

REPORT ON MACHINERY.

Port of

Belfast

Received at London Office

JULY, AUG 27 1901

Survey held at

Belfast

Date, first Survey

25 Aug 1901

Last Survey

22 Aug 1901

Book.

on the

S.S. Philadelphia (ex Paris)

(Number of Visits 11)

Tons

Gross 10438

Net 4599

Built at

Glasgow

By whom built

J. Thomson

When built

1889

Made at

Belfast

By whom made

Harland & Wolff Ltd

When made

1901

Made at

By whom made

When made

1901

Horse Power

Owners

The International Navigation Co (New York)

Horse Power as per Section 28

2675

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

Yes

Description of Engines

Seven Screw Quadruple Expansion of Cylinders

Eight

No. of Cranks Eight

Diameter of Cylinders

38 1/2 - 54 - 76 - 106

Length of Stroke

60

Revs. per minute

90

Dia. of Screw shaft

as per rule 20 1/2

Lgth. of stern bush

7'-6"

Diameter of Tunnel shaft

as per rule 18 1/2

Dia. of Crank shaft journals

as per rule 19 1/2

Dia. of Crank pin

2 1/4

Size of Crank webs

39 x 15

Dia. of thrust shaft under

Diameter of screws

20-0

Pitch of screws

26'-9"

No. of blades

3 on each

State whether moveable

Yes

Total surface

90 sq ft.

Feed pumps

Four

Diameter of ditto

16 x 11 x 18

Stroke

Duplex

Can one be overhauled while the other is at work

Yes

Bilge pumps

Diameter of ditto

6 x 8 1/2 x 6

Stroke

Duplex

Can one be overhauled while the other is at work

Yes

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

2 Bilge 9 x 12 x 10

Duplex

Donkey Engines

New

Size of Pump

2 Bilge 9 x 12 x 10

Duplex

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

2 Bilge 9 x 12 x 10

Duplex

Engine Room

Diameter of ditto

10 x 10 x 10

Stroke

Duplex

Can one be overhauled while the other is at work

Yes

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

2 Bilge 9 x 12 x 10

Duplex

Bilge injections

Four

Diameter of ditto

10

Stroke

Duplex

Can one be overhauled while the other is at work

Yes

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

2 Bilge 9 x 12 x 10

Are the roses in Engine room always accessible

Yes

Are the sluices on Engine room bulkheads always accessible

Yes

Are the discharge pipes above or below the deep water line

Below

Are the blow off cocks fitted with a spigot and brass covering plate

Yes

How are they protected

Wood casings

Are the roses in Engine room always accessible

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DONKEY BOILER—

No. *one*Description *behind? Single Ended*Made at *Belfast*By whom made *Harland & Wolff L^{td}*When made *1901*Where fixed *Main Deck*Working pressure *104 lbs* Made by hydraulic pressure to *210 lbs* No. of Certificate *299* Fire grate area *35 sq ft* Description of safety valves *Direct Spring*No. of safety valves *Two* Area of each *5 1/4 sq ft* Pressure to which they are adjusted *104 lbs* fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*Dia. of donkey boiler *10'-6"* Length *9'-6"* Material of shell plates *Steel* Thickness *3 1/2"* Range of tensile strength *28-32* Descrip. of riveting long. seams *Butt Square*Dia. of rivet holes *1"* Whether punched or drilled *Punch* Pitch of rivets *4 1/2"*Butt *Yes* Lap of plating *10 1/4"* Per centage of strength of joint *75%* Rivets *2 1/2"* Thickness of shell *3 1/2"* Radius of do. *15"* of Stays to do. *15 1/2" x 15"*Dia. of stays *2 1/2"* Diameter of furnace Top *3 1/2"* Bottom *1 1/2"* Length of furnace *6'-5"* Thickness of furnace plates *3 1/2"* Description of joint *D. Butt* Thickness of furnace crown plates *1 1/2"* Stayed by *Seven stay 1 1/2" x 1 1/2" pitch* Working pressure of shell by rules *28 lbs*Working pressure of furnace by rules *135 lbs* Diameter of uptake *1 1/2"* Thickness of uptake plates *3 1/2"* Thickness of water tubes *4 1/2" x 4 1/2"*

SPARE GEAR. State the articles supplied:—

Propeller Shaft. Thrust Shaft. Crank Shaft 3'. 2 propeller blades; propeller cross; 3 eccentric straps; 4 eccentric rods; set valve spindle & saddle blocks; 1 cross head; 2 sets, sets piston packing rings for each of cylinders with pump. Complete set of spare gear for all pumps. Fan Engines ect. and a quantity of other spare parts and requirements.

The foregoing is a correct description, *Harland & Wolff L^{td} Manufacturer*

Dates of Survey while building

During progress of work in shops—	1900. Jan 25. Feb 5-13-15-22. March 2. 4. 15. 19. 23. 26-27. April 3. 5. 9. 12. 23. 27. May 8. 31
During erection on board vessel—	June 12. 15. 20. 24. 29. July 14. 26. 31. Sept. 3. 11. 16. 24. Oct. 2. 9. 12. 14. 20. 22. 29. Nov 12. 16. 21. 23
Total No. of visits	117

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

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

Material of screw shaft *Super Steel* the screw shafts fitted with *three* continuous liners the whole length of the stern tubes *Yes*

Is the after end of the liners 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*

The engines and boilers of this vessel have been examined under Special Survey, and in accordance with the approved plans. The engines are of the finest usual quadruple expansion, four crank, balanced type.

The shafting throughout is of the best hydraulically pressed mild steel of dimensions in excess of our requirements. The propeller shafts, which were formerly carried athwart, to frames of A section, are now supported by the main frames of the vessel, which have been "boxed out" for this purpose.

The main steam pipes are of cold drawn steel, and have been tested by hydraulics to 60 lbs per sq. inchable expansion joints, and strongly built steel plate thrust blocks have been fitted in each range of piping. All the pumps are of the independent type, none being attached to the main engines. On the trial trip, the main engines worked most satisfactorily. There are two sets of air pumps (two in a set) of the American "Blake" type, each 24 diam. by 18 stroke, driven by direct acting air engines. These pumps were fitted at the request of the owners. On a trial maximum vacuum obtained, was 23 1/2 inches, with the main engines working 78 revolutions. In my opinion, the machinery is eligible to be recorded.

+ L.M.C. 8-01 + N.E. & B. 1901. Forced Draft Electric Light and N.D. Boiler!

The amount of Entry Fee. . . £ 3 : - : When applied for, *24-8-1901*

Special £ 153-15 : : When received, *29-8-1901*

Donkey Boiler Fee £ : : : : : *29-8-1901*

Travelling Expenses (if any) £ : : : : : *29-8-1901*

Committee's Minute

Assigned

FRI. AUG 30 1901

+ L.M.C. 8,01

+ N.E. & B. 8,01

MACHINERY CERTIFICATE

WRITTEN 30-8-01

N.D.B. 01

70

R. J. Bennett
Engineer Surveyor to Lloyd's Register of British & Foreign Ships

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. 8,01 + N.E. & B. 8,01

N.D.B. 01

wp. N.B. 206

27-8-01

27-8-01