



CASE STUDY

GE LM2500 – B Sump Bearing Spall

Background

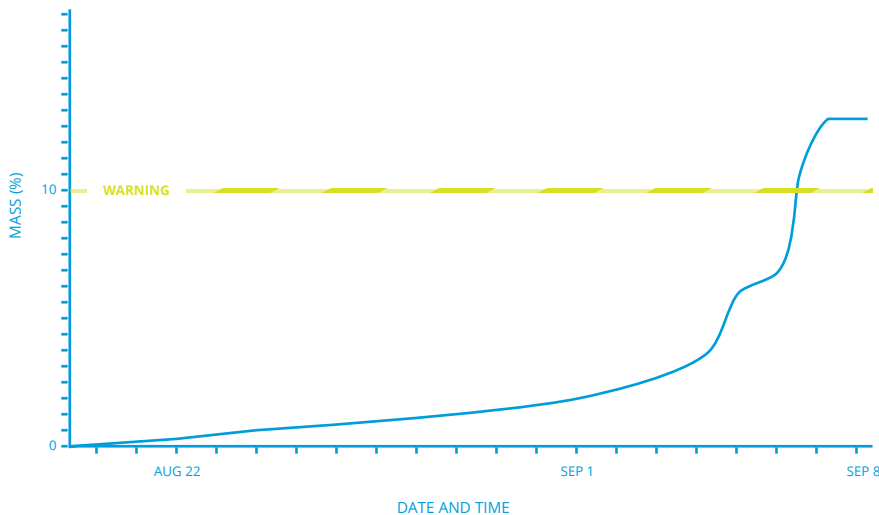
The operator has a LM2500 with six stage power turbine with MetalSCAN sensor monitoring 5 individual sumps (A, B, C, D and AGB). The engine had been operating continuously with normal/healthy indication of bearing condition using MetalSCAN.

Event Description

The baseload unit (oil & gas application) had been operating continuously for many hours when the B sump MetalSCAN sensor began to detect ferrous debris on August 18th. As the engine continued running, the counts remained well below the B sump limits, but increased slowly over the next two and a half weeks. The Gastops Remote Monitoring Team was in contact with the operator throughout the event, regularly reviewing the latest MetalSCAN data. Continued operation with close monitoring was advised. The count rate began to increase by September 3rd, indicating the trend typical of a bearing failure. The operator was able to begin planning for the eventual engine shutdown and replacement at this very early stage. By September 6th, the count rate increased rapidly and the total mass detected broke through the warning limit. The operators decided to shut down and replace the engine, due to the on-site availability of the replacement. GE analyzed the damaged bearing and identified root cause, an added benefit of the earliest possible damage detection provided by MetalSCAN.

Time History of Events

ENGINE WAS RUNNING CONTINUOUSLY THROUGHOUT THIS PERIOD



Benefits

- ✓ Only last three (3) weeks shown
- ✓ MetalSCAN provides continuous online detection of individual debris
- ✓ Isolation of debris detection to the individual sump (B sump)
- ✓ The debris detections gradually, indicating a typical bearing damage trend
- ✓ Gastops Remote Monitoring team was in constant contact with the operator
- ✓ Critical LM2500 running continued, and troubleshooting time was greatly reduced
- ✓ Having MetalSCAN monitoring saved over \$100,000 for this single event
- ✓ Very early damage allowed for root cause to be determined

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
C009773_001