

# MarineShaft - “Many Tanker Operators don’t realise they can repair shafts”

Many tanker operators do not realise that it is possible to fix propeller shafts which have got bent, opting instead for an expensive replacement

**T**he shaft of a tanker – which connects the propeller to the engine – can get slightly bent if the vessel has a minor knock, such as a propeller hitting an obstruction, or if a bearing fails. This means an urgent repair, because an engine cannot drive a propeller through a bent shaft.

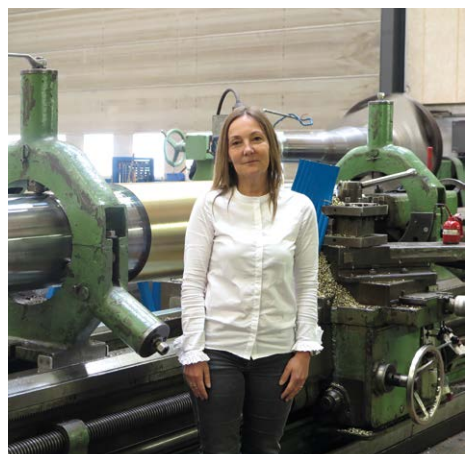
Tanker operators often assume that they need to buy a new shaft, and wait while it is made. A complex repair also means higher stakes in any discussion between parties involved in the accident, so a difficult negotiation.

But MarineShaft of Hirthals, North Denmark, has a business doing “cold straightening”- straightening out the existing shaft.

Marine Shaft says it has carried out a number of repairs on tankers. They have been repairing shafts for more than 50 years.

It can also apply to the shafts which connect steering to rudders, known as rudder stock.

“I think it is important for any operator to know the straightening repair possibility – regardless of the type of vessel, because you never know if you might need it,” says Hanne Magnussen, marketing manager of Marine Shaft.



**Hanne Magnussen, marketing manager of Marine Shaft**



**Straightening a shaft**

Straightening can save time, money, and also achieve environmental benefits.

The worst bent shaft the company ever repaired was 1000mm out of line. The vessel had hit a rock off the Norwegian coast, and suffered extensive propeller shaft and rudder damage. The propeller shaft was blocked in turning, and pulled approximately a metre out of the stern tube, becoming heavily bent.

Marine Shaft straightened the shaft to 0.02mm out of line – where a new shaft can be up to 0.05mm out of line. “We are talking very narrow numbers here – the thickness of a hair,” she says.

The manufacturing of a new propeller shaft can take several months. But the shaft could be repaired within a couple of weeks.

But even slightly bent shafts need to be straightened, otherwise they cause vibration and damage, she says.

If there is any vibration, it could turn out to be a huge cost saver to check the shaft alignment.

MarineShaft can straighten shafts from 20 mm up to 1,500 mm in diameter, and no limit to in length. They use a hydraulic press, designed and built in house. The maximum press capacity is 8,000 tonnes.

The company has propeller shafts and rudder stocks sent from all over the world. Time and price quotations can usually be provided based on photos.

In many cases the work can be completed in a few days, much faster than the time to make and deliver a new shaft.

The know-how of how to straighten shafts is kept as a company secret. It is not “something you learn by book,” Ms Magnussen says.

The process is fully approved by “all major classification societies” and considered as a permanent repair, equivalent to a new shaft. The service includes thoroughly inspecting the shaft for cracks.

It does not adversely affect the metallurgy of the shaft material – because the straightening can actually release stress from the material. Although other straightening methods do put stress on the material.

The equipment is hydraulic presses with numerical control and sensors.

An article published in the in-house magazine for insurance company GARD said that large diameter shafts are often subject to bending, which can occur during manufacturing, processing or in subsequent use.