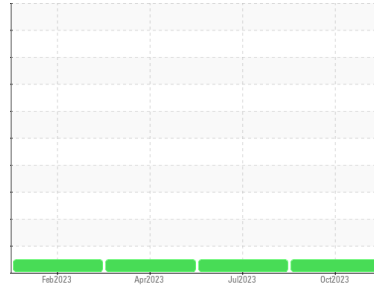




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**(CFFAP)**  
 Machine Id  
**[CFFAP] KING AIR BEECHCRAFT BE200 PCE80202**  
 Component  
**Left Jet Turbine**  
 Fluid  
**EASTMAN TURBO OIL 2380 (12 QTS)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.

### Contaminants

The water content is negligible. There is no indication of any contamination in the oil.

### Oil Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>WC0852083</b>   | WC0827508   | WC0808337   |
| Sample Date   | Client Info |             | <b>05 Oct 2023</b> | 12 Jul 2023 | 26 Apr 2023 |
| TSN           | hrs         | Client Info | <b>28681</b>       | 28456       | 28456       |
| TSO           | hrs         | Client Info | <b>3050</b>        | 2825        | 2630        |
| Oil Age       | hrs         | Client Info | <b>1008</b>        | 784         | 588         |
| Oil Changed   |             | Client Info | <b>Not Changed</b> | Not Changed | Not Changed |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR METALS

|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Iron      | ppm    | ASTM D5185(m) >8 | <b>0</b>     | 0        | 0        |
| Chromium  | ppm    | ASTM D5185(m) >2 | <b>0</b>     | 0        | 0        |
| Nickel    | ppm    | ASTM D5185(m) >2 | <b>&lt;1</b> | <1       | <1       |
| Titanium  | ppm    | ASTM D5185(m) >2 | <b>0</b>     | 0        | 0        |
| Silver    | ppm    | ASTM D5185(m) >2 | <b>&lt;1</b> | 0        | 0        |
| Aluminum  | ppm    | ASTM D5185(m) >2 | <b>0</b>     | 0        | 0        |
| Lead      | ppm    | ASTM D5185(m) >3 | <b>0</b>     | 0        | 0        |
| Copper    | ppm    | ASTM D5185(m) >3 | <b>&lt;1</b> | 0        | 0        |
| Tin       | ppm    | ASTM D5185(m) >2 | <b>0</b>     | 0        | 0        |
| Antimony  | ppm    | ASTM D5185(m)    | <b>0</b>     | <1       | <1       |
| Vanadium  | ppm    | ASTM D5185(m)    | <b>0</b>     | 0        | 0        |
| Beryllium | ppm    | ASTM D5185(m)    | <b>0</b>     | 0        | 0        |
| Cadmium   | ppm    | ASTM D5185(m)    | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base         | current      | history1 | history2 |
|------------|--------|--------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185(m) 0    | <b>&lt;1</b> | <1       | <1       |
| Barium     | ppm    | ASTM D5185(m) 0    | <b>&lt;1</b> | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185(m) 0    | <b>0</b>     | 0        | 0        |
| Manganese  | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | 0        |
| Magnesium  | ppm    | ASTM D5185(m) 0    | <b>0</b>     | 0        | <1       |
| Calcium    | ppm    | ASTM D5185(m) 0    | <b>0</b>     | <1       | 0        |
| Phosphorus | ppm    | ASTM D5185(m) 2500 | <b>2665</b>  | 2784     | 2713     |
| Zinc       | ppm    | ASTM D5185(m) 0    | <b>&lt;1</b> | 2        | <1       |
| Sulfur     | ppm    | ASTM D5185(m) 0    | <b>3</b>     | <1       | <1       |
| Lithium    | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | <1       | <1       |

