
ST	Stringers

**TYPE:**  
**Filter Material Type Codes**

BR	Black rubber / elastic
CM	Carbon seal material
CS	Plain carbon steel
CU	Copper
DL	Moly drylube
FE	Iron
FI	Fibers
FP	Fel-pro C5A
GB	Glass beads
HR	Hylomar sealant
MG	Magnesium
MO	Moly (Metal spray)
MS	400 Stainless steel
NI	Nickel
OX	Iron oxide
PH	17 - 4 PH Iron
PC	Paint chips
SG	Silicone grease
SI	Silicon
SS	300 Stainless steel
TS	BRNG Alloy
VO	Voishan seal material

**OIL CODES**

FE	Iron
CU	Copper
Ni	Nickel
CR	Chromium
AG	Silver
Ti	Titanium
Si	Silicon
MG	Magnesium
AL	Aluminum
PB	Lead
BE	Beryllium
TAN	Total Acid Number

# AVIATION LABORATORIES

**MAILED**  
8-2

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 08-01-1993

ED-WES/ MCBAIL CO.  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DR.

CONCORD ,CA 94520  
USA

ENGINE S/N: 77482

ENGINE MODEL: TFE731-3-16  
AIRCRAFT: 1124 36B  
TAIL NUMBER: N368MD

### GARRETT SOAP2000 SYSTEM

**\*\* CURRENT RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 07/30/93	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 08/01/93	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 4	AMOUNT:	TRACE												
TSN HRS: 5307	TYPE:	FN												
TSD HRS:	FORM:	FN												
OIL HRS: 428														
FILTER HRS: 137														
OIL ADDED:														
FILTER MGS: 58	<b>*** OIL ANALYSIS RESULTS ***</b>													
FLASHPOINT:	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
	0.10	0.10	< 1.00	< 1.00	0.10	0.10								

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108

**\*\* PREVIOUS - 1 RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 10/24/92	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 10/28/92	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 1	AMOUNT:	TRACE												
TSN HRS: 4904	TYPE:	TRACE												
TSD HRS:	FORM:	TRACE												
OIL HRS: 291														
FILTER HRS: 149														
OIL ADDED:														
FILTER MGS: 82	<b>*** OIL ANALYSIS RESULTS ***</b>													
FLASHPOINT:	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
	0.10	0.10	< 1.00	< 1.00	0.10	0.10								

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108C 1-3-93

**\*\* PREVIOUS - 2 RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 01/23/92	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 01/28/92	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 4	AMOUNT:	TRACE												
TSN HRS: 4755	TYPE:	TRACE												
TSD HRS:	FORM:	TRACE												
OIL HRS: 783														
FILTER HRS: 150														
OIL ADDED:														
FILTER MGS: 89	<b>*** OIL ANALYSIS RESULTS ***</b>													
FLASHPOINT:	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
	0.10	0.10	< 1.00	< 1.00	0.10	0.10								

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 03108

**MATL:**  
**Filter Material Codes**

ST ST	Stainless steel
CB ST	Carbon Steel
AL ST	Alloy steel
M50	Bearing alloy
MAGNS	Magnesium
ALUM	Aluminum

**AMOUNT:**  
**Filter Amount Codes**

TRACE	0-10%
MINOR	10-40%
MAJOR	40-100%

Percent of total filter weight

**FORM:**  
**Filter Material**  
**Form Codes**

BF	Brass fines
BZ	Bronze fines
CK	Chunks
CP	Corrosion products
FL	Flakes
FN	Fines
MC	Machining chips
OP	Oxidized platelets
PL	Plating
PT	Platelets
SL	Slivers
ST	Stringers

**OIL CODES**

FE	Iron
CU	Copper
Ni	Nickel
CR	Chromium
AG	Silver
Ti	Titanium
Si	Silicon
MG	Magnesium
AL	Aluminum
PB	Lead
BE	Beryllium
TAN	Total Acid Number

