

# REPORT ON MACHINERY.

No. 8120.

WED. SEP. 11. 1912

Port of Belfast  
 Date first Survey 30 June 1911 Last Survey 3 Sep 1912  
 No. in Survey held at Belfast  
 Reg. Book. P.S.S. "Vestris"  
 on the Belfast  
 Master Belfast Built at Belfast By whom built Warriman Clark & Co  
 Engines made at Belfast By whom made Warriman Clark & Co when made 1912  
 Boilers made at Belfast By whom made Warriman Clark & Co when made 1912  
 Registered Horse Power 1243 Owners Liverpool Brazil & Rieu Plate S. N. Lloyd  
 Com. Horse Power as per Section 28 1243 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

GINES, &c.—Description of Engines Twin Screw Quadruple Expansion Cylinders 8 No. of Cranks 8  
 Dia. of Cylinders 23-32 1/2-46 1/2-66 1/2 Length of Stroke 48 Revs. per minute 90 Dia. of Screw shaft 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  
 Is 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 5-4  
 Dia. of Tunnel shaft 12-5 1/2 Dia. of Crank shaft journals 13-19 Dia. of Crank pin 13-4 Size of Crank webs 18-4 x 9 Dia. of thrust shaft under  
 collars 13-4 Dia. of screw 16-6 Pitch of Screw 1 1/4-9 No. of Blades 3 State whether moveable Yes Total surface 75-28 ft  
 No. of Feed pumps 2 Diameter of ditto 5 1/2 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 5 1/2 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines See notes on pump sheet No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4-3 1/2 In Holds, &c. 10-3 1/2

No. of Bilge Injections 2 sizes 10 Connected to condenser, or to circulating pump Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes  
 Are all the bilge suction pipes fitted with roses Yes Are they Valves or Cocks Both  
 Are all connections with the sea direct on the skin of the ship Yes 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 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 29-4-12 of Stern Tube 29-4-12 Screw shaft and Propeller 2-5-12  
 Is the Screw Shaft Tunnel watertight Stated to be it fitted with a watertight door Yes worked from Top platform  
 BOILERS, &c.—(Letter for record S) Manufacturers of Steel N. Beaudouin & Co  
 Total Heating Surface of Boilers 16498 sq ft Forced Draft fitted Yes No. and Description of Boilers 3 Double End Cylinders  
 Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 29-2-12 No. of Certificate 449  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 133 sq ft No. and Description of Safety Valves to  
 each boiler 3 Direct Spring Area of each valve 12-5 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 8 ft Mean dia. of boilers 16-3 Length 20-6 Material of shell plates Steel  
 Thickness 1 1/4 Range of tensile strength 30-33 1/2 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams See notes  
 long. seams Butt rivet holes in long. seams 1 1/4 Pitch of rivets 10 1/2 Width of butt straps 23 1/2  
 Per centages of strength of longitudinal joint 93-5 Working pressure of shell by rules 236 lbs Size of manhole in shell 16 x 12  
 Size of compensating ring See notes No. and Description of Furnaces in each boiler 4-Compound Material Steel Outside diameter 42 3/4  
 Length of plain part See notes Thickness of plates See notes Description of longitudinal joint Weld No. of strengthening rings See notes  
 Working pressure of furnace by the rules 242 lbs Combustion chamber plates: Material Steel Thickness: Sides 4 1/4 Back 4 1/4 Top 4 1/4 Bottom 3 1/2  
 Pitch of stays to ditto: Sides 8 1/2 x 4 1/2 Back See notes Top 8 1/2 x 4 1/2 Are stays fitted with nuts or riveted heads Yes Working pressure by rules 228 lbs  
 Material of stays Steel Diameter at smallest part 1 1/4 Area supported by each stay 61-46 sq in Working pressure by rules 228 lbs Material of stays Steel  
 Material Steel Thickness 1 1/4 Pitch of stays 21 1/2 x 16 1/2 How are stays secured Nuts Working pressure by rules 220 lbs Material of Front plates at bottom Steel  
 Diameter at smallest part 8-48 in supported by each stay 350-62 sq in Working pressure by rules 251 lbs Material of Front plates at bottom Steel  
 Thickness 1 Material of Lower back plate See notes Thickness See notes Greatest pitch of stays See notes Working pressure of plate by rules See notes  
 Diameter of tubes 2 1/2 Pitch of tubes 3 1/2 x 3 1/2 Material of tube plates Steel Thickness: Front 1 1/4 Back 1 3/8 Mean pitch of stays 7 1/2  
 Pitch across wide water spaces 13 1/2 Working pressures by rules 217 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8 1/2 x (3/4 x 2) Length as per rule 52 3/8 Distance apart 8 1/2 x 7 1/2 Number and pitch of stays in each 6-7 1/2  
 Working pressure by rules 215 lbs Superheater or Steam chest; how connected to boiler See notes Can the superheater be shut off and the boiler worked  
 separately See notes Diameter See notes Length See notes Thickness of shell plates See notes Material See notes Description of longitudinal joint See notes Diam. of rivet  
 holes See notes Pitch of rivets See notes Working pressure of shell by rules See notes Diameter of flue See notes Material of flue plates See notes Thickness See notes  
 If stiffened with rings See notes Distance between rings See notes Working pressure by rules See notes End plates: Thickness See notes How stayed See notes  
 Working pressure of end plates See notes Area of safety valves to superheater See notes Are they fitted with easing gear See notes

