



**CASE STUDY**

**P&W FT8 – Power Turbine Bearing Failure**

**Background**

The damage occurred after 2,500 hours of running time since installation, following a 10,000 hour overhaul. The #8 bearing within the power turbine had not been replaced as part of this overhaul.

**Event Description**

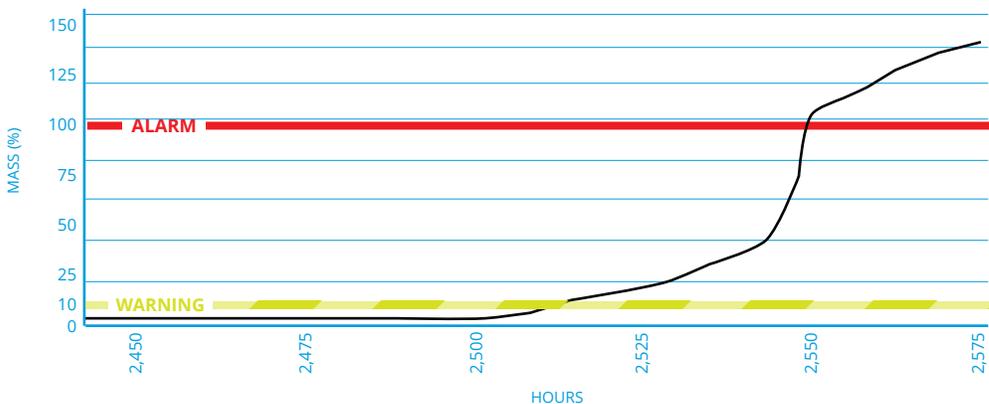
Presence of particles first detected by MetalSCAN at 2,500 operating hours, followed by a sharp rise at 2,525. Replacement power turbine dispatched from spares pool. A chip detector alarm was triggered at 2,550 hours. At 2,575 hours, the turbine was shut down based on readings from MetalSCAN and the power turbine was changed out. At shutdown, the total debris mass on #8 and #9 scavenge line was over the MetalSCAN alarm limit with no change in vibration or scavenge oil temperature. The MetalSCAN sensors monitoring the other bearings showed no rise of debris.

*“The Gastops systems have been very helpful in identifying potential problems and have enabled the plants to operate during high revenue generating periods, scheduling maintenance and repairs during optimum periods.”*

- The Operator

**Time History of Events**

ENGINE WAS RUNNING CONTINUOUSLY THROUGHOUT THIS PERIOD



Damaged Bearing

**Benefits**

- ✓ Four days of notice before shut down
- ✓ Engine ran for ~2,500 hours with virtually no debris detected
- ✓ 35 hour planning period provided
- ✓ Lease power turbine was brought to site before engine shut down
- ✓ Lost production limited to two days over low demand weekend period
- ✓ Secondary damage avoided
- ✓ Damage isolated to power turbine

LONG LIVE EQUIPMENT



**Head Office**  
1011 Polytek Street  
Ottawa ON K1J 9J3  
Canada

**Halifax Office**  
65 John Savage Avenue, Unit 5  
Dartmouth NS B3B 2C9  
Canada

**St. John's Office**  
146a Glencoe Drive  
Mount Pearl NL A1N 4S9  
Canada

Worldwide  
**+1 613 744 3530**  
North America  
**1 800 363 8658**

[gastops.com](http://gastops.com)  
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