

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.P.S. Langatua (Number of Visits 48) Gross 7465

Master Belfast Built at Belfast By whom built Wickman Clark & Bayly Net 4441

Engines made at Belfast By whom made Wickman Clark & Bayly when built 1910

Boilers made at Belfast By whom made Wickman Clark & Bayly when made Wickman Clark & Bayly

Registered Horse Power 920 Owners 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 Lucas Suction Triple Expansion Cylinders 6 No. of Cranks 6

Dia. of Cylinders 23-38 1/2-66 Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft as per rule 13.9 Material of Steel

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 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 5'-0 1/2"

Dia. of Tunnel shaft as per rule 12.64 Dia. of Crank shaft journals as per rule 13.24 Dia. of Crank pin 14 1/2 Size of Crank web 25 1/2 x 9 1/2 Dia. of thrust shaft under

collars 14 1/2 Dia. of screw 16'-6" Pitch of Screw 19'-6" No. of Blades 3 State whether moored Yes Total surface 75 sq ft.

No. of Feed pumps 1 Diameter of ditto 6 1/2 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 2 1/2, 10 x 13 1/2 x 24 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4-3 1/2 2-2 1/2 2 1/2 10 x 12 x 12 9 1/2 x 4 x 12 Holds, &c. 9-3 1/2

No. of Bilge Injections 2 sizes 9 1/2 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes-3 1/2

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 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 Five 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 Yes Is it fitted with a watertight door Yes worked from Top platform & Room

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel Readmore & 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 1/2 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 215 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'-4 1/2" 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 Lap Rivet

long. seams Butt Solder Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 10" Lap of plates or width of butt straps 22 1/8"

Per centages of strength of longitudinal joint 94% Working pressure of shell by rules 239 lbs Size of manhole in shell 16" x 12"

Size of compensating ring McNails No. and Description of Furnaces in each boiler 4-Main Material Steel Outside diameter 42 1/4"

Length of plain part 4' Thickness of plates 3 3/8" Description of longitudinal joint Weld No. of strengthening rings 1

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 1/2"

Pitch of stays to ditto: Sides 8 1/2 x 8 Back 9 1/2 x 7 1/2 Top 8 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 206 lbs

Material of stay Steel Diameter at smallest part 1 1/8 to 2 1/8" Area supported by each stay 69 1/2 sq in Working pressure by rules 256 lbs End plates in steam space:

Material Steel Thickness 1 1/8" Pitch of stays 19 1/2 x 16 How are stays secured Nuts & Washers Working pressure by rules 214 lbs Material of stays Steel

Diameter at smallest part 2 1/2 to 3 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" 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 tube 2 1/2" of tubes 3 3/8 x 3 1/2" Material of tube plate Steel Thickness: Front 1" Back 1 1/8" Mean pitch of stays 15 1/2 x 7 1/2"

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 Yes Diameter 10" Length 10' Thickness of shell plates 1" Material Steel Description of longitudinal joint Weld Diam. of rivet

holes 1" Pitch of rivets 1" Working pressure of shell by rules 212 lbs Diameter of flue 10" Material of flue plates Steel Thickness 1"

If stiffened with rings Yes Distance between rings 10' Working pressure by rules 212 lbs End plates: Thickness 1" How stayed Yes

Working pressure of end plates 212 lbs Area of safety valves to superheater 10 sq in Are they fitted with easing gear Yes

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			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, 1 propeller
 brass & 2 blades, valve spindle, H. P. piston & packing rings, 2 sets M.
 & L. piston packing rings, 2 L. P. do. H. P. piston valve. Piston rod & nuts
 2 new tire rolls pulleys & straps, paint top end masses, air pump rod
 The foregoing is a correct description, basket & deck valve, feed & buffer pump plunger
 FOR WORKMAN, CLARK & CO., LIMITED Centrifugal pump, impeller, etc. & all plan to
 M. H. Bell Manufacturer. Lloyds & Co. & Co.

Dates of Survey while building	<p>During progress of work in shops - July 5. Sept 3. 8. 13. 17. 22. Oct 12. 15. 20. 22. 25. Nov 2. 10. 15. 27. 30. Dec. 1. 2. 6. 7. 8. 8. 10. 10. 13. 14. 14.</p> <p>During erection on board vessel - (1910) 15. 16. 17. 17. 22. Jan. 4. 5. 6. 6. 10. 13. 15. 17. 21. 26. 28. Feb. 1. 3. 5. 7. 8.</p> <p>Total No. of visits 48.</p>	Is the approved plan of main boiler forwarded herewith
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Dates of Examination of principal parts—Cylinders 3-9-09 Sides 09 Covers 5-10 Pistons 5-10 Rods 5-10
 Connecting rods 7-12-09 Crank shaft 13-9-09 Thrust shaft 4-1-10 Tunnel shafts 4-1-10 Screw shaft 4-1-10 Propeller 10-7-12
 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 5-2-10
 Main boiler safety valves adjusted 5-2-10 Thickness of adjusting washers 6-8-10
 Material of Crank shaft 13-12-09 Identification Mark on Do. 13-12-09 Material of Thrust shaft 13-12-09 Identification Mark on Do. 13-12-09
 Material of Tunnel shafts 13-12-09 Identification Marks on Do. 13-12-09 Material of Screw shafts 13-12-09 Identification Marks on Do. 13-12-09
 Material of Steam Pipes 13-12-09 Test pressure 600 lbs. 13-12-09

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 and pumps (Weirs). 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 "Forced Draft - Electric Light - Refrigerating Machinery".

It is submitted that
this vessel is eligible for
THE RECORD. + L MC, 2, 10.

F. D.

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) £			:		:	17-2-1910

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute

TUES. 22 FEB 1910

(The) Assigned

+ Lm 2 10

MACHINERY CERTIFICATE
WRITTEN.



Lloyd's Register
Foundation