

#15423 Iron

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S CERTIFICATE & REPORT.

ENGINES.

Rev 25/11/75

Report (if any) on Hull of Vessel. Port Glasgow No 4143

Description *Compound, Inverted, Direct Acting*
 Made by *Messrs Denny, Dumbarton*
 In the year *1875*
 Present condition *New*
 Diameter of cylinder *One 47" & one 82"*
 Length of stroke *48"*
 No. of revolutions per minute *Max. 68.*
 Point of cut off *Two tenths up to seven tenths*
 Paddle, or Screw *Screw*
 Nominal Horse Power *400*
 Diameter of screw, or of paddle wheel *16" 5"*
 Pitch of screw *22" 0"*
 No. of blades, *4* total surface *74 ft²*
 No. of bilge pumps *2* and size *4 3/4" x 24" stroke*
 Do they pump from each compartment *Yes*
 Is there provision made for pumping from the wings of the stoke hold *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
 What vacuum and steam gauges are there attached to the engines and boilers *One vacuum, one steam & one compound, in Eng. Room, & one to each boiler in stoke hold*
 No. of feed pumps *2* and sizes *4" x 24" stroke*
 Description and size of Donkey Engine... *Inverted double acting 5" x 10" stroke*
 Will it feed the boilers, pump from the bilges, and pump on deck *Yes*
 Can it be driven by steam from a separate boiler *Yes*
 No. of bilge injections *One* and sizes *6" connected to circulation pump*
 Are they fitted with non return valves *Yes*
 Is there a hand pump in the engine room *Yes*
 Can it be worked by the main engines *No*
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

CONNECTIONS ON HULL.

Are all connections with the sea direct on the skin of the ship *Yes*
 Are they Kingston valves or common cocks *Screw down valves & cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *Yes, they are all fitted above turn of bilge*
 Are the discharge pipes above or below the deep water line *Above*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes*

Are any pipes carried through the bunkers *Yes, bilge discharge pipes*
 If so state how protected *Carried up through bunkers & they are cast iron*
 When was the stern tube, propeller, screw shaft, and all connections examined in dry dock *On ship previous to being launched*
 How are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Donkey sea & bilge suction cock has single ported plug, & cannot be turned to both at same time*
 Have the bilge suction non-return valves fitted or not *No*

BOILERS.

Number *Four, Round Horizontal, with 3" furnaces in each, fixed without ships*
 Description *Messrs Denny, Dumbarton*
 Made by *1875*
 In the year *New*
 Present condition *New*
 When last extensively repaired *—*
 Working pressure *65 lbs*
 When tested by hydraulic pressure *Not ascertained*
 What pressure tested *130 lbs*
 Is there a super-heating apparatus *Yes, Round Vertical with single flue*
 Can each boiler be worked separately *Yes*
 Is each boiler fitted with a separate steam gauge *Yes*

Can the super-heater be shut off and the boilers worked separately *No*
 No. of safety valves on each boiler *Two*
 Description and area of each safety valve *Direct Spring loaded 15. Area*
 No. of square feet of fire-grate surface in each boiler *52 ft²*
 Is there a separate blow off and brine cock on each boiler, independent of those on the vessel's skin *Yes*
 Is the screw shaft tunnel water tight and fitted with a sluice door on bulkhead *Yes*
 Are all pipes, cocks, and roses in connection with these boilers accessible to the engineer at all times *Yes, they are fitted above turn of bilge*

Denny & Co. Manufacturer.

I hereby certify that the whole of the above Machinery and Boilers of the Iron (or Wood) Screw (or Paddle) Steam Vessel *"Torunda"* owned by *Duncan McNeill & Others* of the Port of *Glasgow* of *1943* Tons Register, and *400* Nominal Horse Power, have been carefully inspected and examined by *Me* at *Dumbarton* and found to be at this date, viz., *Nov. 12th* 18*75* in good order and safe working condition.

James Morrison
 Engineer Surveyor to Lloyd's Register of Shipping.