

New Lightweight High Performance Chain Boosts Ship Arrestor Project

Miko Marine reports a boost for the European Ship Arrestor Project following the development of a new lightweight chain. At half the weight of conventional chain it can be lifted by helicopter so a sea anchor can be deployed for ships in distress.

April 6, 2010 - [PRLog](#) -- The two-year Ship Arrestor project is aimed at introducing a technique that will enable a tow line and sea anchor to be attached to an unmanned vessel with engine failure. The sea anchor will reduce the ship's drift and create more time for it to be reached by rescue tugs before grounding. It is designed to be deployed by a conventional search and rescue helicopter that will drop the tow line around the winch gear on the foredeck of the abandoned vessel. The helicopter then lays the line upwind and releases it attached to a sea anchor. Because the tow line must pass around deck equipment and over the ship's side it is subject to considerable chafing and only chain can be used for the first few metres.

Unfortunately the weight of conventional steel chain was found to be too great for helicopter deployment and threatened the viability of the entire project. Titanium chain was rejected because it is brittle and too expensive but it transpired that one of the project partners had access to steel compositions developed in the former Soviet Union for space and defence purposes. These were subsequently used to produce a stud-less 24 mm chain weighing just 11 kg per metre yet with a tested minimum breaking load of 1250kN. This is far superior to the breaking load of 1308kN for a conventional R4 quality 34mm stud link anchor chain that weighs 27 kg per metre. Miko is now also able to supply the chain to customers in the marine and offshore industries or wherever the need for such a product might exist.

The new 24 x 86 mm link chain was produced, tested and approved and the first consignment has arrived in Norway and will be installed within the Ship Arrestor system for further trials later in the Spring. These will require the new chain to be fitted into an inflatable deployment ring that hangs below the helicopter whilst in flight. When inflated, the ring has a circumference wide enough to encircle a ship's winches and deck gear and trials have shown it to have satisfactory handling characteristics for the helicopter. When the ring is lowered around the deck gear the chain is released to make a connection with the ship. The anchor line is then paid-out upwind by the helicopter and the sea anchor deployed.

The success of the Ship Arrestor Project could have a major effect upon maritime and environmental safety. When a sea anchor is deployed either by helicopter or by the ship itself, its effect is almost immediate. Tests have shown that a 30 metre diameter nylon parachute sea anchor can quickly turn a 100,000 ton tanker into the wind and reduce its drift speed by 50 per cent. This dramatically improves its sea-keeping ability and could be a vital factor in the ship's survival by creating more time for the distressed vessel to be reached by rescue tugs. On arrival at the scene, the tug can pick-up the the sea anchor and ShipArrestor line and effect a rescue. A more detailed description of the principle can be viewed at www.shiparrestor.com.

The patent for the Ship Arrestor is held by Miko Marine of Norway which is leading a consortium of eight European organisations. It has been created to include companies from Norway, France, Germany, Netherlands and Austria as well as the Norwegian Institute of Technology and the UK's Ship Stability Research Centre. By applying their individual expertise to the challenge, it is hoped that it will be possible to develop a technique that will reduce the likelihood of groundings and the pollution that can result from them.

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