

**MALIN  
ABRAM**

## **CASE STUDY** M443-01

### **LOAD-OUT AND FLOAT-OFF OF HMS VENTURER**



Figure 1: HMS Venturer during load-out

#### OVERVIEW

Malin Abram were contracted by Babcock, to engineer and project manage the wholship weighing, load-out and float-off of HMS Venturer from within the client's assembly hall at Rosyth, to afloat, ready for handover to BMR.

The weighing was carried out using 84 hydraulic jacks and load cells; the jacks were utilised to lift the ship clear of her supports and transfer the load onto the loadcells, after which weighing was undertaken. The load-out and float-off was carried out using the CD01, a 137metre semi-submersible barge, which is owned by Malin Abram as part of a joint venture with Augustea.

#### THE LOAD-OUT AND FLOAT-OFF

The load-out was completed using 240 axles lines, provided by Mammoet, and set down onto bespoke designed barge grillage; the grillage was provided by and designed by Malin Abram, and fabricated by our sister company, John Tracey Specialist Welding.

The load-out was carried out within the Non-Tidal Basin using the CD01s own internal ballast system. The barge was moored in an end on configuration, on a mooring spread comprised of a mix of wire rope and HMPE soft tails; This particular mix was selected as it offered significant benefits in installation time, but with the same levels of efficacy as other methods.

Due to water depth requirements for float-off, the operation was carried out at the newly constructed Charles Hammond Berth, Port Of Leith, and represented the first float-off to be carried out at this new berth. Malin Abram worked with Babcock to provide an alternative quayside float-off solution utilising the available deep water to complete the float-off.

The full float-off operation was completed free floating and split over two phases.

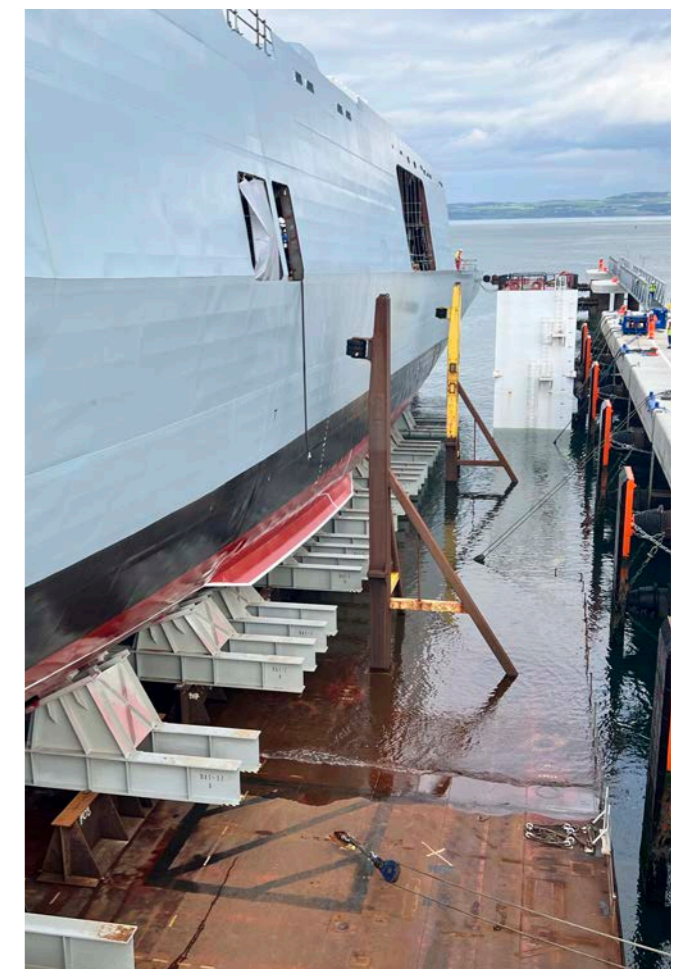


Figure 2 & 3: HMS Venturer being loaded-out by SMPT to CD01, onto bespoke grillage

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## CARGO, VESSELS AND LOCATION

- HMS Venturer – First in Class Type 31
- Vessel Chartered – CD01 Semi-Submersible Barge
- Load-out Port – Non-tidal basin, Babcock, Rosyth
- Float-off Location – Charles Hammond Berth, Port Of Leith

## CAPABILITIES PROVIDED

Malin Abram provided operational management, including the provision of a suitable semi-submersible barge (CD01), SPMTs, mooring winches, sea-fastening & marine superintendence to support each operation.

