

International Tug & OSV

INCORPORATING SALVAGE NEWS

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Navigating Arctic challenges
Asian Focus: News from the region
Bill Skinner: "Our greatest asset is our people."

Speed of the essence in complex operation

The complexity of co-ordinating and overseeing a major salvage operation and bringing it to a successful conclusion under demanding circumstances with full regard for the ship's schedule, the protection of the environment and the safe management of the salvage team, is no mean feat. Tsavlis Salvage Group takes us behind the scenes.

On 22nd July last year, the Tsavlis Salvage Group urgently dispatched salvage tug *Stevns Battler* in response to a call for assistance from bulk carrier *Navios Sagittarius* laden with 73,419 tonnes of iron ore pellets. The vessel had run aground on the Tonneberg Banke, about 23.5 miles east of Frederikshavn, Denmark.

On 23rd July, a Hydrex diving team contracted by the salvors carried out a preliminary video inspection which found the damage was very severe indeed. However, it was impossible to get a full picture of the damage with the ship still aground.

The salvage tug *Stevns Breaker*, sister of *Stevns Battler*, arrived at the scene on 24th July and connected forward, while the lightering vessel *MPP Shield* and crane barge *Sanne A* were also mobilised to assist in the operation.

By 26th July, a salvage plan had been approved by the Danish authorities and on 28th July, after about 3,000 tonnes of cargo had been transferred to the lightering vessel, the *Navios Sagittarius* was refloated. The vessel was then towed to Frederikshavn for a detailed underwater inspection, extensive bottom repairs, and reloading of cargo.



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Tsavlis Salvage Group had signed a Lloyd's Open Form salvage contract with Navios and subcontracted several companies, including Hydrex, to carry out inspection and repairs. This complex salvage operation lasted three months during which time Hydrex mobilised 24 divers full-time, in two shifts, for the duration of the job. Speed was of the

essence in this operation as each day the ship was out of service was costing tens of thousands of dollars.

When asked if there were any particular challenges in the underwater repair of the stricken *Navios Sagittarius*, technical consultant, Michael Chourdakis, of the Tsavlis Salvage Group, explained: "The extended deformed area and local damage (cracks and fractures) caused by this major grounding, in combination with the marginal reserve of remaining local and longitudinal strength, necessitated accurate calculations and detailed step by step planning to cope with safe repair requirements. Various other parameters such as the necessity of shifting cargo during the repairs, the vessel's list, the weather conditions and the working depth required made it vital to have good organisation and management of all parties involved and good team work."

In order for the naval architects to produce drawings and plans, the first step was to get accurate measurements for the two major areas of damage (one near the forepeak, the other further aft, both on the port side), on a hull that was badly deformed, pierced, torn and indented. Using these measurements and the original ship drawings, the architects were then able to produce final drawings from which a section and a doubler plate could be fabricated.

The repair was a combination of accurate engineering and precise cutting, fitting, assembly and welding. In the case of the section, it was necessary for divers to cut through the hull plates where the hull was distorted and broken. The prefabricated insert was lowered into the water by the crane barge and pulled into place with chain blocks.

Few salvage companies in the world have the personnel, know-how, equipment and experience to successfully manage a salvage operation of this nature and few underwater repair companies have the specialised personnel, equipment, expertise and skill to execute the needed repairs. It is, as far as Tsavlis Salvage Group knows, the first time that an entire hull section has been prefabricated and inserted into a ship's hull, cutting away the existing damaged plates, with the ship still afloat, thus permitting the vessel to continue on a major voyage without the need to drydock.



▲ **Navios Sagittarius.**

◀ Repairs to smaller areas of damage where the hull was holed or cracked.

▶ The prefabricated insert was lowered into the water and pulled into place in the hull using chain blocks.