**TYPE:**  
**Filter Material Type Codes**

BR	Black rubber / elastic
CM	Carbon seal material
CS	Plain carbon steel
CU	Copper
DL	Moly drylube
FE	Iron
FI	Fibers
FP	Fel-pro C5A
GB	Glass beads
HR	Hylomar sealant
MG	Magnesium
MO	Moly (Metal spray)
MS	400 Stainless steel
NI	Nickel
OX	Iron oxide
PH	17 - 4 PH Iron
PC	Paint chips
SG	Silicone grease
SI	Silicon
SS	300 Stainless steel
TS	BRNG Alloy
VO	Voishan seal material

# AVIATION LABORATORIES

12911 BUDLONG AVENUE  
GARDENA, CA 90247  
(213) 217-9369

DATE: 10-29-1992

## S. O. A. P. RESULTS

ED-WES/ MCBAIL CO.  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DR.

ENGINE S/N: 77482

CONCORD ,CA 94520  
USA

ENGINE MODEL: TFE731-3-16  
AIRCRAFT: 1124 368  
TAIL NUMBER:

### GARRETT SOAP2000 SYSTEM

** CURRENT RECOMMENDATION ** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.															
SAMPLE DATE:	10/24/92	*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE:	10/28/92	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER:	1	AMOUNT:	TRACE										TRACE	TRACE	MAJOR
TSN HRS:	4904	TYPE:													
TSO HRS:		FORM:													
OIL HRS:	291	*** OIL ANALYSIS RESULTS ***													
FILTER HRS:	149	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
OIL ADDED:		0.10	0.10	< 1.00	< 1.00	0.10	0.10								
FILTER MGS:	82	LAB FINDINGS: ; ; ; ;													
FLASHPOINT:		LAB COMMENTS: MSP 3108C 1-3-93													

** PREVIOUS - 1 RECOMMENDATION ** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.															
SAMPLE DATE:	01/23/92	*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE:	01/28/92	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER:	4	AMOUNT:	TRACE										TRACE	TRACE	MAJOR
TSN HRS:	4755	TYPE:													
TSO HRS:		FORM:													
OIL HRS:	783	*** OIL ANALYSIS RESULTS ***													
FILTER HRS:	150	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
OIL ADDED:		0.10	0.10	< 1.00	< 1.00	0.10	0.10								
FILTER MGS:	89	LAB FINDINGS: ; ; ; ;													
FLASHPOINT:		LAB COMMENTS: MSP 03108													

** PREVIOUS - 2 RECOMMENDATION ** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.															
SAMPLE DATE:	09/23/91	*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE:	09/25/91	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER:	15	AMOUNT:	TRACE										TRACE	TRACE	MAJOR
TSN HRS:		TYPE:													
TSO HRS:	28	FORM:	ST												
OIL HRS:	28	*** OIL ANALYSIS RESULTS ***													
FILTER HRS:	28	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
OIL ADDED:		0.10	0.10	< 1.00	< 1.00	0.10	0.10								
FILTER MGS:	73	LAB FINDINGS: ; ; ; ;													
FLASHPOINT:		LAB COMMENTS: MSP 3108 01-03-93													

**MATL:****Filter Material Codes**

ST ST Stainless steel  
CB ST Carbon Steel  
AL ST Alloy steel  
M50 Bearing alloy  
MAGNS Magnesium  
ALUM Aluminum

**AMOUNT:****Filter Amount Codes**

TRACE 0-10%  
MINOR 10-40%  
MAJOR 40-100%  
Percent of total  
filter weight

**FORM:****Filter Material****Form Codes**

BF Brass fines  
BZ Bronze fines  
CK Chunks  
CP Corrosion products  
FL Flakes  
FN Fines  
MC Machining chips  
OP Oxidized platelets  
PL Plating  
PT Platelets  
SL Slivers  
ST Stringers

**TYPE:****Filter Material  
Type Codes**

BR Black rubber/elastic  
CM Carbon seal material  
CS Plain carbon steel  
CU Copper  
DL Moly drylube  
FE Iron  
FI Fibers  
FP Fel-pro C5A  
GB Glass beads  
HR Hylomar sealant  
MG Magnesium  
MO Moly (Metal spray)  
MS 400 Stainless steel  
NI Nickel  
OX Iron oxide  
PH 17-4 PH Iron  
PC Paint chips  
SG Silicone grease  
SI Silicon  
SS 300 Stainless steel  
TS BRNG Alloy (M50)  
VO Voishan seal material

# AVIATION LABORATORIES

12911 BUDLONG AVENUE  
GARDENA, CA 90247  
(213) 217-9369

## S. O. A. P. RESULTS

DATE: 10-29-1992

ED-WES/ MCBAIL CO.  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DR.