## CONTAMINANTS

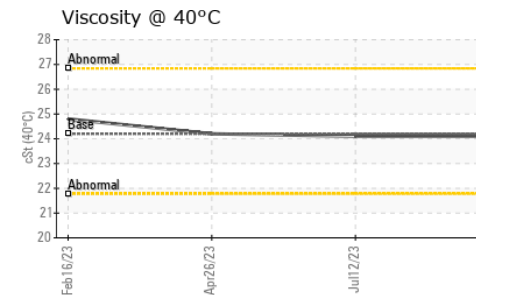
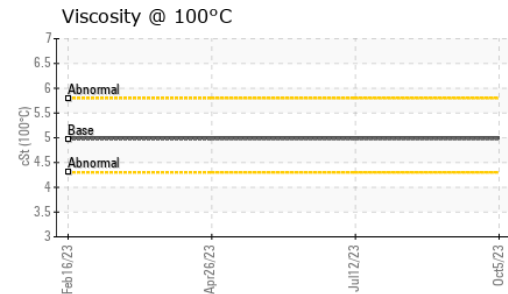
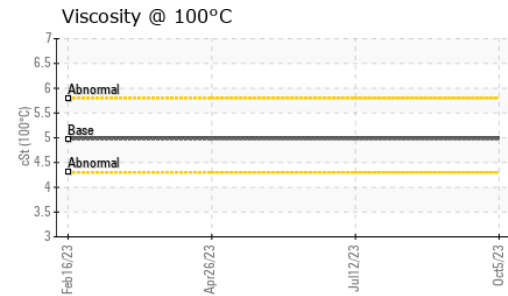
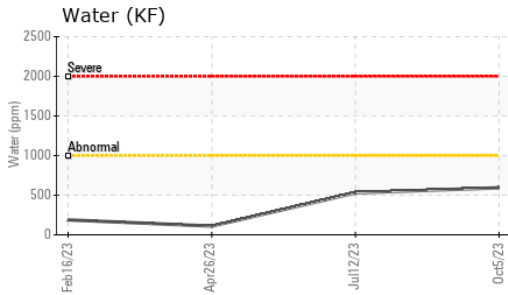
|           | method | limit/base        | current      | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185(m) >8  | <b>&lt;1</b> | 6        | 4        |
| Sodium    | ppm    | ASTM D5185(m)     | <b>&lt;1</b> | <1       | 0        |
| Potassium | ppm    | ASTM D5185(m) >20 | <b>0</b>     | <1       | <1       |
| Water     | %      | ASTM D6304* >0.1  | <b>0.059</b> | 0.052    | 0.011    |
| ppm Water | ppm    | ASTM D6304* >1000 | <b>593.8</b> | 529.9    | 110.1    |

## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* 0.43 | <b>0.37</b> | 0.33     | 0.38     |



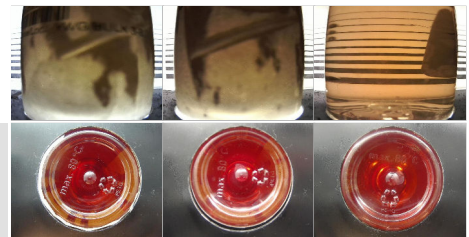
# OIL ANALYSIS REPORT



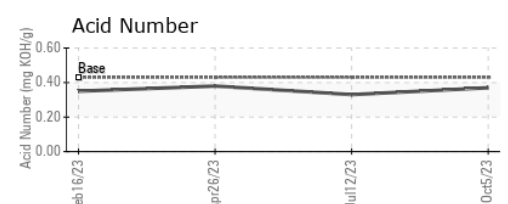
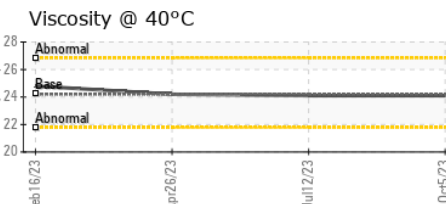
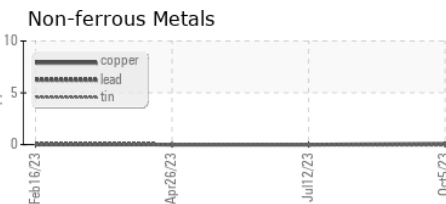
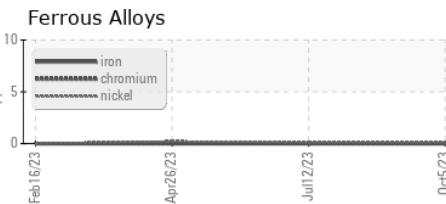
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | Visual*    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | Visual*    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | Visual*    | NONE    | NONE     | NONE     |
| Silt             | scalar | Visual*    | NONE    | NONE     | NONE     |
| Debris           | scalar | Visual*    | NONE    | NONE     | NONE     |
| Sand/Dirt        | scalar | Visual*    | NONE    | NONE     | NONE     |
| Appearance       | scalar | Visual*    | NORML   | NORML    | NORML    |
| Odor             | scalar | Visual*    | NORML   | NORML    | NORML    |
| Emulsified Water | scalar | Visual*    | >0.1    | NEG      | NEG      |
| Free Water       | scalar | Visual*    |         | NEG      | NEG      |

| FLUID PROPERTIES     | method | limit/base    | current | history1    | history2 |      |
|----------------------|--------|---------------|---------|-------------|----------|------|
| Visc @ 40°C          | cSt    | ASTM D7279(m) | 24.2    | <b>24.1</b> | 24.1     | 24.2 |
| Visc @ 100°C         | cSt    | ASTM D7279(m) | 4.97    | <b>5</b>    | 5        | 5    |
| Viscosity Index (VI) | Scale  | ASTM D2270*   | 134     | <b>137</b>  | 137      | 136  |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
| Color         |        |            |         |          |          |
| Bottom        |        |            |         |          |          |



## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0852083 **Received** : 17 Oct 2023  
**Lab Number** : 02589600 **Diagnosed** : 18 Oct 2023  
**Unique Number** : 5658666 **Diagnostician** : Kevin Marson  
**Test Package** : AVI 3

