

REPORT ON MACHINERY.

SAI. APL 12 1902

Port of

Belfast

Received at London Office

19

Survey held at

Date, first Survey

15 June 1901

Last Survey

8th April

1902

on the

S.S. Lord Antrim

(Number of Visits 52)

Tons

Gross 4268

Net 2773

When built

1902

Built at

Belfast

By whom built

Worthman Clark & Co.

When made

made at

Belfast

By whom made

made at

By whom made

when made

red Horse Power

Owners

Irish Shipowners Coy

Port belonging to

Belfast

Horse Power as per Section 28

409

Is Refrigerating Machinery fitted

Is Electric Light fitted

VES, &c.—Description of Engines

Triple Expansion, Direct Acting

No. of Cranks

8

Cylinders

26"-43"-42"

Length of Stroke

48"

Revs. per minute

62

Dia. of Screw shaft

as per rule 14.5

Lath. of stern bush

4'-11"

Tunnel shaft

as per rule 13.25

Dia. of Crank shaft journals

as per rule 13.40

Dia. of Crank pin

13.75

Size of Crank webs

24x9

Dia. of thrust shaft under

13.25

Dia. of screw

17'-6"

Pitch of screw

19'-3"

No. of blades

4

State whether moveable

Yes

Total surface

85 sq ft.

Feed pumps

2

Diameter of ditto

4"

Stroke

27"

Can one be overhauled while the other is at work

Yes

Bilge pumps

2

Diameter of ditto

4 1/2"

Stroke

27"

Can one be overhauled while the other is at work

Yes

Donkey Engines

3

SIZES OF PUMPS

11"x11"x12"

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

4"x6"x4"

An Holds, &c.

Nine - 3 1/2", one 2 1/2"

Engine Room

Faint - 3 1/2"

ge injections

are 4"

Connected to condenser, or to circulating pump

Rings

separate donkey suction fitted in Engine room & size

Yes - 3 1/2"

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

Yes

Connections with the sea direct on the skin of the ship

Yes

Are they Valves or Cocks

Both

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

Always

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

Pipes are carried through the bunkers

Four inch suction

How are they protected

Wood

Pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

Bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

Yes

The stern tube, propeller, screw shaft, and all connections examined in dry dock

Before launching

Screw shaft tunnel watertight

Stated

and with a watertight door

Yes

worked from

Top platform E. Room

RS, &c.—

(Letter for record)

Total Heating Surface of Boilers

5269 sq ft.

Is forced draft fitted

Yes - Hand

Description of Boilers

Two - Cyl. Single Ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63 sq ft.

No. and Description of safety valves to

14.2-02

Two - Direct Spring

of each valve

11.04 sq

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Distance between boilers or uptakes and bunkers or woodwork

about 20"

Mean dia. of boilers

15'-6"

Length

11'-6"

Material of shell plates

Steel

Range of tensile strength

28-32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

Lap Riveting

seams

Butt Seams

of rivet holes in long. seams

1 1/2"

Pitch of rivets

9 1/2"

Lap of plates or width of butt straps

19 1/2"

of strength of longitudinal joint

rivets 88.5

Working pressure of shell by rules

183 lbs

Size of manhole in shell

16"x12"

Compensating ring

M. Vails

No. and Description of Furnaces in each boiler

3 - Brighton

Material

Steel

Outside diameter

50 1/2"

plain part

top 4"

Thickness of plates

crown 3 1/2"

Description of longitudinal joint

Weld

No. of strengthening rings

2

pressure of furnace by the rules

193 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

7/8"

Back

5/8"

Top 7/8"

Bottom 1"

ays to ditto: Sides

8 1/2"x7"

Back

8 1/2"x8 1/2"

Top

8 1/2"x7"

If stays are fitted with nuts or riveted heads

Nuts in use

Working pressure by rules

181 lbs

of stays

Steel

Diameter at smallest part

1 1/2"

Area supported by each stay

59 1/2 sq

Working pressure by rules

185 lbs

End plates in steam space:

Steel

Thickness

1 1/2"

Pitch of stays

18"x16"

How are stays secured

Nuts in use

Working pressure by rules

185 lbs

Material of stays

Steel

at smallest part

2 1/2"

Area supported by each stay

288 sq

Working pressure by rules

182 lbs

Material of Front plates at bottom

Steel

Working pressure by rules

253 lbs

Material of Lower back plate

Steel

Thickness

7/8"

Greatest pitch of stays

14 1/2"

