

# REPORT ON MACHINERY.

No. 7093.

TUE. JUN. 11. 1912

Date of writing Report 4<sup>th</sup> June 1912 When handed in at Local Office Belfast Port of Belfast  
 No. in Survey held at Belfast Date, First Survey May 3<sup>rd</sup> Last Survey June 6<sup>th</sup> 1912  
 Reg. Book. 706 on the S.S.S. Graphic (Number of Visits 17) Gross 2022  
 Master A. M. M. M. Built at Belfast By whom built Harland & Wolff Tons 447  
 Engines made at Belfast By whom made - when made -  
 Boilers made at - By whom made - when made -  
 Registered Horse Power 788 Owners Belfast S.S. Coy L<sup>d</sup> Port belonging to Belfast  
 Nom. Horse Power as per Section 28 788 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
**ENGINES, &c.—Description of Engines** Two Screw Quadruple Expansion No. of Cylinders 8  
 Dia. of Cylinders 21"-29"-41"-58" Length of Stroke 36" Revs. per minute 155 Dia. of Screw shaft 11.97" Material of 9. Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern Yes If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4'-3"  
 Dia. of Tunnel shaft 10.66" Dia. of Crank shaft journals 11.19" Dia. of Crank pin 12" Size of Crank web 2 1/2 x 8 1/2 Dia. of thrust shaft under  
 collars 11 3/4" Dia. of screw 11'-3" Pitch of Screw 13'-9" No. of Blades 3 State whether moveable No Total surface 41.58 sq. ft.  
 No. of Feed pumps Two Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 3 Diameter of ditto 4" Stroke 15" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines See other sheet No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 7-3" In Holds, &c. 2-3"  
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 4"  
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Below  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes  
 What pipes are carried through the bunkers None How are they protected Yes  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes  
 Dates of examination of completion of fitting of Sea Connections Yes of Stern Tube Yes Screw shaft and Propeller Yes  
 Is the Screw Shaft Tunnel watertight Stated to be it fitted with a watertight door Yes worked from Upper deck  
**OILERS, &c.—** (Letter for record 3) Manufacturers of Steel W. & A. L. & Co. L<sup>d</sup>  
 Total Heating Surface of Boilers 11448 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers 2 - W. End. Cylind<sup>r</sup>  
 Working Pressure 200 lbs Tested by hydraulic pressure to 280 lbs Date of test 28-5-12 No. of Certificate 1-6-12  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 158 sq. ft. No. and Description of Safety Valves to  
 each boiler 4 - Direct Spring Area of each valve 10.82 sq. in. Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 4 ft. Mean dia. of boilers 6'-0" Length 21'-0" Material of shell plates Steel  
 Thickness 1 1/2" Range of tensile strength 29-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap Rivet  
 long. seams Butt Rivet of rivet holes in long. seams 1 1/2" Pitch of rivets 10" Lap of plates or width of butt straps 24 1/2"  
 Per centages of strength of longitudinal joint 98.4 Working pressure of shell by rules 251 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring McNair No. and Description of Furnaces in each boiler 8 - Morrison Material Steel Outside diameter 45"  
 Length of plain part 10" Thickness of plates 3 3/4" Description of longitudinal joint Weld No. of strengthening rings Yes  
 Working pressure of furnace by the rules 237 lbs Combustion chamber plates: Material Steel Thickness: Sides 5" Back 7 1/2" Top 5" Bottom 5"  
 Pitch of stays to ditto: Sides 7 1/2" x 7" Back 7 1/2" x 7 1/2" Top 8 1/2" x 7" If stays are fitted with nuts or riveted heads Yes inside Working pressure by rules 208 lbs  
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 52 sq. in. Working pressure by rules 245 lbs Are plates in steam space:  
 Material Steel Thickness 1 1/4" Pitch of stays 7 1/2" x 15" How are stays secured Nuts & Washers Working pressure by rules 272 lbs Material of stays Steel  
 Diameter at smallest part 2 1/2" x 2 1/2" Area supported by each stay 27 sq. in. Working pressure by rules 242 lbs Material of Front plates at bottom Steel  
 Thickness 1 1/2" Material of Lower back plate Yes Thickness Yes Greatest pitch of stays Yes Working pressure of plate by rules Yes  
 Diameter of tubes 2 1/2" Pitch of tubes 3 1/2" x 3 1/2" Material of tube plates Steel Thickness: Front 5 1/2" Back 5" Mean pitch of stays 7 1/2"  
 Pitch across wide water spaces 13 1/4" Working pressures by rules 348 lbs Are they fitted with easing gear Yes Depth and  
 thickness of girder at centre 8" (7 x 2) Length as per rule 27" Distance apart 8 1/2" Number and pitch of stays in each 3-4"  
 Working pressure by rules 229 lbs Superheater or Steam chest; how connected to boiler - Can the superheater be shut off and the boiler worked  
 separately - Diameter - Length - Thickness of shell plates - Material - Description of longitudinal joint - Diam. of rivet  
 holes - Pitch of rivets - Working pressure of shell by rules - Diameter of flue - Material of flue plates - Thickness -  
 If stiffened with rings - Distance between rings - Working pressure by rules - End plates: Thickness - How stayed -  
 Working pressure of end plates - Area of safety valves to superheater - Are they fitted with easing gear -

W1079-0092



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description  
 Made at By whom made When made Where fixed  
 Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety  
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment  
 If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length  
 Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams  
 Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets  
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays  
 Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint  
 Working pressure of furnace by rules Thickness of furnace crown plates Radius of do. Stayed by  
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied: One outer keener stem bush; pair bottom end  
 brasses; 2 pairs top end brasses; spare eccentric strap; air pump bucket &  
 rod; 2 bronze centrifugal pump spindles; set packing for H.P. piston rod  
 + valves; halter check valves etc. + all gear to Lloyd's Rules extra.

The foregoing is a correct description.

Manufacturer.

Dates of Survey  
 During progress of work in shops - -  
 During erection on board vessel - -  
 while building  
 Total No. of visits.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods

Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material of Crank shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes W. Iron Steel Test pressure 430 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.)

See Report of Surveyor for Repairs

Certificate (if required) to be sent to this office

Fee included in Ship fees  
 The amount of Survey Fee  
 Special . . . . £ : : When applied for  
 Donkey Boiler Fee . . . . £ : : When received,  
 Travelling Expenses (if any) £ : :  
 Committee's Minute  
 Assigned

R. L. Pennington  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI. JUN. 14 1912



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