

Port of *Belfast*

Received at London Office

1UES. 6 DEC. 1904

No. in Survey held at Reg. Book.

Date, first Survey *12 March*

Last Survey *12 Dec 1904*

(Number of Visits *51*)

on the

Master *J. McHugh*

Built at *Belfast*

By whom built *Harland & Wolff*

Tons { Gross *6689*
Net *4286*

When built *1904*

Engines made at *Belfast*

By whom made *Harland & Wolff L^o*

when made *1904*

Boilers made at

By whom made

when made

Registered Horse Power

Owners *Shaw Savill & Albion Coy^{ys}*

belonging to *Southampton*

Nom. Horse Power as per Section 28 *808 1/2*

Is Refrigerating Machinery fitted for cargo purposes *Yes*

Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Lucin Screw Quadruple Exp^{ns}* of Cylinders *8* No. of Cranks *8*

Dia. of Cylinders *21"-30"-43 1/2"-62"* Length of Stroke *48"* Revs. per minute *76* Dia. of Screw shaft as per rule *1 3/4"* Material of screw shaft *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 *54"*

Dia. of Tunnel shaft as per rule *1 1/2"* Dia. of Crank shaft journals as per rule *1 3/4"* Dia. of Crank pin *1 3/4"* Size of Crank webs *1 1/2" x 1 1/2"* Dia. of thrust shaft under collars *1 3/4"* Dia. of screw *1 5/8"* Pitch of screw *1 9/16"* No. of blades *3* State whether moveable *Yes* Total surface *6 1/2 sq ft.*

No. of Feed pumps *2* Diameter of ditto *4 1/2"* Stroke *28"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *5"* Stroke *28"* 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 *4 - 2 1/2" x 2 - 2 1/2"* In Holds, &c. *12 - 3 1/2" x 2 - 2 1/2"*

No. of bilge injections *2* sizes *8 1/2"* Connected to condenser, or to circulating pump *Pump* a separate donkey suction fitted in Engine room & size *Yes - 3 1/2" x 3"*

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 *No*

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 *Fore hold sections* 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* screw shaft tunnel watertight *Stated to be*

Is it fitted with a watertight door *Yes* worked from *Top Deck fine Room Platform*

BOILERS, &c.— (Letter for record) Total Heating Surface of Boilers *14580 sq ft* Is forced draft fitted *No*

No. and Description of Boilers *2 Double End Cylinders* Working Pressure *215 lbs* Is forced by hydraulic pressure to *430 lbs*

Date of test *8-9-04* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *64 1/2 sq ft* No. and Description of safety valves to each boiler *Two - Spring* Area of each valve *15.9 sq ft* Pressure to which they are adjusted *215 lbs* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers on woodwork *About 3 ft* Mean dia. of boilers *15.6"* Length *10.9"* Material of shell plates *Steel*

Thickness *1 3/8"* Range of tensile strength *29-32* Are they welded or flanged *No* Descrip. of riveting: cir. seams *Lap Rivet* long. seams *Butt Rivet*

Diameter of rivet holes in long. seams *1 3/8"* Pitch of rivets *10"* Length of plates or width of butt straps *23 1/2"*

Per centages of strength of longitudinal joint rivets *96.5* Working pressure of shell by rules *247 lbs* Size of manhole in shell *16" x 12"*

Size of compensating ring *11.0 Nails* No. and Description of Furnaces in each boiler *6 - Horizontal* Material *Steel* Outside diameter *49 1/4"*

Length of plain part top *4"* Thickness of plates crown *3 3/8"* Description of longitudinal joint *Welded* No. of strengthening rings *4 1/2*

Working pressure of furnace by the rules *216 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/8"* Back *1/2"* Top *5/16"* Bottom *3/16"*

Pitch of stays to ditto: Sides *15 x 7 1/2"* Back *8 1/2 x 7 1/2"* Top *12 x 8 1/2"* If stays are fitted with nuts or riveted heads *Nuts inside* Working pressure by rules *217 lbs*

Material of stays *Steel* Diameter at smallest part *1 1/2"* Area supported by each stay *52 1/2 sq ft* Working pressure by rules *227 lbs* End plates in steam space: *230 lbs*