ENGINE S/N: 77488

CONCORD ,CA 94520  
USA

ENGINE MODEL: TFE731-3-16  
AIRCRAFT: WW1124 368  
TAIL NUMBER:

### GARRETT SDAP2000 SYSTEM

**\*\* CURRENT RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.**

SAMPLE DATE: 10/24/92	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 10/28/92	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 2														
TSN HRS: 5119	AMOUNT:	TRACE												
TSO HRS:	TYPE:	TRACE												
OIL HRS: 896	FORM:	FN												
FILTER HRS: 149														
OIL ADDED:	<b>*** OIL ANALYSIS RESULTS ***</b>													
FILTER MGS: 49	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FLASHPOINT:	0.10	0.10	< 1.00	< 1.00	0.10	0.10								

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108C 1-3-93

**\*\* PREVIOUS - 1 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.**

SAMPLE DATE: 01/23/92	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 01/28/92	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 3														
TSN HRS: 4970	AMOUNT:	TRACE												
TSO HRS:	TYPE:	TRACE												
OIL HRS: 755	FORM:	MAJOR												
FILTER HRS: 180														
OIL ADDED:	<b>*** OIL ANALYSIS RESULTS ***</b>													
FILTER MGS: 93	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FLASHPOINT:	0.10	0.10	< 1.00	< 1.00	0.10	0.10								

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 03108 01-03-93

**\*\* PREVIOUS - 2 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.**

SAMPLE DATE: 02/14/91	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 02/18/91	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 30														
TSN HRS: 0	AMOUNT:	TRACE												
TSO HRS: 591	TYPE:	TRACE												
OIL HRS: 75	FORM:	MAJOR												
FILTER HRS: 75														
OIL ADDED:	<b>*** OIL ANALYSIS RESULTS ***</b>													
FILTER MGS: 57	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FLASHPOINT:	0.10	0.10	< 1.00	< 1.00	0.10	0.10								

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108 1-3-93

**MATL:****Filter Material Codes**

ST ST Stainless steel  
 CB ST Carbon Steel  
 AL ST Alloy steel  
 M50 Bearing alloy  
 MAGNS Magnesium  
 ALUM Aluminum

**AMOUNT:****Filter Amount Codes**

TRACE 1-10%  
 MINOR 11-40%  
 MAJOR 40-100%  
 Percent of total  
 filter weight

**FORM:****Filter Material****Form Codes**

BF Brass fines  
 BZ Bronze fines  
 CK Chunks  
 CP Corrosion products  
 FL Flaker  
 FN Fines  
 MC Machining chips  
 OP Oxidized platelets  
 PL Plating  
 PT Platelets  
 SL Slivers  
 ST Stringers

**TYPE:****Filter Material  
Type Codes**

BR Black rubber/elastic  
 CM Carbon seal material  
 CS Plain carbon steel  
 CU Copper  
 DL Moly drylube  
 FE Iron  
 FI Fibers  
 FP Fel-pro C5A  
 GB Glass beads  
 HR Hylomar sealant  
 MG Magnesium  
 MO Moly (Metal spray)  
 MS 400 Stainless steel  
 NI Nickel  
 OX Iron oxide  
 PH 17-4 PH Iron  
 PC Paint chips  
 SG Silicone grease  
 SI Silicon  
 SS 300 Stainless steel  
 TS BRNG Alloy (M50)  
 VO Voishan seal material

