

REPORT ON MACHINERY.

No. 7307

Received at London Office

DEC. 2-1913

Date of writing Report 27th Nov 1913 When handed in at Local Office 24th Nov 1913 Port of Belfast
 No. in Survey held at Belfast Date, First Survey 2nd Oct 1912 Last Survey 26th Nov 1913
 Reg. Book. on the G.S.S. Cardiganshire (Number of Vistas 95) Tons { Gross 9426
 Master L. E. Warner Built at Belfast By whom built Workman Clark & Co Net 5993
 Engines made at Belfast By whom made - when made -
 Boilers made at - By whom made - when made -
 Registered Horse Power ✓ Owner Royal Mail Steam Packet Co Port belonging to Belfast
 Nom. Horse Power as per Section 28 947 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion of Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 24"-40½"-68" Length of Stroke 48 Revs. per minute 76 Dia. of Screw shaft as per rule 14.17 Material of Steel
 as fitted 15.0 screw shaft
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight
 in the propeller boss Yes 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 60"
 Dia. of Tunnel shaft as per rule 12.89 Dia. of Crank shaft journals as per rule 13.5 Dia. of Crank pin 14 Size of Crank web 26" x 9½" Dia. of thrust shaft under
 as fitted 13.37 as fitted 14.0
 collars 14 Dia. of screw 14"-0" Pitch of Screw 18"-9" No. of Blades 3 State whether moveable Yes Total surface 85 sq ft.
 No. of Feed pumps None on Main Engines of ditto ✓ Stroke ✓ Can one be overhauled while the other is at work ✓
 No. of Bilge pumps One - each engine Diameter of ditto 5½" Stroke 24" 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 2 - 3½" In Holds, &c. 13 - 3½" & 8 - 2½"

No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump Pumps a separate Donkey Suction fitted in Engine room & size 3" @ 3½"
 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 29/9/13 of Stern Tube 23/9/13 Screw shaft and Propeller 23/9/13
 Is the Screw Shaft Tunnel watertight Stated to be Is it fitted with a watertight door Yes worked from top platform Engine Room

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Beammore & Co L
 Total Heating Surface of Boilers 9600 sq ft Forced Draft fitted Yes No. and Description of Boilers 2 Double End. Cylind.
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 7-10-13 No. of Certificate 456
 Can each boiler be worked separately Yes Area of fire grate in each boiler 118½ sq ft No. and Description of Safety Valves to
 each boiler 3 - Direct Spring Area of each valve 12.56 sq ft 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 about 18" Mean dia. of boilers 4'-10½" Length 19'-9" Material of shell plates Steel
 Thickness 1½" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Top & P.
 long. seams Butt Diameter of rivet holes in long. seams 1½" Pitch of rivets 10½" Lap of plates or width of butt straps 22½"
 Per centages of strength of longitudinal joint 83.5 Working pressure of shell by rules 226 lbs Size of manhole in shell M. Keils 16" x 12"
 plate 85.7 Size of compensating ring M. Keils No. and Description of Furnaces in each boiler 6 - M. Keils Material Steel Outside diameter 47½"
 Length of plain part top 4" Thickness of plates crown 3 3/4" Description of longitudinal joint Weld No. of strengthening ring 2 - Top & Bottom
 bottom 8" Working pressure of furnace by the rules 232 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back ✓ Top 3/4" Bottom 4 1/2"
 Pitch of stays to ditto: Sides 8½" x 8 3/8" Back ✓ Top 8" x 7" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 211 lbs
 Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 69 sq in Working pressure by rules 269 lbs End plates in steam space:
 Material Steel Thickness 1 3/4" Pitch of stays 18½" x 14½" How are stays secured Nuts & Washers Working pressure by rules 227 lbs Material of stays Steel
 Diameter at smallest part 2 1/4" Area supported by each stay 235 3/8 sq in Working pressure by rules 270 lbs Material of Front plates at bottom Steel
 Thickness 1" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
 Diameter of tubes 2½" Pitch of tubes 3 3/4" x 3 5/8" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 7½" x 4 1/4"
 Pitch across wide water spaces 13½" Working pressures by rules 204 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 4½" (3½" x 2) Length as per rule 52 1/2" Distance apart 8" Number and pitch of stays in each 6 - 7"
 Working pressure by rules 227 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 ✓

W1101-0124

Lloyd's Register
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VERTICAL DONKEY BOILER— Manufacturers of Steel *None*

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:— *See other sheet*

The foregoing is a correct description,
 FOR WORKMAN, CLARK & CO., LIMITED.
M. H. Bell Manufacturer.

Dates of Survey { During progress of work in shops— 1912, Feb. 2, 23, 30, Nov. 1, 25, 28, 30, Feb. 14, 20, March 10, 13, 21, 28, April 1913
 { During erection on board vessel— 1-3, 4, 10, 16, 21, 25, 29 up to 25th Nov 1913
 building { Total No. of visits 95

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 20/12/13 Covers _____ Pistons _____ Rods _____
 Connecting rods 10/1/13 Crank shaft 13/8/13 shaft _____ Tunnel shafts 10/9/13 shaft _____ Propeller 9/9/13
 Stern tube 0/9/13 Steam pipes tested 2/9/13 Engine and boiler seatings 12/11/13 Engines holding down bolts 6/11/13
 Completion of pumping arrangements 24/11/13 Boilers fixed 12/11/13 Engines tried under steam 25/11/13
 Main boiler safety valves adjusted 18/11/13 Thickness of adjusting washers 10-14 "
 Material of Crank shaft *Steel* Identification Mark on Do. *440128* Material of Thrust shaft *440128* Identification Mark on Do. *440*
 Material of Tunnel shafts *440* Identification Marks on Do. *26-8-13* Material of Screw shafts *440* Identification Marks on Do. *10-9-13*
 Material of Steam Pipes *1/2 Iron* Test pressure *200 lbs*

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The materials and the workmanship are of good description, and on trials in Belfast Lough, the machinery worked satisfactorily.

In my opinion, it is eligible for record + L.M.C. 11-13, with notation "Forced Draft" "Electric Light" + "Refrigerating Machinery"

It is submitted that
 this vessel is eligible for
 THE RECORD. + L.M.C. 11-13. F.D.

Ref. Mch.

The amount of Entry Fee £ 3 : 0 :
 Special £ 68 : 14 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 26-11-13
 When received, 2/12/13

R. F. Beveridge
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. DEC. 5-1913

Assigned *Thine 11.13*

MACHINERY CERTIFICATE
 WRITTEN.



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