

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rec 2/10/76

Description *Compound, Inverted, Direct acting*
 Made by *Messrs J. Wingate & Coy.*
 When *1876* At *Glasgow*
 Diameter of cylinder *26" dia* Length of stroke *30"*
 No. of revolutions per minute *90*
 Point of cut off *Variable*
 Diameter of screw shaft *9 in*
 Diameter of crank shaft journals *9 in*
 Diameter of screw, ~~and~~ *10" dia*
 Pitch of screw *1 1/2"*
 No. of blades, *Two* Total surface *Not ascertained*
 No. of bilge pumps *Two* and sizes *3 1/2" dia x 15"*
 Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *Two* and sizes *3 3/8" dia x 15"*
 What gauges are there attached to the engines and boilers ... *Two Steam, One Vacuum & One Compound.*
 Description and size of *Horizontal double acting* Donkey Pumps ... *3 1/2" x 9" stroke*
 Where do they pump from ... *From the Sea & Bilge.*
 No. of bilge injections *One* and sizes *2 1/2"*
 Are they connected to air, or circulating pumps *To Circulating*
 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*

MAIN BOILERS.

Number *One* Description *Round Horizontal*
 Made by *J. Wingate & Coy*
 When *1876* At *Glasgow*
 Working pressure *70 lbs*
 Tested by hydraulic pressure to *140 lbs* Date *August 76*
 Description of super-heating apparatus *None*
 Can each boiler be worked separately *Yes*

Can the super-heater be shut off and the boilers worked separately *Yes*
 Description and area of safety valves on each boiler *Two, Direct acting each 14.13" area.*
 No. of square feet of fire-grate surface in each boiler *About 60 ft*
 Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin *Yes*
 Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times *Yes*

DONKEY BOILER.

Description *Round Vertical*
 Where fixed *Between Engine Room & Storehold*
 Working pressure *45 lbs*

Tested by hydraulic pressure to *90 lbs*, Date *August 76*
 Description and area of safety valves *Two Dead weighted each 3.14" area*
 No. of square feet of fire grate *10 ft*

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *The blow off cocks are fitted on the skin of the ship & run down above the stoke hold plates*
 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*
 Are the discharge pipes above or below the deep water line *About Level*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes*

What pipes are carried through the bunkers *None*
 How are they protected *None*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *On ship previous to being launched.*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Yes*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *Yes*

The Wingate & Co Manufacturer.

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (~~or Wood~~) Screw (~~or Paddle~~) Steam Vessel *"Wanaka"* owned by *John Darling* of the Port of *Dunedin* of *278* Tons Register, and *120* Registered Horse Power, and that they have been carefully inspected and examined by me at *Glasgow* and found to be at this date, viz., *Sept 29th* 1876 in good order and safe working condition.

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