# AVIATION LABORATORIES

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 06-24-1994

McBAIL CO.  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DRIVE

ENGINE S/N: 76727

ENGINE MODEL: TFE731-3-1E  
AIRCRAFT: 1124 368  
TAIL NUMBER:

CONCORD ,CA 94520  
USA

### GARRETT SOAP2000 SYSTEM

\*\* CURRENT RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 06/17/94		*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE: 06/23/94		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 11		AMOUNT: TRACE													
TSN HRS: 2313		TYPE: TRACE													
TSO HRS:		FORM: FN CK													
OIL HRS: 47															
FILTER HRS: 47															
OIL ADDED:															
FILTER MGS: 54		*** OIL ANALYSIS RESULTS ***										BE	OTHER	TAN	
FLASHPOINT:		FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
		0.10	0.10	< 1.00	< 1.00	0.10	0.10								
LAB FINDINGS:		;													
LAB COMMENTS: MSP 3108C															

\*\* PREVIOUS - 1 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 04/14/90		*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE: 04/17/90		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 32		AMOUNT: TRACE													
TSN HRS: 1327		TYPE: TRACE													
TSO HRS: 0		FORM: TRACE													
OIL HRS: 18															
FILTER HRS: 18															
OIL ADDED: 0.00															
FILTER MGS: 18		*** OIL ANALYSIS RESULTS ***										BE	OTHER	TAN	
FLASHPOINT: 0		FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
		0.50	0.30	< 1.00	< 1.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00			
LAB FINDINGS:		;													
LAB COMMENTS: RENTAL PHX KIT															



**MATL:**  
**Filter Material Codes**

ST ST	Stainless steel
CB ST	Carbon Steel
AL ST	Alloy steel
M50	Bearing alloy
MAGNS	Magnesium
ALUM	Aluminum

**AMOUNT:**  
**Filter Amount Codes**

TRACE	0-10%
MINOR	10-40%
MAJOR	40-100%

Percent of total filter weight

**FORM:**  
**Filter Material**  
**Form Codes**

BF	Brass fines
BZ	Bronze fines
CK	Chunks
CP	Corrosion products
FL	Flakes
FN	Fines
MC	Machining chips
OP	Oxidized platelets
PL	Plating
PT	Platelets
SL	Slivers
ST	Stringers

**OIL CODES**

FE	Iron
CU	Copper
Ni	Nickel
CR	Chromium
AG	Silver
Ti	Titanium
Si	Silicon
MG	Magnesium
AL	Aluminum
PB	Lead
BE	Beryllium
TAN	Total Acid Number

**TYPE:**  
**Filter Material Type Codes**

BR	Black rubber / elastic
CM	Carbon seal material
CS	Plain carbon steel
CU	Copper
DL	Moly drylube
FE	Iron
FI	Fibers
FP	Fel-pro C5A
GB	Glass beads
HR	Hylomar sealant
MG	Magnesium
MO	Moly (Metal spray)
MS	400 Stainless steel
NI	Nickel
OX	Iron oxide
PH	17 - 4 PH Iron
PC	Paint chips
SG	Silicone grease
SI	Silicon
SS	300 Stainless steel
TS	BRNG Alloy
VO	Voishan seal material

# AVIATION LABORATORIES

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 07-01-1994

McBAIL CO.  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DRIVE  
  
CONCORD ,CA 94520  
USA

ENGINE S/N: 76727  
  
ENGINE MODEL: TFE731-3-1E  
AIRCRAFT: 1124 368  
TAIL NUMBER: N368ND

### GARRETT SOAP2000 SYSTEM

**\*\* CURRENT RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 06/25/94	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 07/01/94	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 7														
TSN HRS: 2317	AMOUNT:	TRACE												
TSO HRS:	TYPE:													
OIL HRS:	FORM:	FL												
FILTER HRS:	<b>*** OIL ANALYSIS RESULTS ***</b>													
OIL ADDED:	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FILTER MGS: 37	0.10	0.10	< 1.00	< 1.00	0.10	0.10								
FLASHPOINT:														
LAB FINDINGS:	;													
LAB COMMENTS: MSP 3108														

