

# REPORT ON MACHINERY

No. 7082

TUE. MAY. 14. 1912

Date of writing Report 6 May 12 When handed in at Local Office Belfast 10 Port of Belfast  
 No. in Survey held at Belfast Date, First Survey Apr. 4th Last Survey May 1st 1912  
 Reg. Book. J.S.S. Heroic (Number of Visits 12) Gross 675  
 on the J.S.S. Heroic Net 464  
 Master H. Parter Built at Belfast By whom built Harland & Wolff L<sup>o</sup> When built 1906  
 Engines made at Belfast By whom made - when made -  
 Boilers made at - By whom made - when made -  
 Registered Horse Power ✓ Owners Belfast S.S. Co L<sup>o</sup> Port belonging to Belfast  
 Nom. Horse Power as per Section 28 804 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Wain Screw Quadruple Expansion No. of Cranks 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  
 as per rule 11.97 as fitted 13.25 (Screw shaft)  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No - Works in the after end of the liner made with right  
 in the propeller boss ✓ If the liner is in more than one length are the joints burned ✓ 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 ✓ If two  
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4'-3"  
 Dia. of Tunnel shaft 10.66 as per rule 11.0 Dia. of Crank shaft journals 11.19 as per rule 11.45 Dia. of Crank pin 12 Size of Crank web 2 1/2 x 8 1/2 Dia. of thrust shaft under  
 collars 1 1/4 Dia. of screw 11-3 Pitch of Screw 13'-9" No. of Blades 3 State whether moveable ✓ Total surface 41 sq ft  
 No. of Feed pumps Number of one Main Engine overhauled while the other is at work  
 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 Sizes of other heat No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4-3 In Holds, &c. 2-3  
 No. of Bilge Injections 2 sizes 8 Connected to condenser, or to circulating pump Pump 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 ✓  
 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 ✓  
 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 ✓ of Stern Tube ✓ Screw shaft and Propeller ✓  
 Is the Screw Shaft Tunnel watertight Stated to be fitted with a watertight door Yes worked from Upper deck

BOILERS, &c.—(Letter for record S) Manufacturers of Steel D. Colville Sons L<sup>o</sup>  
 Total Heating Surface of Boilers 11448 Is Forced Draft fitted Yes No. and Description of Boilers 2 Double End Cylinders  
 Working Pressure 215 lbs Tested by hydraulic pressure to ✓ Date of test ✓ No. of Certificate ✓  
 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' 32 sq in pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork about 4 ft Mean dia. of boilers 16'-0" Length 21'-0" Material of shell plates Steel  
 Thickness 3/32 Range of tensile strength 29-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap, Dr. J.  
 long. seams Butt Bevel Diameter of rivet holes in long. seams 23/32 Pitch of rivets 10 Gap of plates or width of butt straps 244  
 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"  
 plate 82.8 No. and Description of Furnaces in each boiler 8 - Horizontal Material Steel Outside diameter 45"  
 Length of plain part top 10 Thickness of plates bottom 3 1/32 Description of longitudinal joint Weld No. of strengthening rings ✓  
 Working pressure of furnace by the rules 237 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 7/8 Top 5/8 Bottom 7/8  
 Pitch of stays to ditto: Sides 7 1/2 x 4 Back 7 1/2 x 4 1/2 Top 8 1/2 x 7 If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 208 lbs  
 Material of stay Steel Diameter at smallest part 1 3/16 to 1 1/2 Area supported by each stay 52 sq in Working pressure by rules 245 lbs Material plates in steam space:  
 Material Steel Thickness 1 1/4 Pitch of stays 14 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 1/8 x 2 3/16 Area supported by each stay 271 sq in Working pressure by rules 242 lbs Material of Front plates at bottom Steel  
 Thickness 15/16 Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓  
 Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/4 Material of tube plate Steel Thickness: Front 5/16 Back 5/8 Mean pitch of stays 7 1/2  
 Pitch across wide water spaces 13 3/4 Working pressures by rules 348 lbs with 7 parallel Girders to Chamber tops: Material Iron 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 3-7  
 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 -

**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 \_\_\_\_\_ Plates \_\_\_\_\_

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:— 1 outer & inner stern brace; main bottom well brace 2 pairs top well braces; spare screw two stop; air pump bucket rods; 2 large centrifugal pump spindles; sets packing rings for H.P. piston rods & valves, hull & ch valves etc, all given to Lloyd's Rules extra.

The foregoing is a correct description,

Manufacturer.

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

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_  
 " " " donkey " " " \_\_\_\_\_

**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 Survey for Repairs*

*Amendment attached*

It is submitted that this vessel is eligible for THE RECORD, L.M.C. 5.12. 2 DB (F.D.) and 1 Aux. S.B. - 215 lb.

*Fee included in Ship Fees as per Special arrangement*

The amount of Entry Fee .. £ : : When applied for \_\_\_\_\_

Special .. £ : : \_\_\_\_\_

Donkey Boiler Fee .. £ : : When received, \_\_\_\_\_

Travelling Expenses (if any) £ : : \_\_\_\_\_

*R. J. Bennett*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. MAY. 21. 1912

Assigned

*L.M.C. 5.12*

MACHINERY CERTIFICATE WRITTEN 4/6/12



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*This office*

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)