

## IN-SITU MACHINING RETURNS ORE CARRIER TO SERVICE

### MITSUBISHI 6UECE85LS-II CRANKSHAFT

Goltens has the capability to perform all kinds of services related to diesel engine casualty repair and maintenance regardless of dimension or complexity. So when an ore carrier experienced a casualty to its 6UEC85LS main engine, Goltens (an authorized repair agent for UEC Diesel engines) was awarded the job to machine the heavily damaged 950 mm diameter journal and return the ship to service.

With the ship out of service, Goltens immediately mobilized the in-situ machinists and special equipment onboard the ship in a yard in Qinhuangdao in Northern China. Due to the size of the journal, amount of material to be removed and the urgency of the job, teams from two Goltens stations joined together to shorten the repair time and restore the engine to service as soon as possible.

After completing inspection of the crankshaft, it was determined that the fillet radii were damaged and needed to be machined and that crankshaft damage was significant and would require 8-10mm to be machined from the crankpin surface to restore the engine to operation. Detailed repair procedures and work scopes were drafted by Goltens and approved by the customer's superintendent engineer.

#### JOURNAL REPAIRS CONSISTED OF:

- Hardness check and crack test via Magnaflux on No.1 crankpin journal
- Machining crankpin fillet radii
- Machining M/E crankpin journal to undersize -10.00mm (Final OD: Ø940.00mm)
- Fabrication of dummy bearing for blue oil checking
- Finish polishing of crankpin journal
- Final inspection of crankpin journal

#### RESULTS:

Goltens technicians performed the complete cutting and polishing job within 7 days using Goltens' proprietary crankshaft/journal machining tooling. The use of the cutting tools reduced the repair time by as much as 30 days when compared to traditional crankshaft grinding, saving the vessel owner significant downtime and lost operational costs.

#### PROJECT FACTS:

Engine Type:	Mitsubishi 6UEC85LS-II
Engine Output:	22,432 kW
Original Crankpin Diameter:	950.00 mm
Distance between Webs:	335.00mm
Finished Crankpin Diameter :	940.00 mm

