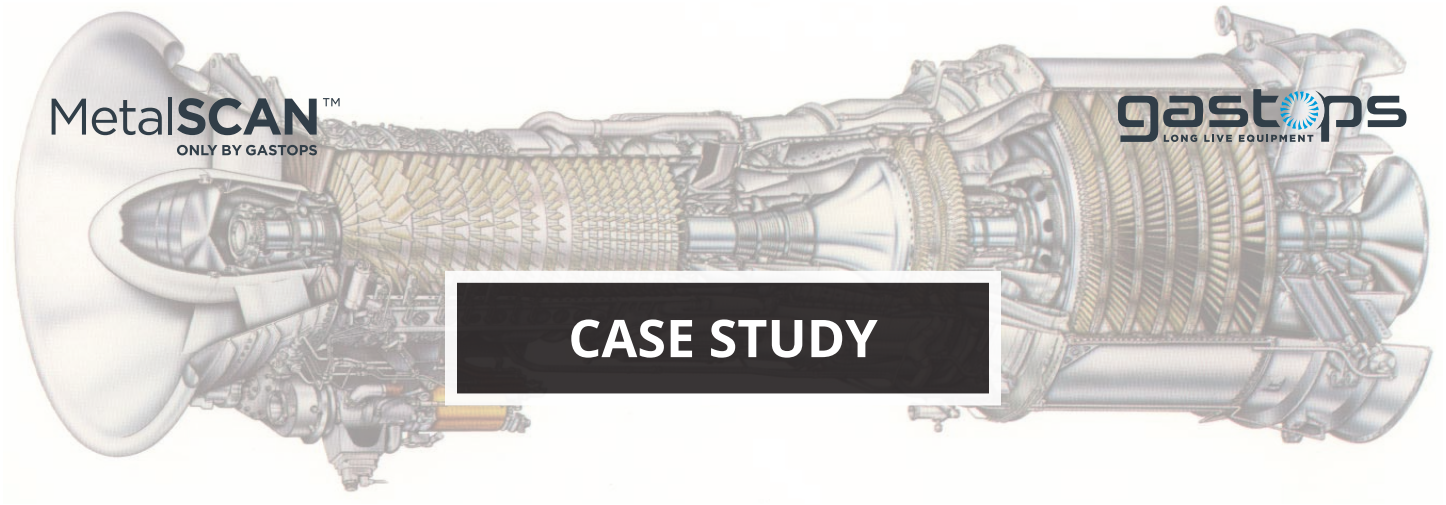


GE LM5000 – Power Turbine Bearing Failure

Background

Debris began to be detected on the power turbine sump on an LM5000 operating on an offshore platform.

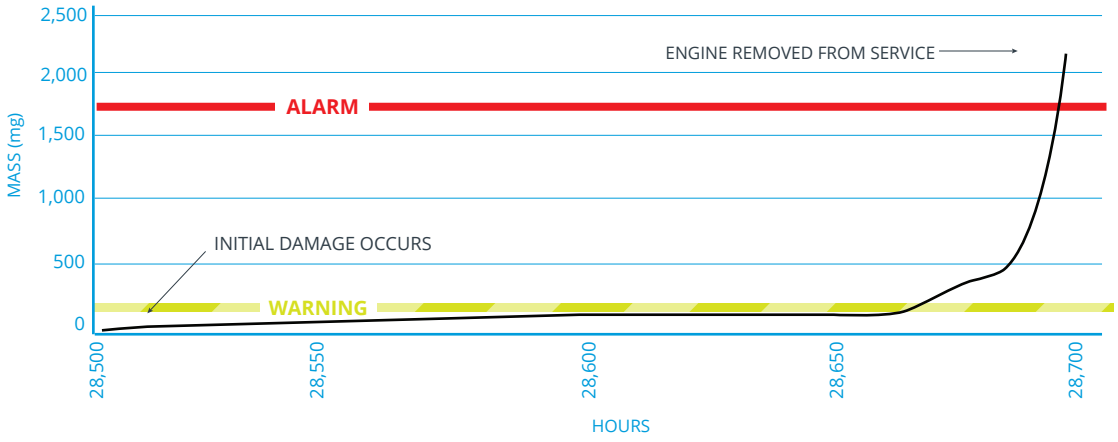
Event Description

The presence of particles indicated by MetalSCAN triggered an inspection of the PT scavenge pump magnet. A trace amount of debris was found attached to the magnet which led to the decision to keep the engine running, while closely monitoring the MetalSCAN trend. After six days, the warning limit was reached as the debris generation rate rapidly increased. After an additional 24 hours, the alarm limit was exceeded and the engine was stopped (seven days after initial debris detection).

Damage to the power turbine bearing was confirmed, but contained with no secondary damage. There was never any indication of the bearing damage by the oil sump temperature or vibration sensors. The power turbine was replaced with minimal engine down time.

Time History of Events

ENGINE WAS RUNNING CONTINUOUSLY THROUGHOUT THIS PERIOD



BENEFITS

- Only last seven days shown
- Engine ran for ~28,200 hours with virtually no debris detected
- 30 hour planning period provided
- Damaged located to power turbine
- Metallic debris was confirmed to be from power turbine bearing by inspection
- Secondary damage avoided

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