Material *Steel* Thickness *1 1/4"* Pitch of stays *16 1/2 x 16"* How are stays secured *Nuts & Washers* Working pressure by rules *281 lbs* Material of stays *Steel*

Diameter at smallest part *2 3/8"* Area supported by each stay *260 sq ft* Working pressure by rules *230 lbs* Material of Front plates at bottom *Steel*

Thickness *1 5/16"* Material of Lower back plate *Steel* Thickness *1 1/8"* Greatest pitch of stays *18 1/2"* Working pressure of plate by rules *379 lbs*

Diameter of tubes *2 1/2"* Pitch of tubes *4" x 4"* Material of tube plate *Steel* Thickness: Front *15 x 7/8"* Back *7/8"* Mean pitch of stays *8" x 8"*

Pitch across wide water spaces *14"* Working pressures by rules *307 lbs* to Chamber tops: Material *W. Iron* depth and thickness of girder at centre *9 1/2" x (3 x 2)* Length as per rule *51"* Distance apart *8 1/2"* Number and pitch of Stays in each *6 - 7 1/2"*

Working pressure by rules *223 lbs* Superheater or Steam chest; how connected to boiler *Yes* Can the superheater be shut off and the boiler worked separately *Yes*

Diameter *2 7/8"* Length *32 1/2"* Thickness of shell plates *1 1/4"* Material *Steel* Description of longitudinal joint *Welded* Diam. of rivet holes *1 3/8"* Pitch of rivets *10"* Working pressure of shell by rules *247 lbs* Diameter of flue *15 1/2"* Material of flue plates *Steel* Thickness *1 1/4"*

If stiffened with rings *Yes* Distance between rings *18"* Working pressure by rules *247 lbs* End plates: Thickness *1 1/4"* How stayed *Yes*

Working pressure of end plates *247 lbs* Area of safety valves to superheater *247 lbs* Are they fitted with easing gear *Yes*

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If not, state whether, and when, one will be sent



DONKEY BOILER— No. None Description

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ 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 _____ 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 _____

Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— See other sheet

The foregoing is a correct description,
for Horsfield & Wolff Manufacturer.

Dates of Survey while building

During progress of work in shops	March 12-16-18-24-31	April 7-14-18-22-28	May 2-4-9-11-14-20-25-27
During erection on board vessel	June 3-7-9-13-23-24	July 31-27	Aug 11-17-23

Total No. of visits 51

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of donkey boiler forwarded herewith Yes

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

The machinery of this vessel, has been constructed under Special License, and in accordance with the Rules. The materials and the workmanship used in its construction, are good throughout, and on trial in Belfast Lough, it worked satisfactorily.

In my opinion it is eligible for record + L.M.C. 12-04.

Reports on the Electric Light Installation, and on the Refrigerating Machinery, will be forwarded later.

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 12.04. ELEC. LIGHT. REF. MCHY.

W.S.
6.12.04.

W.S.
6.12.04

The amount of Entry Fee. . . £ 3 : 0

Special £ 60 : 8

Donkey Boiler Fee £ : :

Travelling Expenses (if any) £ : :

When applied for. 2-12-04

When received. 8/12/04

W.S.
6.12.04

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

Committee's Minute

Assigned

FRI. 9 DEC 1904

+L.M.C. 12.04

Elec. Light.

MACHINERY CERTIFICATE WRITTEN.

Donkey Pumps:

Main Feed 11" x 8" x 24" Double
General 9 1/2" x 4" x 18" Woodcock's Single
Auxiliary Feed - - - - -
Ballast 10" x 10" x 10" Duplex
Fire 4 x 4 x 5
F. Water 4 1/2 x 5 x 6

Spare Gear

5/8" Crank Shaft
Propeller Shaft & 2 Main Propeller Blades
Pawl Crank pin braces.
Crosshead
Air Pump bucket rod complete
head & foot valves
Sets piston rings for H.P. M.P. M.P. cylinders
1 H.P. valve spindle with neck bush.
1 H.P.
Main pump rod, bucket, valves set.
Impeller & spindle for Main Cent. Circulating Pump
Eccentric Strap complete.
Escape valve springs; Condenser tubes, journals set.
Spare gear for auxiliary pumps set.
and all gear to Lloyd's Rules additional.

R. J. Beveridge

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)