**\*\* PREVIOUS - 1 RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 06/17/94	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 06/23/94	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 11														
TSN HRS: 2313	AMOUNT:	TRACE												
TSO HRS:	TYPE:													
OIL HRS: 47	FORM:	FN CK												
FILTER HRS: 47	<b>*** OIL ANALYSIS RESULTS ***</b>													
OIL ADDED:	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FILTER MGS: 54	0.10	0.10	< 1.00	< 1.00	0.10	0.10								
FLASHPOINT:														
LAB FINDINGS:	;													
LAB COMMENTS: MSP 3108C														

**\*\* PREVIOUS - 2 RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 04/14/90	<b>*** FILTER ANALYSIS RESULTS ***</b>													
ANALYSIS DATE: 04/17/90	MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 32														
TSN HRS: 1327	AMOUNT:	TRACE												
TSO HRS: 0	TYPE:													
OIL HRS: 18	FORM:													
FILTER HRS: 18	<b>*** OIL ANALYSIS RESULTS ***</b>													
OIL ADDED: 0.00	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FILTER MGS: 18	0.50	0.30	< 1.00	< 1.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00			
FLASHPOINT: 0														
LAB FINDINGS:	;													
LAB COMMENTS: RENTAL PHX KIT														

**MATL:**  
**Filter Material Codes**

ST ST Stainless steel  
CB ST Carbon Steel  
AL ST Alloy steel  
M50 Bearing alloy  
MAGNS Magnesium  
ALUM Aluminum

**AMOUNT:**  
**Filter Amount Codes**

TRACE 0-10%  
MINOR 10-40%  
MAJOR 40-100%  
Percent of total filter weight

**FORM:**  
**Filter Material**  
**Form Codes**

BF Brass fines  
BZ Bronze fines  
CK Chunks  
CP Corrosion products  
FL Flakes  
FN Fines  
MC Machining chips  
OP Oxidized platelets  
PL Plating  
PT Platelets  
SL Slivers  
ST Stringers

**OIL CODES**

FE Iron  
CU Copper  
Ni Nickel  
CR Chromium  
AG Silver  
Ti Titanium  
Si Silicon  
MG Magnesium  
AL Aluminum  
PB Lead  
BE Beryllium  
TAN Total Acid Number

**TYPE:**  
**Filter Material Type Codes**

BR Black rubber / elastic  
CM Carbon seal material  
CS Plain carbon steel  
CU Copper  
DL Moly drylube  
FE Iron  
FI Fibers  
FP Fel-pro C5A  
GB Glass beads  
HR Hylomar sealant  
MG Magnesium  
MO Moly (Metal spray)  
MS 400 Stainless steel  
NI Nickel  
OX Iron oxide  
PH 17 - 4 PH Iron  
PC Paint chips  
SG Silicone grease  
SI Silicon  
SS 300 Stainless steel  
TS BRNG Alloy  
VO Voishan seal material

# AVIATION LABORATORIES

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 06-24-1994

McBAIL CO.  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DRIVE

ENGINE S/N: 77488

ENGINE MODEL: TFE731-3-16  
AIRCRAFT: WW124 368  
TAIL NUMBER:

CONCORD ,CA 94520  
USA

### GARRETT SDAP2000 SYSTEM

\*\* CURRENT RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 06/17/94		*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE: 06/23/94		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 12															
TSN HRS: 5408		AMOUNT:	TRACE				TRACE				TRACE	TRACE	MAJOR	TRACE	
TSO HRS:		TYPE:													
OIL HRS: 220		FORM:	FL												
FILTER HRS: 140															
OIL ADDED:		*** OIL ANALYSIS RESULTS ***													
FILTER MGS: 30		FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FLASHPOINT:		0.10	0.10	< 1.00	< 1.00	0.10	0.10								
LAB FINDINGS:		;													
LAB COMMENTS: MSP 3108C															

\*\* PREVIOUS - 1 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 07/30/93		*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE: 08/01/93		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 6															
TSN HRS: 5307		AMOUNT:	TRACE				TRACE				TRACE	TRACE	MAJOR		
TSO HRS:		TYPE:													
OIL HRS: 29		FORM:	ST												
FILTER HRS: 29															
OIL ADDED:		*** OIL ANALYSIS RESULTS ***													
FILTER MGS: 43		FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FLASHPOINT:		0.10	0.10	< 1.00	< 1.00	0.10	0.10								
LAB FINDINGS:		;													
LAB COMMENTS: MSP 3108															

\*\* PREVIOUS - 2 RECOMMENDATION \*\* IMPORTANT!! SEND A RESAMPLE AFTER 25 HOURS.

