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# 74/47 22.3.48 **SALVING THE "MATRONA"**

## **Plans Now Laid for Righting the Ship**

From Our Own Correspondent

LIVERPOOL, Saturday

The ingenuity of the salvage experts of the Port of Liverpool is being pitted against the problem of righting the motorship *Matrona*, which has been lying on her side in Bidston Dock, Birkenhead, since she capsized without warning at her moorings on Oct. 30, last. The *Matrona*, which is a vessel of 7938 tons gross, lies facing away from her berth with her masts and most of her funnel submerged. On the successful righting of the vessel depends both the recovery of a ship for further service, and the freeing of valuable berth space in the dock for the loading and discharge of cargo.

All the plans for pulling the ship upright are now laid, and it is hoped they will be put into effect within two or three months. Commander A. E. Harbord, Marine Surveyor to the Port of Liverpool, is supervising the salvage operations. The method to be used consists of applying three forces—upward, downward and horizontal—in the direction it is intended to roll the ship. The upward force will be derived from external and internal buoyancy. The downward pressure will result from heavy counterpoised weights suspended along the lower part of the ship. The horizontal pull will come from winches ashore heaving on tripods fixed to the uppermost side of the ship.

### **TRIPODS ON SHIP'S SIDE**

On the uppermost surface of the ship's side has now been anchored the first of 14 metal tripods each 15 ft. high, which will take the pull from 14 winches, each with a 100 ton purchase, which will be embedded in 3500 tons of concrete behind the quay and abreast of the wreck. The winches will be fed through 2000 ft. of six-inch steam pipe attached to flexible joints and connected to the main steam pipes of five harbour vessels, which will supply the steam to the winches. The strength of the ship's plates bearing the tripods can only be estimated approximately, and may limit the

amount of pull on the tripods. The counterpoised weights will be attached to the upper bilge of the wreck so that as the ship comes up to the vertical position these weights, having then achieved their purpose, will float away instead of becoming trapped between the bottom of the ship and the bed of the dock. The weights will consist of 20 sealed cylinders containing water, with sufficient air to be buoyant. They will weigh five tons each.

To bring the centre of gravity as near to the bottom of the ship as possible, and so to reduce the amount of pull necessary, the funnel and masts, boats and boat davits, &c., have been removed by divers. External buoyancy will be provided by four Admiralty pontoons sunk into position near the submerged part of the deck. Compressed air will expel the water and provide the buoyancy. Certain compartments at the extreme ends of the vessel will be pumped out and sealed to provide internal buoyancy. Provision is also being made for the use of camels.

### **OVERCOMING SUCTION**

One of the greatest difficulties to be overcome, the extent of which can be assumed only approximately, is that of suction caused by the comparatively flat side of the vessel lying on the smooth dock bed in a layer of silt. To reduce as far as possible the effects of this suction, compressed air will be pumped through open ports in the side of the ship which lies in the mud. The intention is for the compressed air while finding its outlet to clear channels between the mud and the ship's side, breaking the seal. A similar procedure will be adopted with high-power water jets to wash away mud.

Six divers have been engaged almost continuously on the wreck, discharging the sand and scrap steel ballast, closing the intricate system of ventilating ducts extending throughout the ship, sealing off compartments, and removing masts and funnel. When the vessel is upright she will still be sunk because of the large quantity of water she will still contain. The flat bottom, with this weight of water, will prevent her from capsizing again. Before she is floated, all openings made below decks for the compressed air and high power water nozzles will have to be sealed. The ship will be ballasted as the water is pumped out.

The *Matrona* was originally the Elder Dempster vessel *Aba*. She was converted as a hospital ship during the war. At the time she capsized last November she was in process of repair and reconditioning as a passenger vessel.

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