

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Inverted Compound Surface Condensing*
 Made by *Marshall, Osburne & Co.*
 When *1874* At *South Shields*
 Diameter of cylinder *22" & 44"* Length of stroke *24"*
 No. of revolutions per minute *70*
 Point of cut off *about 1/2 stroke*
 Diameter of screw shaft *7" in the tunnel*
 Diameter of crank shaft journals *7"*
 Diameter of screw, or of paddle wheel
 Pitch of screw
 No. of blades, *4* Total surface
 No. of bilge pumps *1* and sizes *4" dia x 15" stroke*
 Do they pump from each compartment *after hold & Engine room*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *1* and sizes *4" dia x 15" stroke*
 What gauges are there attached to the engines and boilers ... *1 steam on the boiler*
 Description and size of Donkey Pumps ... *2 inverted double acting, large one 6" dia x 9" stroke, smaller 4" x 9"*
 Where do they pump from ... *the large one from the tanks & bilges, the small one from the sea, both used as such*
 No. of bilge injections *one* and sizes *3" dia*
 Are they connected to air, or circulating pumps *to circulating pump*
 Is there a hand pump in the engine room *no (the small donkey can be used as such)*
 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 *Cylindrical & Multi-tubular*
 Made by *Marshall Osburne & Co.*
 When *1876* At *South Shields*
 Working pressure *65 lbs.*
 Tested by hydraulic pressure to _____, Date _____
 Description of super-heating apparatus *none*
 Can each boiler be worked separately *only 1 boiler*

Can the super-heater be shut off and the boilers worked separately
 Description and area of boiler *2 loaded by lever and safety valves on each*
 No. of square feet of fire-grate surface in each boiler *40*
 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 (except the bilge discharge of the small donkey)*

DONKEY BOILER.

Description *Upright Cylindrical with 2 cross tubes*
 Where fixed *in the stokehold*
 Working pressure *50 lbs per sq. inch*

Tested by hydraulic pressure to _____, Date _____
 Description and area of safety valves *1 blow weight 3" dia = 7" area*
 No. of square feet of fire grate *92*

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 ... *stop valves & cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *no. the ash, donkey, & blow off cocks below*
 Are the discharge pipes above or below the deep water line *below*
 Are they each fitted with a discharge valve on the plating of the vessel *yes*

What pipes are carried through the bunkers *small donkey bilge discharge*
 How are they protected *wood casing & close up to deck*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *Sept. 1876 I was not present*
 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 *sluice door fitted Tunnel not water tight*

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 *"Sandringham"* owned by *Kings Lynn S.S. Co.*
 of the Port of *Lynn* of *344* Tons Register, and *80* Registered Horse Power,
 and that they have been carefully inspected and examined by me at *Hartlepool*
 and found to be at this date, viz., *Oct. 5th 1876* in good order and safe working condition.

Amount of Fee for Survey ... £ : :

(Travelling Expenses, if any, £)

(1000/31/7/76.)

Engineer Surveyor to Lloyd's Register of Shipping