

**ENGINEER SURVEYOR'S REPORT ON MACHINERY.**  
**ENGINES.**

*Recd 9/10/97*

No. of Report (if any) on Hull of Vessel.

Description *Compound Surface Condensing*  
 Made by *Messrs Redhead & Co*  
 When *1843* At *South Shields*  
 Diameter of cylinder *20 - 40* Length of stroke *30*  
 No. of revolutions per minute *65*  
 Point of cut off *5/8"*  
 Diameter of screw shaft *4"*  
 Diameter of crank shaft journals *4"*  
 Diameter of screw, or of paddle wheel *10. 6*  
 Pitch of screw  
 No. of blades, *4* Total surface  
 No. of bilge pumps *2* and sizes *2 1/2" + 16"*  
 Do they pump from each compartment *yes*

Are all the bilge suction pipes fitted with roses *yes*  
 No. of feed pumps *2* and sizes *2 1/2 + 16*  
 What gauges are there attached to the engines and boilers ... } *1 Steam*  
 } *1 Vacuum*  
 Description and size of Donkey Pumps ... } *Double acting 6" + 10*  
 Where do they pump from ... } *All compartments + ballast-tanks*  
 No. of bilge injections *1* and sizes *3 1/2*  
 Are they connected to air, or circulating pumps *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 *1* Description *Multitubular*  
 Made by *Messrs Redhead & Co*  
 When *1843* At *South Shields*  
 Working pressure *60 lbs*  
 Tested by hydraulic pressure to *120*, Date *1843*  
 Description of super-heating apparatus } *None in Tunnel*  
 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 } *Seven 12. 5 1/2*  
 No. of square feet of fire-grate surface in each boiler } *33*  
 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 *Vertical 3 cross tubes*  
 Where fixed *On deck Amidships*  
 Working pressure *40*

Tested by hydraulic pressure to *80*, Date *1843*  
 Description and area of safety valves *Seven 9. 6 1/2*  
 No. of square feet of fire grate *14*

**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 ... } *2 Mushroom the rest common cocks*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... } *yes except blow down cocks*  
 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 } *Aug 22 / 44*  
 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*

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 *Alcazar* owned by *M R Lewis* of the Port of *South Shields* of *295* Tons Register, and *65* Registered Horse Power, and that they have been carefully inspected and examined by me at *Cardiff* and found to be at this date, viz., *Sept-14* 18*77* in good order and safe working condition.

*Charles M. Jacobs*  
 Engineer Surveyor to Lloyd's Register of Shipping.  
*A.P. 6/10/97*

*Heayas*  
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