Engineering provided by Malin Abram included:

- Weighing
- Stowage plan
- Barge towing procedures
- Strength assessments
- Grillage design
- SPMT arrangement
- Method statements
- Load-out ballast calculations
- Transit stability analysis
- Float-off ballast calculations
- Mooring analysis

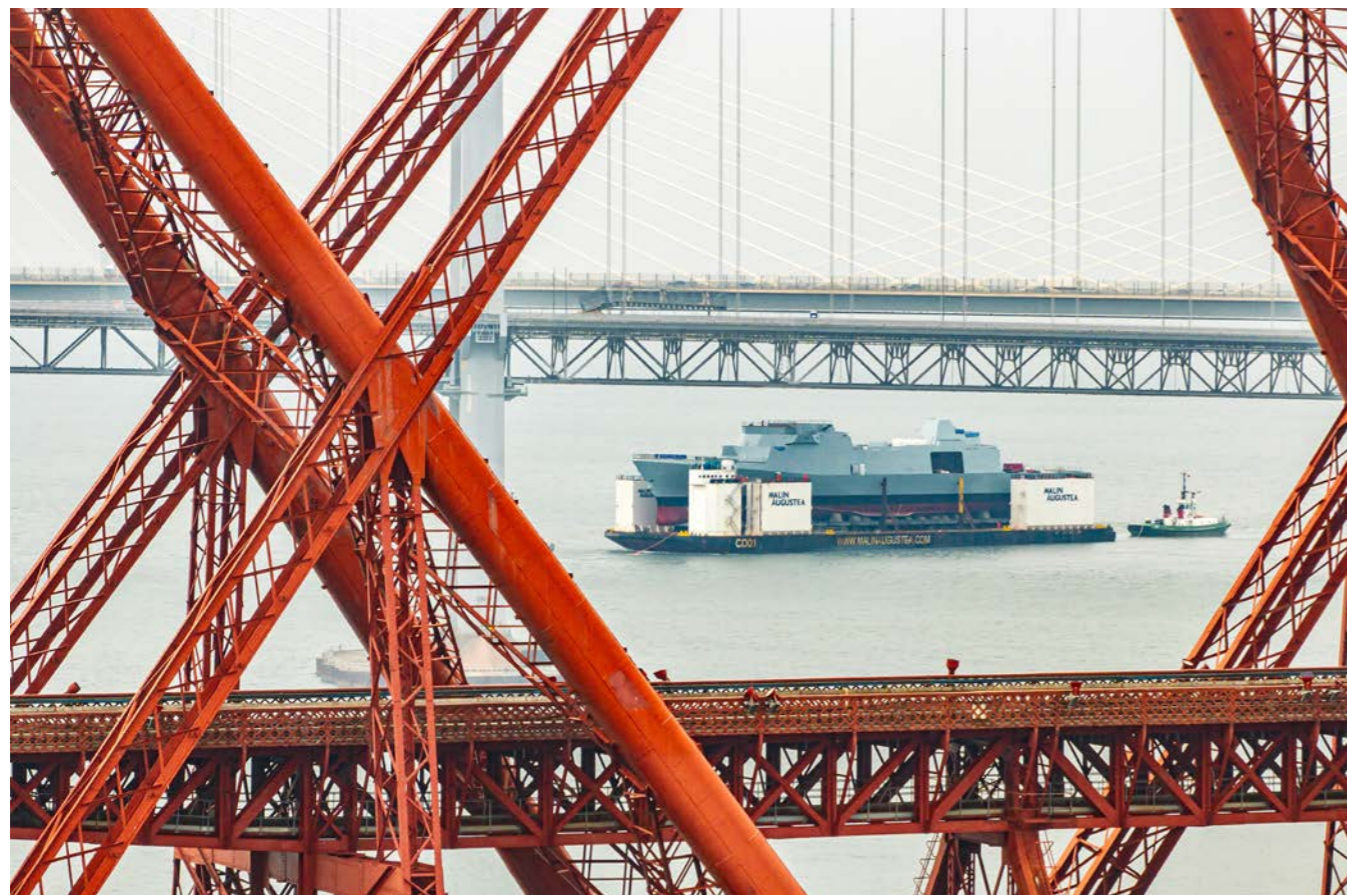


Figure 4: HMS Venturer in transit

Figure 5 & 6: HMS Venturer successfully floated-off in C-Lock