

# LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

## ENGINEER SURVEYOR'S REPORT ON MACHINERY.

### ENGINES.

Description *Compound Condensing, Inverted Direct Acting*  
 Made by *Forrest & Barr*  
 When *1863* At *Glasgow*  
 Diameter of cylinder *Two 22 inch* length of stroke *20"*  
 No. of revolutions per minute *about 80*  
 Point of cut off *no expansion gear*  
 Diameter of screw shaft *6 1/2"*  
 Diameter of crank shaft journals *6 1/2"*  
 Diameter of screw, *over paddle wheel* *7' 1/4"*  
 Pitch of screw *13' 6"*  
 No. of blades, *4* Total surface *—*  
 No. of bilge pumps *One* and sizes *3" dia x 10" stroke*  
 Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*  
 No. of feed pumps *One* and sizes *3 7/8" dia x 10" stroke*  
 What gauges are there attached to the engines and boilers ... *One vacuum and one steam.*  
 Description and size of Donkey Pumps ... *Inverted double Acting 3' x 10" stroke*  
 Where do they pump from ... *From the sea & bilge*  
 No. of bilge injections *One* and sizes *2"*  
 Are they connected to air, or circulating pumps *to Air pump*  
 Is there a hand pump in the engine room *Yes*  
 Can it be worked by the main engines *No. It is worked from Deck.*  
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

### MAIN BOILERS.

Number *One* Description *Latticed Horizontal*  
 Made by *Lumbell, Grant & Jack*  
 When *1876* At *Glasgow*  
 Working pressure *30 lbs*  
 Tested by hydraulic pressure to *60 lbs*, Date *11th April 76*  
 Description of super-heating apparatus *None*  
 Can each boiler be worked separately *—*

Can the super-heater be shut off and the boilers worked separately *—*  
 Description and area of safety valves on each boiler *Two Direct loaded 16.8" area each*  
 No. of square feet of fire-grate surface in each boiler *40 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 *in Engine Room at Ship's Side*  
 Working pressure *2 1/2 lbs*  
 Made by *Corbett & Co Glasgow*

Tested by hydraulic pressure to *Not ascertained*  
 Description and area of safety valves *Lever with weight 5 1/2"*  
 No. of square feet of fire grate *9 ft*

### PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Yes*  
 Are they Kingston valves or common cocks ... *Cocks*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *Blow off Cocks under stokehold plates.*  
 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*

What pipes are carried through the bunkers *None*  
 How are they protected *—*  
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *April 3rd 1876*  
 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 *No Lummel*

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 *Andalusia* owned by *Armstrong, Brothers* of the Port of *Glasgow* of *—* Tons Register, and *36* Registered Horse Power, and that they have been carefully inspected and examined by me at *Glasgow* and found to be at this date, viz., *19th May* 18*76* in good order and safe working condition.

James Morrison  
 Engineer Surveyor to Lloyd's Register of Shipping