

REPORT ON MACHINERY.

No. 6732
WHIL 16 FEB 1910

Port of Belfast Received at London Office _____ 19
 No. in Survey held at Belfast Date, first Survey July 5th (1909) Last Survey Feb. 8th 1910.
 Reg. Book. J.S.B. Langatua (Number of Visits 48.)
 on the J.S.B. Langatua Tons Gross 7465 Net 4441
 Master _____ Built at Belfast By whom built Waukman Clark & Co. When built 1910
 Engines made at Belfast By whom made _____ when made _____
 Boilers made at _____ By whom made _____ when made _____
 Registered Horse Power _____ Owner Shaw Savill & Albion Ltd Port belonging to Southampton
 Nom. Horse Power as per Section 28 920 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion No. of Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 23-38½-66 Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft as per rule 13.9 Material of Steel
 as fitted 15.12 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 5'-0½"
 Dia. of Tunnel shaft as per rule 12.44 Dia. of Crank shaft journals as per rule 13.21 Dia. of Crank pin 14.8 Size of Crank web 25½ x 9.5 Dia. of thrust shaft under
 collars 14.8 Dia. of screw 16'-6 Pitch of Screw 19'-6 No. of Blades 3 State whether moveable Yes Total surface 75 sq ft.
 No. of Feed pumps 1 Diameter of ditto 6.4 Stroke 20 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 1 Diameter of ditto 6 Stroke 20 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 5 Sizes of Pumps 10 x 12 x 12 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4-3½ 2-2½ 2 9/16 x 10 x 13 1/2 x 24 2 9/16 x 10 x 12 x 12
 No. of Bilge Injections 2 sizes 9½ Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 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 None
 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 Both
 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 Four hold suction How are they protected Wood casings
 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 14-12-09 of Stern Tube 10-12-09 Screw shaft and Propeller 14-12-09
 Is the Screw Shaft Tunnel watertight Stitch door Is it fitted with a watertight door Yes worked from Top platform & Room

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Readman & Co. Ltd
 Total Heating Surface of Boilers 3590 sq ft Forced Draft fitted Yes No. and Description of Boilers 5 - Single End Cylindrical
 Working Pressure 205 lbs Tested by hydraulic pressure to 410 lbs Date of test 17-12-09 No. of Certificate 428
 Can each boiler be worked separately Yes Area of fire grate in each boiler 66.8 sq ft. No. and Description of Safety Valves to
 each boiler 2 - Direct Spring Area of each valve 5.94 sq in Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 2 ft Mean dia. of boilers 5'-4½" Length 11'-10" Material of shell plates Steel
 Thickness 1 1/8" Range of tensile strength 28 to 32 tons the shell plates welded or flanged No Descrip. of riveting: cir. seams Exp. Riv.
 long. seams Auto. Lock Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 10" Lap of plates on width of butt straps 22 1/2"
 Per centages of strength of longitudinal joint rivets 94.7 Working pressure of shell by rules 239 lbs Size of manhole in shell 76" x 12"
 Size of compensating ring McNeil's No. and Description of Furnaces in each boiler 4 - Main Material Steel Outside diameter 42 1/4"
 Length of plain part top 4 bottom 10 Thickness of plates crown 3 3/8" bottom 3 1/4" Description of longitudinal joint Weld No. of strengthening rings 4
 Working pressure of furnace by the rules 232 lbs Combustion chamber plates: Material Steel Thickness: Sides 4 1/4" Back 3 1/2" Top 4 1/4" Bottom 3 1/4"
 Pitch of stays to ditto: Sides 8 1/2" x 8" Back 8 1/2" x 7 1/2" Top 8 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads Auto. nuts Working pressure by rules 206 lbs
 Material of stay Steel Diameter at smallest part 1 1/2" Area supported by each stay 69 1/2 sq in Working pressure by rules 256 lbs and plates in steam space:
 Material Steel Thickness 1 1/16" Pitch of stays 19 1/2" x 16" How are stays secured Nuts & Washers Working pressure by rules 274 lbs Material of stays Steel
 Diameter at smallest part 2 1/2" Area supported by each stay 312 sq in Working pressure by rules 222 lbs Material of Front plates at bottom Steel
 Thickness 1 1/8" Material of Lower back plate Steel Thickness 3 1/2" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 206 lbs
 Diameter of 2 1/2" of tubes 3 3/8" x 3 5/8" Material of tube plate Steel Thickness: Front 1" Back 1 1/16" Mean pitch of stays 15 1/2" x 14"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 212 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 9 1/2" x (3/4" x 2) Length as per rule 32 1/8" Distance apart 8 1/4" Number and pitch of stays in each 3 - 7 1/2"
 Working pressure by rules 213 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 _____

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

0500-0050
14720-0050

Lloyd's Register
Foundation

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 _____ Rivets _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ 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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— Propeller shaft, 3" Crank Shaft, Propeller
 pins & 2 blades, valve spindle, H.P. piston & packing rings, 2 sets M.I.
 piston packing rings, 2 2, P do. H.P. piston valve, Piston rod & nuts
 2 screw truss rolls pulleys & straps, main top end masses, air pump rod
 gasket & check valve, feed & buff pump plunger
 Centrifugal pump impeller, etc. All plan to
 M.H. Bell Manufacturer.

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

Dates of Survey while building: During progress of work in shops— July 5, Sept 3-8-13-17-22, Oct 12-17-20-22-25, Nov 2-10-15-27-30, Dec 1-2-6-7-8-8-10-10-13-14-14
 During erection on board vessel— 15-16-17-17-22, Jan 4-5-6-6-10-13-15-17-21-26-28, Feb 1-3-5-7-8
 Total No. of visits 48

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " No

Dates of Examination of principal parts—Cylinders 3- Sides 04 Covers _____ Pistons _____ Rods _____

Connecting rods 7-12-09 Crank shaft 13- 9 Thrust shaft _____ Tunnel shafts 4-1-10 Shaft _____ Propeller 10-7-2-09

Stern tube 7-12-09 Steam pipes tested 15-1-10 Engine and boiler seatings 21-1-10 Engines holding down bolts 14-1-10

Completion of pumping arrangements 8-2-10 Boilers fixed 21-1-10 Engines tried under steam 3-2-10

Main boiler safety valves adjusted 5-2-10 Thickness of adjusting washers 6-8-10

Material of Crank shafts _____ 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 _____ Test pressure 600 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. It has been recently fitted on board, and on trials under steam in Belfast Lough it worked satisfactorily, with the exception of the main engines air pumps (Pneis). This matter is receiving the attention of the Glasgow Surveyors, and provided a satisfactory report be received from them, I am of opinion that this vessel will be eligible for record + L.M.C. 2.10 with notations "Fouled Draft Electric Light & Regenerating Machinery"

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 2.10.

F.D.

J.W.D. J.P.R.
 18/2/10 See Gls. Rpt. N° 28568.

The amount of Entry Fee..	£ 3 : 0 :	When applied for.
Special ..	£ 66 . 0 :	12-2-1910
Donkey Boiler Fee ..	£ :	When received,
Travelling Expenses (if any) £	:	17-2-10

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

Committee's Minute TUES. 22 FEB 1910

Assigned + L.M.C. 2.10

MACHINERY CERTIFICATE WRITTEN