Water Capacity.  
 Tons  
 65  
 55

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# 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 Stayed by  
Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— 1 Propeller shaft, 2 Propeller blades; 1 Piston  
rod; 2 Slide Valve Spindles; 2 pair bottom end bushes; 2 pair top end  
bushes; Set packing rings & springs each set per tan; Set do per H.P. & M.P. fuel  
valves; air pump bucket and complete; air pump. bucket and head valve;  
The foregoing is a correct description, of this pump and spindles etc. and all gear to  
FOR WORKMAN, CLARK & CO., LIMITED  
M. H. Bell Manufacturer.

Dates of Survey while building  
During progress of work in shops— 1911, June 30, July 24, Aug 1, 9, 15, 24, 25, 30 Sep 12, 18, 20, 21, 25, 26 Oct  
During erection on board vessel— 10, 16, 17, 19, 20, 23, 25 up till 3<sup>rd</sup> Sep 1912  
Total No. of visits 112

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

Dates of Examination of principal parts—Cylinders 20—Slides 11 Covers Piston Rods  
Connecting rods 4—3—12 Crank shaft 2—2— Thrust shaft Tunnel shafts Screw shafts 2—12 Propeller 16—2—12  
Stern tube 21—2—12 Steam pipes tested 8—5—12 Engine and boiler seatings 31—5—12 Engines holding down bolts 12—6—12  
Completion of pumping arrangements 8—4—12 Boilers fixed 31—5—12 Engines tried under steam 24—4—12  
Main boiler safety valves adjusted 24—4—12 Thickness of adjusting washers 11—15—  
Material of Crank shaft *Steel* Identification Mark on Do. *LLX 25* Material of Thrust shaft *Do* Identification Mark on Do. *Do*  
Material of Tunnel shafts *Do* Identification Marks on Do. *Do* Material of Screw shafts *Do* Identification Marks on Do. *Do*  
Material of Steam Pipes *W. Iron* Test pressure *650 lbs sq*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The machinery of this vessel has been constructed under  
Special Survey, and is of good material and workmanship.  
On trial under steam it worked satisfactorily, and in  
our opinion, it is eligible for record + L.M.C. 9-12 with  
notation "Forced Draft Electric Light & Refrigerating Machinery"

It is submitted that  
this vessel is eligible for  
THE RECORD, + L.M.C. 9.12.

3 DB(FD) & 1 Aux S.B.

The amount of Entry Fee.. £ 3 - 0 -  
Special .. £ 76 - 1 - 6  
Donkey Boiler Fee .. £ 1 - - -  
Travelling Expenses (if any) £ - - -  
When applied for, 4-9-12  
When received, 4-9-12

Committee's Minute FRIGER 13.1912

Assigned

MACHINERY CERTIFICATE  
WRITTEN 12.9.12

*J.M. J.W.D.*  
11/9/12  
R. F. Newnham & A. J. Thomas  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.