Working pressure of plate by rules

253 lbs

Material of tube plates

Steel

Pitch of tubes

3 1/2"x3 1/2"

Material of tube plates

Steel

Thickness: Front

3/8"

Back

1/2"

Mean pitch of stays

7 1/2"x7 1/2"

Cross wide water spaces

1 1/2"

Working pressures by rules

294 lbs

Chamber tops: Material

Steel

Depth and

Distance apart

8'-4"

pressure by rules

191 lbs

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

Yes

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

Lloyd's Register

Foundation

W554-018/pn

DONKEY BOILER— No. *Ans* Description *Cylind Single Ended*
Made at *Belfast* By whom made *Workman Clark & Co* When made *1902* Where fixed *Stoke*
Working pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* No. of Certificate *316* Fire grate area *32 sq ft* Description of safety valves *Two - Lever*
No. of safety valves *Two* Area of each *5.74 sq ft* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *Yes* If steam from main boilers enter the donkey boiler *No* Dia. of donkey boiler *11'-0"* Length *9'-6"* Material of shell plates *Steel* Thickness *3/8"* Range of ten strength *18-32* Descrip. of riveting long. seams *Lap Double* Dia. of rivet holes *5/8"* Whether punched or drilled *Drilled* Pitch of rivets *4"*
Lap of plating *6 1/2"* Per centage of strength of joint *84.4* Rivets *84.4* Thickness of shell *3/8"* Radius of do. *18 1/2"* Stays to do. *14"*
Dia. of stays *1 1/8"* Diameter of furnace Top *26 1/2"* Bottom *24 1/2"* Length of furnace *5'-6"* Thickness of furnace plates *3/8"* Description joint *Weld* Thickness of *3/8"* Stays by *1 1/4"* Working pressure of shell by rules *90 lbs*
Working pressure of furnace by rules *112 lbs* Diameter of *3"* Thickness of *3/8"* Thickness of *1/4"* Thickness of *1/4"*

SPARE GEAR. State the articles supplied:— *Propeller shaft complete; 2 cast iron Propeller Ropes; 12 piston bolts; 3 brass bushes per do; 18 studs per propeller; 1 set valves for feed; 1 Ballast donkey pump; 1 brass female for caudal and all plants Lloyd's Rules additional.*

The foregoing is a correct description,
For **WORKMAN, CLARK & Co. LIMITED.** Manufacturer.

Dates of Survey while building
During progress of work in shops— *1901 - June 15-26, Oct 4, 8, 10, 15, 23, 25, 30, Nov 6, 13, 15, 19, 22, 29*
During erection on board vessel— *5, 13, 14, 20, 23, 1902, Jan 8, 10, 16, 17, 23, 24, 28, 30, Feb 5, 11, 13, 14, 17*
Total No. of visits *5* up to *8th April 1902*
Is the approved plan of main boiler forwarded herewith *Yes*
" " " donkey " " " *Yes*

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

Material of screw shaft *Iron* 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*

The machinery of this vessel has been constructed under Special Survey, and is of good material and workmanship. It has been safely fitted up, and under steam, in Belfast Lough. It worked satisfactorily. In my opinion it is eligible to have record + L.M.C. 4-02.

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 4.02. FD.

J.M. C.M.
15. 4. 02

The amount of Entry Fee. £ *3* : - :
Special £ *40* 9 :
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : :
When applied for, *9-4-02*
When received, *17. 4. 02*

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

Committee's Minute *TUES. 15 APR 1902*
Assigned *+ L.M.C. 4.02*

These parts
Signal Letters
Official No.
113518
No., Date, and
Whether British
Foreign Built.
British
Number of Deck
Number of Mast
Rigged ...
Stern ...
Build ...
Galleries ...
Head ...
Framework and
vessel ...
Number of Bulk
Number of water
and their capac
Total to quarter t
at side amidshi
No. of
Engines
Desen
One
Set.
Inverted, Eng
acting, t
expansio
Horizontal
Number...
Iron or Steel.
Pressure wher
GRO
Under Tonnage De
Closed-in spaces abo
Space or spaces b
Poop ...
Forecastle ...
Round House
Other closed-in sp
Side
Excess
Spaces
Gross Tonn
Deductions, as per C
Registered
Name of Mast
No. of Owners
Name, Residence, and
The I
Thomas
Dated *5th April*

Certificate (if required) to be sent to
(The Surveyors are required not to write on or below the space for Committee's Minute.)