

REPORT ON MACHINERY.

Port of

Belfast

Received at London Office

TUES. MAR 11 1902

No. in Survey held at
Reg. Book.

Belfast

Date, first Survey

1st Oct 1900

Last Survey

6th March 1902

(Number of Visits 76)

on the

J.S.B. "Warwickshire"

Gross 7966
Net 5064

When built 1902

Master J.H. Lewis

Built at

Belfast

By whom built

Harland & Wolff L.

Engines made at

Belfast

By whom made

Harland & Wolff L.

when made 1902

Boilers made at

"

By whom made

"

when made 1902

Registered Horse Power

Owners

The Ribby Steamship Coy. Ltd.

Port belonging to

Liverpool

Nom. Horse Power as per Section 28

903

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Twin Screw Quadruple Expansion

Eight

No. of Cranks Eight

Dia. of Cylinders

22-31 1/2-46-67

Length of Stroke

51

Revs. per minute

78

Dia. of Screw shaft

as per rule 13.12

as fitted 14.5

Lgth. of stern bush

49 1/2

Dia. of Tunnel shaft

as per rule 12.5

as fitted 13.25

Dia. of Crank shaft journals

as per rule 13.12

as fitted 14.0

Dia. of Crank pin

14

Size of Crank webs

24 1/2 x 10

Dia. of thrust shaft under

collars 14

Dia. of screw

16-0

Pitch of screw

20-6

No. of blades

3 each

State whether moveable

Yes

Total surface

632 sq ft

each

No. of Feed pumps

One each

Diameter of ditto

4 1/2

Stroke

30

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

One

Diameter of ditto

5

Stroke

30

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

6

Sizes of Pumps

General 9 x 6 x 10 duplex

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3 1/2" & Two 2 1/2"

In Engine Room

Four 3 1/2"

Two 2 1/2"

Holds, &c.

Nine 3 1/2" & Five 2 1/2"

No. of bilge injections

2

sizes

8"

Connected to condenser, or to circulating pump

Pump

a separate donkey suction fitted in Engine room & size

Four 4"

Are all the bilge suction pipes fitted with roses

Yes

Are the roses in Engine room always accessible

Yes

Are the sluices in 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

Above & 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

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

the screw shaft tunnel watertight

Stated &c.

Is it fitted with a watertight door

Yes

worked from

Engine Room

top platform

BOILERS, &c.—

(Letter for record)

Total Heating Surface of Boilers

15780 sq ft

Is forced draft fitted

No

No. and Description of Boilers

Two Single Ended

Two Double Ended

Working Pressure

210 lbs

Tested by hydraulic pressure to

420 lbs

Date of test

5/2/01

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

8.72 sq ft

No. and Description of safety valves to

each boiler

Two 4" & Two 3" Spring

Area of each valve

9.62 sq ft

Pressure to which they are adjusted

210 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers

on woodwork

about 2 ft

Mean dia. of boilers

15-6 1/2

Length

19-6

Material of shell plates

Steel

Thickness

1 1/2

Range of tensile strength

29-32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

Lap, double

long. seams

Butt

Shell

Lap

width of butt straps

22 1/2

Diameter of rivet holes in long. seams

1 1/2

Pitch of rivets

10

Lap of plates or width of butt straps

22 1/2

Per centages of strength of longitudinal joint

rivets 93.1

Working pressure of shell by rules

238 lbs

Size of manhole in shell

16 x 12

Size of compensating ring

McNails

No. and Description of Furnaces in each boiler

B. Ended

8

Material

Steel

Outside diameter

43 3/4

Length of plain part

top 2 1/2

Thickness of plates

crown 3/8

Description of longitudinal joint

Weld

No. of strengthening rings

37 on

C. Cham. bottom

Bottom

3

Working pressure of furnace by the rules

229 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

1 1/2

Back

1 1/2

Top

3/4

Bottom

3/4

Pitch of stays to ditto

Sides 7 1/2 x 7 1/2

Back

8 1/2 x 6 3/4

Top

8 x 7 1/2

If stays are fitted with nuts or riveted heads

Nuts inside

Working pressure by rules

220 lbs

Material of stays

Steel

Diameter at smallest part

1 1/2 x 1 1/2

Area supported by each stay

55 1/2

Working pressure by rules

213 lbs

Material of stays

Steel

Material

Steel

Thickness

1 1/2

Pitch of stays

18 x 18 1/2

How are stays secured

Nuts & Washers

Working pressure by rules

212 lbs

Diameter at smallest part

2 1/2 x 3

Area supported by each stay

294 sq ft

Working pressure by rules

238 lbs

Material of Front plates at bottom

Steel

Thickness

3/4

Material of Lower back plate

Steel

Thickness

3/4

Greatest pitch of stays

14

Working pressure of plate by rules

235 lbs with 1 1/2

Diameter of tubes

2 1/2

Pitch of tubes

4 x 3 1/2

Material of tube plates

Steel

Thickness: Front

3/4

Back

3/4

Mean pitch of stays

8 x 7 1/2

Pitch across wide water spaces

18 1/2

Working pressures by rules

370 lbs with 1 1/2

Orders to Chamber tops: Material

Steel

Depth and

thickness of girders

Length as per rule

29 1/2

Distance apart

8

Number and pitch of Stays in each

8 x 7 1/2

Working pressure by rules

244 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

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

Lloyd's Register

Foundation

W584-0128

DONKEY BOILER— *No. 1111* 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:— *Two M. Mauge Propeller Blades; set crank pin crosses; eccentric strap & shaft complete (H.P. & L.P.); 2 slide valve spindles; main bearing bush complete; air pump rod; H.P. valve spindle neck bushes; spare spindles for boiler stop valves; piston rod glands; neck bush; sets spare gear for Weirs, and other auxiliary pumps and engines set & and all gear to Rules extra.*

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

Dates of Survey while building	During progress of work in shops	During erection on board vessel	Total No. of visits
	<i>Dec. 9. 1901, Jan. 1. 1902, Feb. 11. 21, Mar. 6. 13. 15. 29, April 4. 13. 18. 25, May 2</i>	<i>10. 14. 17. 23. 24. 27. 30, June 5. 12. 14. 19. 21. 24, July 3. 8. 11. 25. 29, Aug. 2. 6. 9. 13. 21, Sept. 7. 11</i>	<i>46</i>

Is the approved plan of main boiler forwarded herewith

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


Material of screw shaft *Lydi-Brown* 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 liners 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 ☒ If two liners are fitted, is the shaft lapped or protected between the liners ☒

The machinery of this vessel has been constructed under Special Survey, and is of good material, and workmanship. It has been securely fitted on board, and an trial under steam, in Belfast Lough, it worked most satisfactorily. In my opinion it is capable to have record + L.M.C. 3.02, "Electric Light" in the Register Book.

A Report on the Electric Light, will be sent later.

It is submitted that this vessel is eligible for THE RECORD  LMC 3.02. *Electric light*

C.M.
11.3.02
E.S.
11.3.02

The amount of Entry Fee.	£ 3	When applied for,	4-3-02
Special	£ 65-3-	When received,	11.3.02
Donkey Boiler Fee	£		
Travelling Expenses (if any) £			

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

Committee's Minute
Assigned
FRI. MAR 14 1902
+ LMC 3.02