

AUXILIARY ENGINE LINE BORING AND MACHINING END TO END RESTORATION OF MAK 12M282 CASUALTY

A highly specialized offshore support vessel in Houston suffered a second catastrophic failure on one of its MAK 12M282 engines resulting in total loss on the blocks. Having just been engaged to inspect and rebuild the first, Goltens was engaged to perform the work on the second.

Goltens performed an inspection of the engines and crankshafts and it was determined that the crankshaft could be saved most economically by bench grinding in Goltens' workshop and that the metal stitching would be cost prohibitive and more economical to acquire a second hand block. Complicating matters, both damaged engines were on the same power bus and Goltens was engaged to relocate one of the remaining operational engines to replace one of the damaged engines to keep the ship operational while the other two were being rebuilt.

The customer acquired two used blocks and engaged Goltens in China to inspect one and Goltens in Dubai to inspect the other. The blocks were then shipped to Goltens in the US where the engines' defects were corrected and they were completely rebuilt.

On the second engine, it was determined that 5 of the 7 bearing caps needed to be replaced and that the engine required line boring. Additionally, the 12 upper liner landing surfaces needed to be machined. Goltens leveraged its in-situ technicians and flange facing and line boring equipment to undertake the repairs prior to rebuilding the engine.

To finish the job, Goltens' Diesel teams transported the engine, rigged the engine onto the ship and into the engine room and completed the installation and operational testing of the engines.

PROJECT FACTS: MAK 12M282

Engine Output:	2400KW
RPM:	1,000 RPM
Main Bearing Pocket Diameter:	212 mm
Pockets Line Bored:	7 of 7



REPAIRS CONSISTED OF:

- Inspection of damaged Engine and Crankshaft
- Disassembly and removal of engine
- Rigging and installation of operational engine to other bus to keep ship operational
- Inspection of replacement block for suitability
- Bench grinding of crankshaft
- Straightening of damaged camshaft
- Laser bore alignment check of all main journal bores
- Line Boring of 7 of 7 main bearing pockets
- Flange facing of 12 upper line landing surfaces
- Reassembly of all engine components
- Rebuild of engine in Goltens workshop
- Transport, Rigging, Installation of rebuilt engine
- Completion of pre-start checks and operational run in of the engine and operational testing of rebuilt engine.

RESULTS:

Goltens' full spectrum of diesel and In-Situ machining capabilities and its global network, enabled the customer to deal with one company to complete inspections, overhaul, machining and installation through the entire repair.

The vessel was kept in operation throughout the process and was restored to full capability in a highly cost effective and efficient manner.