SAMPLE DATE: 05/06/93		*** FILTER ANALYSIS RESULTS ***													
ANALYSIS DATE: 05/12/93		MATL:	ST	ST	CB	ST	AL	ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER: 8															
TSN HRS: 5013		AMOUNT:	TRACE								TRACE	MINOR	MAJOR		
TSO HRS:		TYPE:													
OIL HRS: 400		FORM:													
FILTER HRS: 108															
OIL ADDED:		*** OIL ANALYSIS RESULTS ***													
FILTER MGS: 55		FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN			
FLASHPOINT:		0.10	0.10	< 1.00	< 1.00	0.10	0.10								
LAB FINDINGS: MINOR ALUMINUM		;													
LAB COMMENTS: MSP 3108 1-3-94															

**MATL:**  
**Filter Material Codes**

ST ST	Stainless steel
CB ST	Carbon Steel
AL ST	Alloy steel
MS0	Bearing alloy
MAGNS	Magnesium
ALUM	Aluminum

**AMOUNT:**  
**Filter Amount Codes**

TRACE	0-10%
MINOR	10-40%
MAJOR	40-100%

Percent of total filter weight

**FORM:**  
**Filter Material**  
**Form Codes**

BF	Brass fines
BZ	Bronze fines
CK	Chunks
CP	Corrosion products
FL	Flakes
FN	Fines
MC	Machining chips
OP	Oxidized platelets
PL	Plating
PT	Platelets
SL	Slivers
ST	Stringers

**TYPE:**  
**Filter Material Type Codes**

BR	Black rubber / elastic
CM	Carbon seal material
CS	Plain carbon steel
CU	Copper
DL	Moly drylube
FE	Iron
FI	Fibers
FP	Fel-pro C5A
GB	Glass beads
HR	Hylomar sealant
MG	Magnasium
MO	Moly (Metal spray)
MS	400 Stainless steel
NI	Nickel
OX	Iron oxide
PH	17 - 4 PH Iron
PC	Paint chips
SG	Silicone grease
SI	Silicon
SS	300 Stainless steel
TS	BRNG Alloy
VO	Voishan seal material

**OIL CODES**

FE	Iron
CU	Copper
Ni	Nickel
CR	Chromium
AG	Silver
Ti	Titanium
Si	Silicon
MG	Magnesium
AL	Aluminum
PB	Lead
BE	Beryllium
TAN	Total Acid Number

# AVIATION LABORATORIES

ONG

17

0

LAB FINDINGS  
LAB COMMENTS: MSP 31080 1-3-93



# AVIATION LABORATORIES

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 05-15-1995

McBAIL CO.  
ATTN: ARNOLD PETERSON  
1450 SALLY RIDE DRIVE

ENGINE S/N: 77488

CONCORD ,CA 94520  
USA

ENGINE MODEL: TFE731-3-1G  
AIRCRAFT: WW1124 368  
TAIL NUMBER:

### GARRETT SOAP2000 SYSTEM

\*\* CURRENT RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATA		*** FILTER ANALYSIS RESULTS ***										
ANALYSIS DATE:	05/15/95	MATL:	ST ST	CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER:	13	AMOUNT:	TRACE									
TSN HRS:	5568	TYPE:	TRACE									
TSO HRS:	0	FORM:	FN									
OIL HRS:	150	*** OIL ANALYSIS RESULTS ***										
FILTER HRS:	0	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN
OIL ADDED:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FILTER MGS:	40											
FLASHPOINT:	0											

