International Tug & OSV
INCORPORATING SALVAGE NEWS
May/June 2013

Tugnology '13 Handbook and event Preview

Marc Niederer: "We have to make the industry better together."

Asia: How the market is changing, and the promise of Latin America.

Supplied with kind permission of The ABR Company Ltd, publishers of:
International Tug&OSV INCORPORATING SALVAGE NEWS

New dive support stations

A Hydrex diver and technician team, utilising the company's new workboats obtained in December last year, removed the bow thruster of a 300m container vessel in Rotterdam.

The team was mobilised from the Hydrex headquarters in Antwerp with the vessels fully-equipped as dive support stations.

Dave Bleyenberg, Hydrex production executive, told *IT&O*: "We wanted both vessels to be fully-equipped dive support and service stations. It was therefore important that they were equipped with hydraulic cranes, hydraulic winches, nautical and communication equipment, a dive control room and sleeping quarters operations in shifts around the clock."

The container vessel needed to be overhauled and the operation made it possible for the owner to keep his vessel out of drydock. Upon arrival in Rotterdam, the divers installed flexible mobdocks on both sides of the vessel's thruster tunnel. Next they emptied all water from the tunnel. This created a dry working area around the bow thruster unit. The team could then detach the bow thruster blades one by one.

The blades were replaced by a blind flange to prevent oil leaking from the thruster and water from ingressing. Next the team removed the flexible mobdocks again, concluding the first part of the operation.

The next step was to secure the gearbox with hoisting equipment. The team then disconnected the bow thruster unit from the engine room and lowered it onto a cradle. This cradle is designed especially for thruster operations and can be adjusted to the size of the unit. In this manner the thruster is prevented from tipping over and Hydrex divers can remove the unit in one take. The bow thruster was then brought onboard the Hydrex workboat, ready to be overhauled. The team securely sealed off the engine room by positioning a flange over the space connecting the thruster tunnel to the room. This enabled the vessel to sail until the overhauled unit was reinstalled.

Despite the company's successes, there have been other more challenging situations with the harsh winter weather, which has thrown up its own obstacles for those involved in diving and underwater services.

Bleyenberg added: "Bad weather conditions can change a routine operation into a far from easy one. Icy winter circumstances like we have had the last couple of months or a typhoon crossing over Manila, the Philippines, during a stern tube seal operation are just a few examples. This calls for experienced and certified teams of divers and technicians that can carry out routine operations as well as highly technical repair work within a very short time frame and without any loss of quality, while at the same time ensuring full safety for the team."

▼ *Hydrex diver/technicians are trained to work in harsh conditions.*

▲ *The new Hydrex workboats leaving for an operation in Rotterdam.*

Survey, search and salvage takes place Down Under

Marine contractor Realf's Diving and Salvage was hired to survey the area of the Central Queenslands Port Authority's new improvement project, before the dredging operation could begin.

Realf's Diving and Salvage, based in Gladstone, Queensland, used JW Fishers side scan sonar and metal detectors, along with a team of divers and marine specialists, to locate and remove a considerable quantity of underwater debris from the wharf area, including large metal objects that could have done considerable damage to the dredgers.

John Realf, dive supervisor, filed the following report on the survey and salvage operations. He said: "On arrival at the site we met with the surveyor to define the search area. Shot lines fitted with buoys were dropped to define the perimeter. This area was then systematically searched using the SSS-100K/600K side scan sonar. All sonar data was captured and stored on the computer with position co-ordinates and the operator's notations for later reference. Numerous targets were found on the seabed within the search grid which had to be removed by the 250-ton crane on support barge ***Yarra 1***."

Targets located and removed included concrete blocks, wire cables, a 17-ton anchor, car tires, and timber logs.

"The seabed was soft mud, and we were concerned that other objects could be hidden beneath the bottom," continued Realf. "The same area was searched again using our [JW Fishers] Pulse 12 boat-towed metal detector. While running the grid, a number of targets were detected and their positions marked. After completing the search, a diver with the hand-held Pulse 8X metal detector was deployed at the locations where the Pulse 12 registered anomalies. He found a range of buried objects which included more steel rope, pieces of pipe and even small beverage containers. On a few of the marked sites the Pulse 8X gave no significant reading, indicating the target was a considerable depth under the seabed and would not interfere with the dredging operation."

Another group which is using JW Fishers equipment in its operations is the Royal Australian Navy Hydrographic Service (AHS). This agency is charged with the responsibility of mapping and surveying undersea terrain to enable safe navigation. Under international agreements the Australian charting area spans approximately one-eighth of the world's surface, extending from Cocos Island to the west, the Solomon Islands to the east, the Equator to the north, and Antarctica to the south.

One of the tools AHS is employing in their operations is JW Fishers Proton 4 magnetometer. A super sensitive detector of iron and steel targets, the magnetometer can locate a variety of underwater objects from shipwrecks to lost anchors. A special software package enables the Proton 4 read-out data and position co-ordinates to be displayed and stored on a computer. Also shown on the screen is the track of the vessel as it runs a grid over the search area, ensuring no section is missed. In addition to the magnetometers, AHS is also using JW Fishers MC-1 mini camera. The mini camera is a versatile underwater video system that can be mounted on a commercial diver's helmet, attached to a pole and lowered into the water to survey an underwater structure, used as a drop camera to verify targets located by the magnetometer, or carried by a diver to record an inspection.