

Wale Marine

**MOTORISED CATAMARAN TRANSPORT BARGE
FABRICATED FROM HDPE PONTOONS WITH STEEL
SPACE FRAME SUPERSTRUCTURE FOR
APPLE ASAP PROJECTS**

for use in WS 695 Calshot Harbour Rehabilitation - Tristan Du Chuna

Designed by
Anton Wale & Associates cc
Cape Town, South Africa

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www.walemarine.com

Email: anton@walemarine.com

Mobile - +27-82-7754040

Fax - +27-21-7941978



Report on Sea Trials – 16th February 2009

1. General Description

The Wale Marine composite HDPE pontoon, steel space frame with timber decking superstructure is designed for transporting precast concrete dollosse and construction equipment from the transport vessel the Baltic into the Calshot Harbour on Tristan Du Chuna.

The barge is self propelled with 2 x 115 HP

The barge is a light low draft structure designed to carry an 8 tonne pay-load with a draft of about 50 cm.

The maximum potential draft is 75 cm, and with the intended maximum centrally payload of 11 tonnes the corresponding draft will be about 66cm.

Each of the side pontoons are effectively 10 m in length by 1.5 m in width with a 0.75m depth with a 100 mm high vertically protruding upstand flat on either side. The steel superstructure is a rigid spaceframe about one metre in height and effectively 6 metres in width by 8 metres in length which is bolted to the upstand flat. The tare weight of the barge is about 8.5 Tonnes.

2. Lifting Procedure



The barge is designed to be lifted by a four point sling system with safety bow shackles connected to the four pad-eyes welded onto bollards. The lifting procedure during the trials was satisfactory and the slings did not interfere with the protection rail or console system.

3. Draft



When unloaded the motors cavitation plates were sufficiently submerged which resulted in satisfactory thrust both forwards and in stern drive with no evidence of cavitation.

In the trials the barge was loaded to resemble a worst case scenario. First a single dollos was loaded as far a stern as possible and the resulting draft allowed for the engines and their exhaust outlets to be well clear of the waters surface. Secondly, the barge was loaded with two dollose as far a stern as possible and the draft was still sufficient for the motors to operate safely. In both cases the dollose where loaded to the port side of the barge which result in a roll to that side, but the barge and engines operated comfortably in this worst case scenario.

Due to the weight of the engines, in the unloaded condition, the barge has a pitch towards the stern but this does not compromise the operation of the barge or engines as proved in the trials. There is anticipated that in future fenders will be fitted to the bow of the barge which will compensate the current pitch towards the stern.

For optimum performance it is recommended that dollose are loaded towards the bow and the starboard side to minimise the net pitch and roll.

Given the observations at the trials the barge seems capable of handling the maximum load of 11 Te as per requirements for transportation of the crane.

4. Manoeuvrability



The barge has satisfactory manoeuvrability, and according to the skipper during the trials (Henning Myburg), who has operated in Tristan Du Chuna, the turning circle is satisfactory for the barge to operate in the expected conditions.

5. Conclusion



Based on the trials, it appears that the barge acts satisfactorily, and it meets the requirements of its intended design and operation.



Richard Wale
For Anton Wale & Associates CC