

REPORT ON MACHINERY.

No. 6468

Port of

Belfast

Received at London Office

JUN 26 MAY 1908

No. in Survey held at

Reg. Book.

on the

Date, first Survey 23rd Aug 1907 Last Survey 25th May 1908

(Number of Visits 70)

Gross 8886

Net 6920

When built 1908

Master

Built at

Belfast

By whom built

Markman Clark & Co Ltd

When made

Engines made at

Belfast

By whom made

when made

Boilers made at

By whom made

when made

Registered Horse Power

Owner

Port belonging to

Nom. Horse Power as per Section 28 1221

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c.—Description of Engines

Twin Screw Triple Expansion of Cylinders 6

No. of Cranks 6

Dia. of Cylinders

26"-43"-71"

Length of Stroke

48"

Revs. per minute

80

Dia. of Screw shaft

as per rule 14.4

Material of

screw shaft

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

6'-3"

Dia. of Tunnel shaft

as per rule 13.5

as fitted

Dia. of Crank shaft journals

as per rule 14.7

as fitted

Dia. of Crank pin

14.5

Size of Crank webs

26 1/2 x 9 1/2

Dia. of thrust shaft under

collars

14 1/2

Dia. of screw

16-3

Pitch of Screw

20'-6"

No. of Blades

3

State whether moveable

Yes

Total surface

70 sq ft.

No. of Feed pumps

one

Diameter of ditto

4"

Stroke

27"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

one

Diameter of ditto

6 1/2"

Stroke

27"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

7

SIZES OF PUMPS

2 Main Feed 10 1/2 x 14 x 26

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

1 Water 4 1/2 x 4 x 10

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

1 Ballast double 11 x 10 x 24

1 Water 4 x 4 x 6

1 Ballast double 11 x 10 x 24

1 Water 4 x 4 x 6

1 Ballast double 11 x 10 x 24

1 Water 4 x 4 x 6

1 Ballast double 11 x 10 x 24

1 Water 4 x 4 x 6

In Engine Room

4-3 1/2"

No. of Bilge Injections

2

SIZES

9"

Connected to condenser, or to circulating pump

Pump

Is a separate Donkey Suction fitted in Engine room & size

Yes

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

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

Four welded 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

Dates of examination of completion of fitting of Sea Connections

26-2-08

of Stern Tube

26-2-08

Screw shaft and Propeller

28-2-08

Is the Screw Shaft Tunnel watertight

Stated to be

it fitted with a watertight door

Yes

worked from

Upper deck.

BOILERS, &c.—(Letter for record S.)

Manufacturers of Steel

Sweet

Keen

Metzger

Metzger

Metzger

Metzger

Metzger

Metzger

Metzger

Total Heating Surface of Boilers

7493 sq ft

Forced Draft fitted

Yes

No. and Description of Boilers

3 Double End Cylinders

Working Pressure

200 lbs

Tested by hydraulic pressure to

400 lbs

Date of test

10-3-08

No. of Certificate

412

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

146 1/2 sq ft

No. and Description of Safety Valves to

each boiler

3 Direct Spring

Area of each valve

14.19 sq ft

Pressure to which they are adjusted

205 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

6 ft

Dia. of boilers

16'-3"

Length

20'-6"

Material of shell plates

Steel

Thickness

1 1/2"

Range of tensile strength

28-32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Lap Rivet

long. seams

Butt Rivet

Diameter of rivet holes in long. seams

1 1/8"

Pitch of rivets

9 1/2"

Lap of plates or width of butt straps

20 1/8"

Per centages of strength of longitudinal joint

rivets 85.0

plate 85.0

Working pressure of shell by rules

201 lbs

Size of manhole in shell

16' x 12"

Size of compensating ring

Mr. Neils

No. and Description of Furnaces in each boiler

8 Leighton

Material

Steel

Outside diameter

44 1/4"

Length of plain part

top 5'

Thickness of plates

crown 3 1/2"

bottom 3"

Description of longitudinal joint

Mild

No. of strengthening rings

2 Top

Bottom

Working pressure of furnace by the rules

227 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

5"

Back

5"

Pitch of stays to ditto: Sides

8 1/2 x 7 1/2"

