

REPORT ON MACHINERY.

Port of Belfast

Received at London Office PHI. 2 JUN 1905

No. in Survey held at Belfast Date, first Survey Nov 2, 1904 Last Survey May 25, 1905
 Reg. Book. S.S. Bologna (Number of Visits 48)
 on the Belfast Master Belfast Built at Belfast By whom built Harland & Wolff L Tons { Gross 4603
 Engines made at Belfast By whom made Harland & Wolff L When built 1905 Net 1905
 Boilers made at Belfast By whom made Harland & Wolff L when made 1905
 Registered Horse Power 5055 Owners Italia Società di Navigazione a Vapori Port belonging to Genoa
 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion of Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 19 1/2 - 33 - 55 1/2 Length of Stroke 39 Revs. per minute 83 Dia. of Screw shaft as per rule 11.54 Material of screw shaft as fitted 12.5
 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 51"
 Dia. of Tunnel shaft as per rule 10.48 Dia. of Crank shaft journals as per rule 11.9 Dia. of Crank pin 12 Size of Crank webs 16 x 8 Dia. of thrust shaft under collars 11 1/2 Dia. of screw 13 - 9 Pitch of screw 14 - 6 No. of blades 3 State whether moveable Yes Total surface 49 1/2 sq ft
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 20 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 1 Diameter of ditto 4 1/2 Stroke 20 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 1 No. and size of Suctions connected to both Bilge and Donkey pumps Side of Pumps Sheet
 In Engine Room 4 - 3 1/2 In Holds, &c. 8 - 3 1/2 2 - 3

No. of bilge injections 2 sizes 7 Connected to condenser, or to circulating pump Pump Is a separate donkey suction fitted in Engine room & size 2 - 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 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 None
 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 None
 What pipes are carried through the bunkers Fore 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launching Is the screw shaft tunnel watertight Stated to be
 Is it fitted with a watertight door Yes worked from C. R. top platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 6900 sq ft Is forced draft fitted Yes
 No. and Description of Boilers 2 - Cylind^r Double End Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs
 Date of test 14-3-05 Can each boiler be worked separately Yes Area of fire grate in each boiler 82 1/2 sq ft No. and Description of safety valves to each boiler 2 - Direct Spring Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers on woodwork 18" Mean dia. of boilers 13'-0" Length 20'-4" Material of shell plates Steel
 Thickness 3/2" Range of tensile strength 29-32 Are they welded or flanged No Descrip. of riveting: cir. seams Lap Dr Y long. seams Butt Joints
 Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9" Lap of plates or width of butt straps 21"
 Per centages of strength of longitudinal joint rivets 91.6 Working pressure of shell by rules 227 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring No Nails No. and Description of Furnaces in each boiler 2 - Morrison Material Steel Outside diameter 48 1/4"
 Length of plain part top 6" Thickness of plates crown 3/16" Description of longitudinal joint Weld No. of strengthening rings 47 on 2-3 bottom
 Working pressure of furnace by the rules 234 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/16" Back 1" Top 3/16" Bottom 1/4"
 Pitch of stays to ditto: Sides 8 x 7 1/2" Back 8 x 7" Top 8 x 7" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 255 lbs
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 58 sq in Working pressure by rules 272 lbs End plates in steam space: Material Steel Thickness 1 1/16" Pitch of stays 16 x 16 How are stays secured By Nuts & Washers Working pressure by rules 260 lbs Material of stays Steel
 Diameter at smallest part 2 5/16" x 2 3/4" supported by each stay 256 sq in Working pressure by rules 232 lbs Material of Front plates at bottom Steel
 Thickness 4/16" Material of Lower back plate Yes Thickness 1" Greatest pitch of stays Yes Working pressure of plate by rules Yes
 Diameter of tubes 2 1/4" Pitch of tubes 4 x 4 Material of tube plates Steel Thickness: Front 1/16" Back 1" Mean pitch of stays 8 x 8"
 Pitch across wide water spaces 14" Working pressures by rules 365 lbs with 8 flanges Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 13 1/4" Length as per rule 50" Distance apart 8" Number and pitch of Stays in each 6 - 7"
 Working pressure by rules 241 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes
 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

