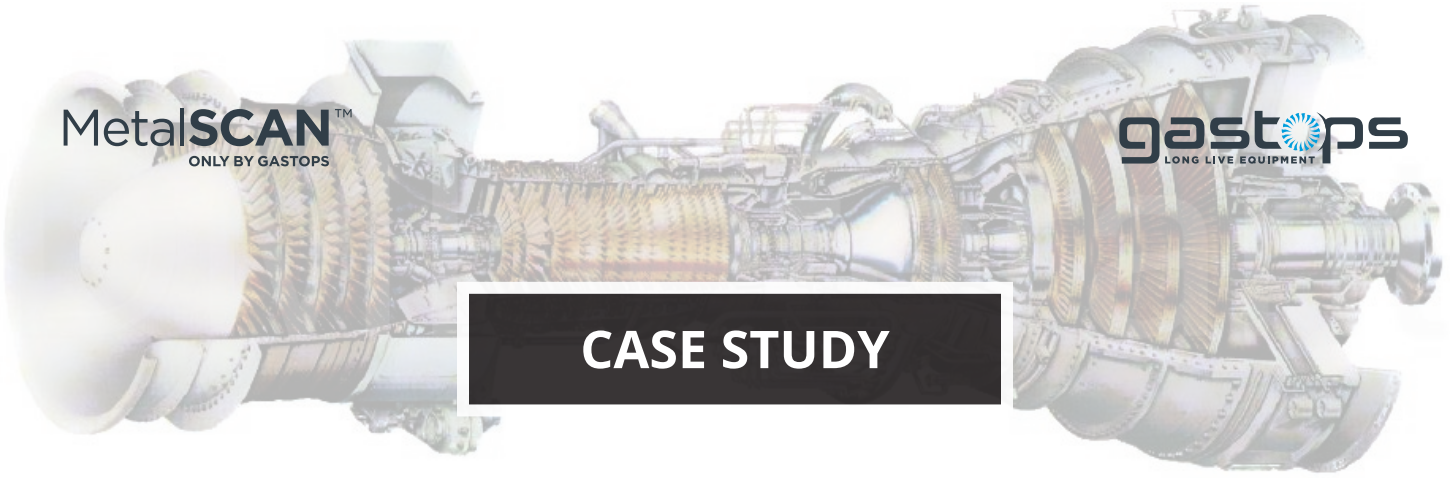


MetalSCAN™ ONLY BY GASTOPS

gastops LONG LIVE EQUIPMENT

CASE STUDY

GE LM1600 – Power Turbine Bearing Failure

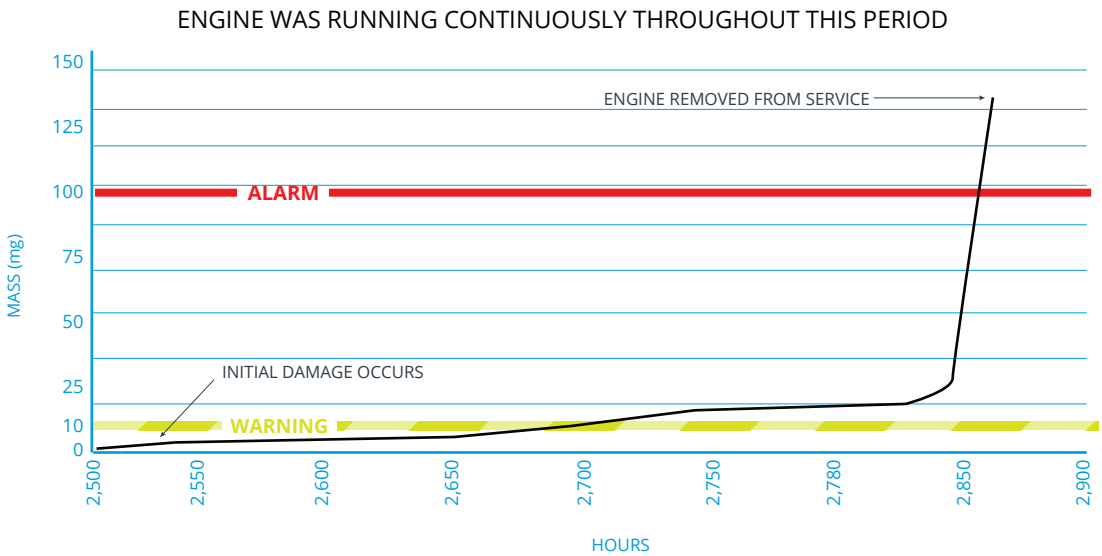
Background

The damage occured 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. A replacement power turbine was dispatched from the spares pool. A chip detector alarm was triggered at 2,550 hours. The turbine was shut down based on readings from MetalSCAN 75 operating hours after first detection 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.

Time History of Events



Benefits

- Only last 14 days shown
- Four days of notice before shut down
- 170 hour planning period provided
- Damage located to power turbine
- 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

LONG LIVE EQUIPMENT

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