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108

\*\* PREVIOUS - 1 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATA		*** FILTER ANALYSIS RESULTS ***										
ANALYSIS DATE:	06/23/94	MATL:	ST ST	CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER:	12	AMOUNT:	TRACE									
TSN HRS:	5408	TYPE:	TRACE									
TSO HRS:		FORM:	FL									
OIL HRS:	220	*** OIL ANALYSIS RESULTS ***										
FILTER HRS:	140	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN
OIL ADDED:		0.10	0.10	< 1.00	< 1.00	0.10	0.10					
FILTER MGS:	30											
FLASHPOINT:												

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108C

\*\* PREVIOUS - 2 RECOMMENDATION \*\* NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATA		*** FILTER ANALYSIS RESULTS ***										
ANALYSIS DATE:	08/01/93	MATL:	ST ST	CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC
SAMPLE NUMBER:	6	AMOUNT:	TRACE									
TSN HRS:	5307	TYPE:	TRACE									
TSO HRS:		FORM:	ST									
OIL HRS:	29	*** OIL ANALYSIS RESULTS ***										
FILTER HRS:	29	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN
OIL ADDED:		0.10	0.10	< 1.00	< 1.00	0.10	0.10					
FILTER MGS:	43											
FLASHPOINT:												

LAB FINDINGS: ; ; ; ;  
LAB COMMENTS: MSP 3108



**MATL:**  
**Filter Material Codes**

ST	ST	Stainless steel
CB	ST	Carbon Steel
AL	ST	Alloy steel
M50		Bearing alloy
MAGNS		Magnesium
ALUM		Aluminum

**AMOUNT:**  
**Filter Amount Codes**

TRACE	0-10%
MINOR	10-40%
MAJOR	40-100%

Percent of total filter weight

**FORM:**  
**Filter Material**  
**Form Codes**

BF	Brass fines
BZ	Bronze fines
CK	Chunks
CP	Corrosion products
FL	Flakes
FN	Fines
MC	Machining chips
OP	Oxidized platelets
PL	Plating
PT	Platelets
SL	Slivers
ST	Stringers

**OIL CODES**

FE	Iron
CU	Copper
Ni	Nickel
CR	Chromium
AG	Silver
Ti	Titanium
Si	Silicon
MG	Magnesium
AL	Aluminum
PB	Lead
BE	Beryllium
TAN	Total Acid Number

**TYPE:**  
**Filter Material Type Codes**

BR	Black rubber / elastic
CM	Carbon seal material
CS	Plain carbon steel
CU	Copper
DL	Moly drylube
FE	Iron
FI	Fibers
FP	Fel-pro C5A
GB	Glass beads
HR	Hylomar sealant
MG	Magnesium
MO	Moly (Metal spray)
MS	400 Stainless steel
NI	Nickel
OX	Iron oxide
PH	17 - 4 PH Iron
PC	Paint chips
SG	Silicone grease
SI	Silicon
SS	300 Stainless steel
TS	BRNG Alloy
VO	Voishan seal material

# AVIATION LABORATORIES

12911 BUD LONG  
GARDENA, CALIFORNIA 90247  
(310) 217-9369

## S. O. A. P. RESULTS

DATE: 06-02-1995

APRI AVIATION INC.  
ATTN: ARNOLD PETERSON  
1448 SALLY RIDE DR.

ENGINE S/N: 77482

CONCORD ,CA 94520  
USA

ENGINE MODEL: TFE731-3-1G  
AIRCRAFT: 1124 368  
TAIL NUMBER: N368MD

### GARRETT SOAP2000 SYSTEM

**\*\* CURRENT RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 05/31/95 ANALYSIS DATE: 06/02/95 SAMPLE NUMBER: 3 TSN HRS: 5326 TSO HRS: OIL HRS: FILTER HRS: 22 OIL ADDED: FILTER MGS: 27 FLASHPOINT:	MATL: ST ST	*** FILTER ANALYSIS RESULTS ***						*** RESULTS ***			
		CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
AMOUNT: TRACE							TRACE	TRACE	MAJOR		
		*** OIL ANALYSIS RESULTS ***						*** RESULTS ***			
	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN
	0.10	0.10	< 1.00	< 1.00	0.10	0.10					