DONKEY BOILER— No. 1 Description *Cylind. Single End*
 Made at *Welford* By whom made *Harland & Wolff Ltd* When made *1905* Where fixed *Corkfield*
 Working pressure *200 lbs* tested by hydraulic pressure to *400 lbs* No. of Certificate *352* Fire grate area *28 3/4* Description of safety valves *2 - Direct Spring*
 No. of safety valves *2* Area of each *4' 9" sq* Pressure to which they are adjusted *200 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *Yes* Dia. of donkey boiler *10'-0"* Length *9'-10"* Material of shell plates *Plate* Thickness *1 1/2"* Range of tensile strength *26-32* Descrip. of riveting long seams *Butt Double* Dia. of rivet holes *1 1/2"* Whether punched or drilled *Drilled* Pitch of rivets *7 1/2"*
 Lap of plating *1 1/2"* Per centage of strength of joint *90%* Rivets *90%* Thickness of shell plates *1 1/2"* Radius of do *20"* No. of Stays to do *16 x 15*
 Dia. of stays *2 1/4 x 2 3/4* Diameter of furnace Top *3 1/4* Bottom *3 1/4* Length of furnace *6'-10"* Thickness of furnace plates *9/16"* Description of joint *Weld* Thickness of furnace plates *5"* Stayed by *1 1/2" S. L. Stay Dia 7 1/8 x 7* Working pressure of shell by rules *224 lbs*
 Working pressure of furnace by rules *230 lbs* Diameter of uptake *4"* Thickness of uptake plates *7/16"* Thickness of water tubes *4 1/2" x 4 1/2"*

SPARE GEAR. State the articles supplied:— *See other sheets*

The foregoing is a correct description,
 To *Harland & Wolff Ltd* Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1904, Nov 2, 8, 11, 18, 22, 26, 30, Dec 2, 6, 9, 13, 15, 19, 21, 1905, Jan 3, 6, 9, 10, 12, 13, 14, 23, 25*
 During erection on board vessel— *26, Feb 1, 3, 7, 8, 10, 13, 20, 22, 24, Mar 2, 3, 7, 14, 15, 14, 23, 24, 31 April 4, 5, 11, 18 May 2, 25*
 Total No. of visits *48*

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

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 workman-ship, and the materials used, are of good description throughout, and on trial under steam, in Perfect Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 5-05. Forced Draft & Electric Light

It is submitted that this vessel is eligible for THE RECORD *L.M.C. 5-05. F.D. Elec: Light.*

Ed. 2.6.05
2.6.05

The amount of Entry Fee: £ 3 : - :
 Special £ 45 : 5 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *21-1-1905*
 When received, *5.6.05*

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

Committee's Minute *TUES. 6 JUN 1905*
 Assigned *+ L.M.C. 5-05*

MACHINERY CERTIFICATE WRITTEN.

Donkey Pumps
 2 Mains Feed *11 1/2" x 8" x 21"*
 General *10" x 7" x 10"* Duplex Northington
 Ballast *7 1/2" x 10" x 10"*
 Steyer Feed *7 1/2" x 5" x 6"*
 Fresh Water *6" x 4" x 6"*

Spare Gear

Propeller Shaft & Propeller Coos. Complete
1/2 Crank Shaft
2 Propeller Blades
1 Slide-valve spindle for H.P. & M.P.
1 " " " " " L.P.
1 set Crank Pin bushes
" " " " " Crosshead
1 Air pump rod & set valves
1 Link complete for each pump
1 Complete set piston rings each cylinder
1 set Eccentric strips each engine
1 Quadrant block
3 Safety valve & pumps
2 Feed pump escape valve & pumps
Set spare gear for Centrifugal Pumps
Condenser & boiler tubes set. set?
and all gear to Lloyd's Rules extra

R. J. Beveridge