**FAST AIR LTD**  
 80 HANGAR LINE ROAD  
 WINNIPEG, MB  
 CA R3J 3Y7  
 Contact: Denis Bourgouin  
 denis.bourgouin@flyfastair.com  
 T: (204)772-7622  
 F: (204)783-2483

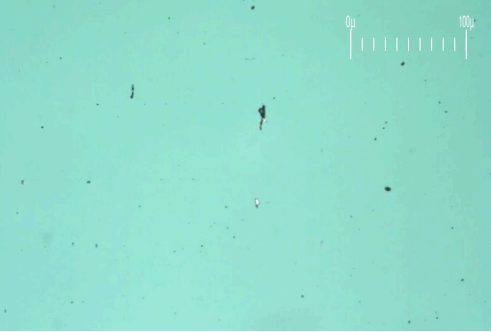
To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.



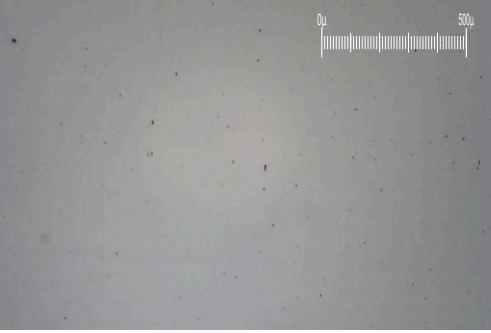
# FERROGRAPHY REPORT

Area  
**(CFFAP)**  
 Machine Id  
**[CFFAP] KING AIR BEECHCRAFT BE200 PCE80202**  
 Component  
**Left Jet Turbine**  
 Fluid  
**EASTMAN TURBO OIL 2380 (12 QTS)**

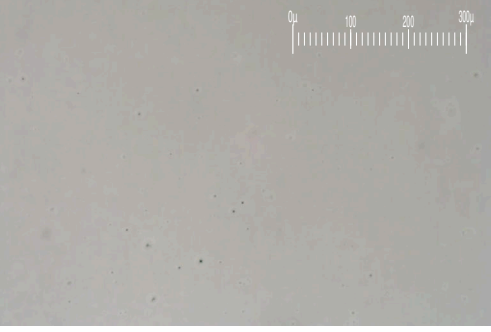
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

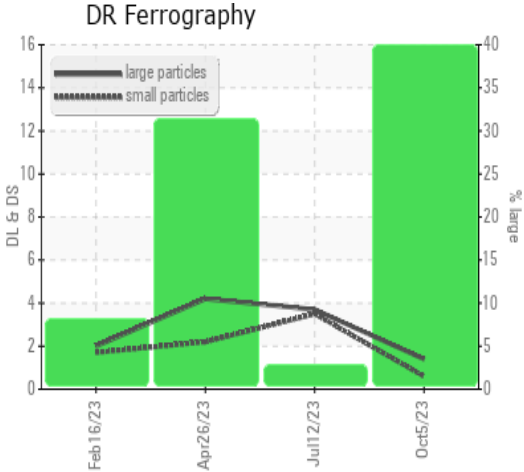


| DR-FERROGRAPHY             |   | method   | limit/base | current    | history1 | history2 |
|----------------------------|---|----------|------------|------------|----------|----------|
| Large Particles            |   | DR-Ferr* |            | <b>1.4</b> | 3.7      | 4.2      |
| Small Particles            |   | DR-Ferr* |            | <b>0.6</b> | 3.5      | 2.2      |
| Total Particles            |   | DR-Ferr* | >---       | <b>2</b>   | 7.2      | 6.4      |
| Large Particles Percentage | % | DR-Ferr* |            | <b>40</b>  | 2.8      | 31.3     |
| Severity Index             |   | DR-Ferr* |            | <b>1</b>   | 1        | 8        |

| FERROGRAPHY           |            | method      | limit/base | current    | history1 | history2 |
|-----------------------|------------|-------------|------------|------------|----------|----------|
| Ferrous Rubbing       | Scale 0-10 | ASTM D7684* |            | █ <b>1</b> | █ 2      | █ 2      |
| Ferrous Sliding       | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Ferrous Cutting       | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Ferrous Rolling       | Scale 0-10 | ASTM D7684* |            | █ <b>1</b> | █ 1      | █ 1      |
| Ferrous Break-in      | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Ferrous Spheres       | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Ferrous Black Oxides  | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Ferrous Red Oxides    | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Ferrous Corrosive     | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Ferrous Other         | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Nonferrous Rubbing    | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Nonferrous Sliding    | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Nonferrous Cutting    | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Nonferrous Rolling    | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Nonferrous Other      | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Carbonaceous Material | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Lubricant Degradation | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Sand/Dirt             | Scale 0-10 | ASTM D7684* |            | █ <b>1</b> | █ 1      | █ 1      |
| Fibres                | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Spheres               | Scale 0-10 | ASTM D7684* |            |            |          |          |
| Other                 | Scale 0-10 | ASTM D7684* |            | █ <b>1</b> | █ 1      | █ 1      |

### WEAR

All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.



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