MAIB

MARINE ACCIDENT INVESTIGATION BRANCH

FLYER TO THE SHIPPING INDUSTRY

Hazardous Incident - *Norma* - 21 June 2008

Figure 1

Norma

On 21 June 2008, *Norma*, a Belgium registered self-propelled crane barge **(Figure 1)** was assisting in a salvage operation to remove a wreck in the Dover Strait. By 1000, the vessel's anchors were holding her in position, and the master instructed the OOW to switch off the vessel's Voith Schneider propellers. At 1115, the master signed the diving contractor's 'permit to dive' request, on which he verified that the vessel's engines were stopped and isolated. In fact, the propellers were still rotating. The OOW had turned the steering control switch to 'off' which only disabled the control of the pitch of the propeller blades; he did not instruct the duty engineer to stop the electric motors.

The diver **(Figure 2)** entered the water and, during his descent to a depth of about 20m, the umbilical containing his air supply and communication links was set towards the aft propeller by the tidal stream. The umbilical, along with a polypropylene rope the diver was carrying, then became entangled in the propeller and the diver was pulled rapidly towards its rotating blades. Although spinning, the diver managed to switch to the air supply provided by his 'bail-out' bottle.

Figure 2

Diver

Figure 3

Voith Schneider propeller

The umbilical was also pulled from *Norma*'s aft deck and severed. The diving supervisor immediately contacted the bridge and the master quickly determined from the engine room that the propeller units were still running. The electric motors were stopped with the diver only about 3 metres away from the propeller **(Figure 3)**. The diver then managed to free himself from the entangled mass of umbilical cord and rope and make his way to the surface, where he was safely recovered.

The Lessons

Loss of life or serious injury was only prevented by the rapid actions taken to stop the propellers, and the quick thinking of the diver, in what must have been an extremely harrowing situation. However, the incident was entirely preventable, and it is important that lessons are learned. These include:

- **During diving operations, it is essential that both ships and diving contractors have procedures in place to establish and maintain a safe working environment, regardless of the scale or purpose of the operation.**
- **Although diving contractors usually have a sound appreciation of the generic risks involved when working in the vicinity of merchant vessels, the responsibility for ensuring that appropriate shipboard control measures are taken rests with a vessel's crew.**
- **The operation of machinery which poses a risk to divers should be prevented by physical barriers such as the removal of fuses whenever possible.**
- **A master should authorise the commencement of diving operations only when he is satisfied that the required control measures have been taken and all key ship's personnel, such as the chief engineer, have been informed.**
- **Crew must be fully familiar with the operation of critical machinery that may pose a risk to divers.**

Further details on the accident and the subsequent investigation can be found in the MAIB's investigation report, which is posted on its website:

www.maib.gov.uk

Alternatively, a copy of the report will be sent on request, free of charge.

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