Back

8 1/2 x 8"

Top

8 1/2 x 8 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

204 lbs

Material of stay

Steel

Diameter at smallest part

1 1/2"

Area supported by each stay

66 sq in

Working pressure by rules

240 lbs

End plates in steam space:

Material

Steel

Thickness

1 3/8"

Pitch of stays

20 1/2 x 15 1/2"

How are stays secured

Nuts

Working pressure by rules

Diameter at smallest part

2 1/8"

Area supported by each stay

317 1/2 sq in

Working pressure by rules

236 lbs

Material of Front plates at bottom

Steel

Thickness

1"

Material of Lower back plate

Steel

Thickness

1"

Greatest pitch of stays

1 1/2"

Working pressure of plate by rules

204 lbs

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4 x 3 3/8"

Material of tube plates

Steel

Thickness: Front

6 3/4"

Back

1 1/2"

Mean pitch of stays

18 1/2 x 1 1/4"

Pitch across wide water spaces

13 1/2"

Working pressures by rules

203 lbs

Girders to Chamber tops: Material

Steel

thickness of girder at centre

8 x (2 x 2)

Length as per rule

52 3/8"

Distance apart

8"

Number and pitch of stays in each

6-6 1/2 x 8 1/4"

Working pressure by rules

208 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

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description	Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	Plates
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied: *Propeller shaft, 2 Hades, 2 bases; 2 pair crank pin bushes; 2 pair cross head bushes; 2 thrust collars; 2 t. packing rings for H.P. & I.P. piston rods; 2 H.P. & I.P. piston rings; boiler condensers tubes; safety escape valve springs; 2 H.P. & I.P. piston valve rings; 2 pump valves etc. and all parts to Lloyd's Rules Extra*

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED

Manufacturer.

Dates of Survey while building: *1904. Aug 23. Sept 9, 17, 26. Oct. 4, 8, 14, 18, 25, 31. Nov 4, 8, 15, 18, 20, 22.*
 During progress of work in shops: *Nov 2, 3, 5, 12, 14, 23. 1908. Jan 6, 9, 20, 21, 22, 24, 27, 28. May 25.*
 During erection on board vessel: *70*
 Total No. of visits: *70*

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

Dates of Examination of principal parts—Cylinders: *9* Slides *9-0-07* Covers: *donkey* *10-12-08* Rods: *10-12-08*
 Connecting rods: *9-3-08* Crank shaft: *9* Thrust shaft: *10-12-08* Tunnel shafts: *10* Screw shaft: *2-08* Propeller: *7-2-08*
 Stern tube: *7-2-08* Steam pipes tested: *9-4-08* Engine and boiler seatings: *14-4-08* Engines holding down bolts: *16-4-08*
 Completion of pumping arrangements: *10-5-08* Boilers fixed: *6-5-08* Engines tried under steam: *6-5-08*
 Main boiler safety valves adjusted: *6-5-08* Thickness of adjusting washers: *10-12-08*
 Material of Crank shaft: *J. Steel* Identification Mark on Do. *440YPS* Material of Thrust shaft: *also* Identification Mark on Do. *also*
 Material of Tunnel shafts: *also* Identification Marks on Do. *also* Material of Screw shafts: *also* Identification Marks on Do. *440YPS*
 Material of Steam Pipes: *W. Luan* Test pressure: *640 lbs sq*

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

The machinery of this vessel has been constructed under Special Licence, and in accordance with the Rules. The materials and workmanship are of good description, and on trial under steam in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 5-08. with notation Force & Draft & Electric Light.

It is a duplicate of that fitted in the sister vessel 'Ancona' by the same builders.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 5. 08.

ELEC LIGHT.

F.D.

JSC. 27.5.08.

The amount of Entry Fee. . . £ 3 : - :
 Special . . . £ 81 : 1 :
 Donkey Boiler Fee . . . £ : :
 Travelling Expenses (if any) £ : :
 When applied for: *23-5-1908*
 When received: *29/5/08*

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

Committee's Minute

FRI. 29 MAY 1908

Assigned

MACHINERY CERTIFICATE WRITTEN



Lloyd's Register Foundation

Certificate (if required) to be sent to this office

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