LAB FINDINGS: LAST REC'M WAS RESAMPLE- ;  
LAB COMMENTS: MSP 3108

**\*\* PREVIOUS - 1 RECOMMENDATION \*\*** IMPORTANT!! SEND A RESAMPLE AFTER 25 HOURS.

SAMPLE DATE: 05/10/95 ANALYSIS DATE: 05/15/95 SAMPLE NUMBER: 12 TSN HRS: 5303 TSO HRS: 0 OIL HRS: 150 FILTER HRS: 150 OIL ADDED: 0.00 FILTER MGS: 40 FLASHPOINT: 0	MATL: ST ST	*** FILTER ANALYSIS RESULTS ***						*** RESULTS ***			
		CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
AMOUNT: TRACE							TRACE	TRACE	MAJOR		
						PT		FN	CK		
		*** OIL ANALYSIS RESULTS ***						*** RESULTS ***			
	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

LAB FINDINGS: M50 TOOL STEEL PLATELETS ;CSE-JIM HUBBARD;  
LAB COMMENTS: MSP 3108

1 MG OF SLIGHTLY OXIDIZED PLATELETS

**\*\* PREVIOUS - 2 RECOMMENDATION \*\*** NORMAL SAMPLE - CONTINUE SENDING SAMPLES AT THE RECOMMENDED INTERVAL.

SAMPLE DATE: 07/30/93 ANALYSIS DATE: 08/01/93 SAMPLE NUMBER: 4 TSN HRS: 5307 TSO HRS: OIL HRS: 428 FILTER HRS: 137 OIL ADDED: FILTER MGS: 58 FLASHPOINT:	MATL: ST ST	*** FILTER ANALYSIS RESULTS ***						*** RESULTS ***			
		CB ST	AL ST	M50	COPPER	SILVER	MAGNS	ALUM	GRIT	MISC	
AMOUNT: TRACE							TRACE	TRACE	MAJOR		
						FN					
		*** OIL ANALYSIS RESULTS ***						*** RESULTS ***			
	FE	CU	NI	CR	AG	MG	AL	PB	BE	OTHER	TAN
	0.10	0.10	< 1.00	< 1.00	0.10	0.10					

LAB FINDINGS:  
LAB COMMENTS: MSP 3108

**MATL:**  
**Filter Material Codes**

ST ST	Stainless steel
CB ST	Carbon Steel
AL ST	Alloy steel
M50	Bearing alloy
MAGNS	Magnesium
ALUM	Aluminum

**AMOUNT:**  
**Filter Amount Codes**

TRACE	0-10%
MINOR	10-40%
MAJOR	40-100%

Percent of total filter weight

**FORM:**  
**Filter Material**  
**Form Codes**

BF	Brass fines
BZ	Bronze fines
CK	Chunks
CP	Corrosion products
FL	Flakes
FN	Fines
MC	Machining chips
OP	Oxidized platelets
PL	Plating
PT	Platelets
SL	Slivers
ST	Stringers

**TYPE:**  
**Filter Material Type Codes**

BR	Black rubber / elastic
CM	Carbon seal material
CS	Plain carbon steel
CU	Copper
DL	Moly drylube
FE	Iron
FI	Fibers
FP	Fel-pro C5A
GB	Glass beads
HR	Hylomar sealant
MG	Magnesium
MO	Moly (Metal spray)
MS	400 Stainless steel
NI	Nickel
OX	Iron oxide
PH	17 - 4 PH Iron
PC	Paint chips
SG	Silicone grease
SI	Silicon
SS	300 Stainless steel
TS	BRNG Alloy
VO	Voishan seal material

**OIL CODES**

FE	Iron
CU	Copper
Ni	Nickel
CR	Chromium
AG	Silver
Ti	Titanium
Si	Silicon
MG	Magnesium
AL	Aluminum
PB	Lead
BE	Beryllium
TAN	Total Acid Number