

## Press Information

### IN-SITU RESTORATION OF PIELSTICK CYLINDER DIMENSIONS ELIMINATES NEED FOR COSTLY ENGINE REPLACEMENT

Metallock Engineering's ability to successfully in-situ machine entablature tops and lower liner landings on a 16-cylinder Pielstick 2 Series marine engine has saved substantial downtime and money at A&P Wallsend-on-Tyne shipyard.

During the refurbishment and conversion of a 27-year old vessel, it was discovered that the main, engine was badly worn to a degree that complete replacement was considered. Having worked with Metallock on previous projects, A&P approached the company and asked it to evaluate the possibilities of repair.

Because the main bolts on a Pielstick engine are located inside the top seal face, use of standard equipment for machining the required areas on conventional marine engines was precluded. The water jacket is also removable so to overcome these differences Metallock designed a machine that is specially suited to these engines and which is capable of both refacing the entablature tops and boring out the lower liner landings.

Using this device at Wallsend, Imm was machined off the entablature top, and the lower liner landings bored oversize, leaving a shoulder at the bottom, to accept a precisely machined ring. This ring was shrink fitted into place and needed no further machining, thus restoring the bore's original dimensions to accept a new cylinder liner.

While these operations were being performed in-situ, Imm was being removed from the water jacket locating face in a nearby workshop and a 2mm thick make-up ring produced. On reassembly, these rings compensated for the 2mm of material that had been removed.

The Metallock facing/boring machine is designed to locate accurately on the machined recess at the top of the entablature and be sufficiently robust to enable boring of the lower liner landing with no additional support other than that provided from the top of the cylinder. The tool is driven by hydraulic motor.

As well as saving the cost of a replacement, Metallock was able to dramatically reduce the refurbishment time at Wallsend as a new Pielstick engine of this size would not be available ex-stock and would have had a delivery time of several months.

Following the successful restoration of the Pielstick engine, Metallock carried out a similar exercise on the lower liner landings on a MAN 23-5/33 auxiliary engine in the same vessel.



*Metallock designed a machine specially suited to Pielstick engines enabling it to successfully machine entablature tops and lower liner landings on a 16-cylinder 2 Series marine engine.*

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