

REPORT ON MACHINERY.

No. 6475

Port of

Date, first Survey 1st Feb 1907 Last Survey 3rd June 1908

Received at London Office LULS 9 JUN 1908

No. in Survey held at
Reg. Book.

on the

Master F. H. Bouwer Built at

By whom built

Tons

When built

Engines made at

By whom made

when made

Boilers made at

By whom made

when made

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28 2451

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c.—Description of Engines

Twin Screw Quadruple Expansion

No. of Cranks 8

Dia. of Cylinders 33"-47"-68"-94"

Length of Stroke 60"

Revs. per minute 83

Dia. of Screw shaft

as per rule 18.5"

Material of

screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the after end of the liner made water tight

in the propeller boss

If the liner is in more than one length are the joints burned

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

Length of stern bush 6'-6"

Dia. of Tunnel shaft

as per rule 14.29"

Dia. of Crank shaft journals

as per rule 18.15"

Dia. of Crank pin 19"

Size of Crank webs 38" x 13 1/2"

of thrust shaft under

collars 18 3/4"

Dia. of screw 19'-2"

Pitch of Screw 22'-9"

No. of Blades 3

State whether moveable

Total surface 94 sq ft.

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

See other sheet

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

In Engine Room 8-3 1/2"

12-2 1/2"

2-4"

In Holds, &c. 14-3 1/2"

10-2 1/2"

2-3"

No. of Bilge Injections 2 sizes 1 1/2"

Connected to condenser, or to circulating pump

Pump

Is a separate Donkey Suction fitted in Engine room & size 2-4 1/2"

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers

None All carried through Pipe Tunnel

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Dates of examination of completion of fitting of Sea Connections 13-1-08

of Stern Tube 7-1-08

Screw shaft and Propeller 27-1-08

Is the Screw Shaft Tunnel watertight

Stated plus it fitted with a watertight door

worked from Top platform Engine Room

BOILERS, &c.—(Letter for record 3)

Manufacturers of Steel

J. G. Chubb & Sons Ltd

Total Heating Surface of Boilers 41980 sq ft

Forced Draft fitted

No

No. and Description of Boilers 8-Double End. Cylind

Working Pressure 215 lbs

Tested by hydraulic pressure to 430 lbs

Date of test 28-11-07

No. of Certificate 407

Can each boiler be worked separately

Yes

Area of fire grate in each boiler 124 sq ft

No. and Description of Safety Valves to

each boiler 4-Double End. Cylind

Area of each valve 10.32 sq in

Pressure to which they are adjusted 215 lbs

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Plaint 30"

Mean dia. of boilers 15'-4"

Length 19'-6"

Material of shell plates

Thickness 1 1/2"

Range of tensile strength 29-32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seam

long. seams

Butt Joint

Diameter of rivet holes in long. seams 1 1/2"

Pitch of rivets 10"

Lap of plates or width of butt straps 23 1/2"

Per centages of strength of longitudinal joint

rivets 96.9%

plates 83.4%

Working pressure of shell by rules 249 lbs

Size of manhole in shell 16" x 12"

Size of compensating ring

M. Neils

No. and Description of Furnaces in each boiler 6-Mauisong

Material

Outside diameter 49 1/2"

Length of plain part

top 7"

bottom 7"

Thickness of plates

crown 2 1/2"

Description of longitudinal joint

Weld

No. of strengthening rings 37 1/2

Working pressure of furnace by the rules 242 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

Back

Top

Bottom 15 1/2" x 1 1/2"

Pitch of stays to ditto: Sides

8 1/2" x 7 1/2"

Back

Top 8 1/2" x 7 1/2"

If stays are fitted with nuts or riveted heads

Nuts inside

Working pressure by rules 216 lbs

Material of stays

Steel

Diameter at smallest part 1 1/2" x 1 1/8"

Area supported by each stay 61 1/8"

Working pressure by rules

256 lbs

and plates in steam space:

Material

Steel

Thickness 1 1/8"

Pitch of stays 18" x 15"

How are stays secured

Nuts inside

Working pressure by rules

218 lbs

Material of stays

Diameter at smallest part 2 1/2"

Area supported by

each stay 270 sq in

Working pressure by rules

239 lbs

Material of Front plates at bottom

Steel

Thickness 1 1/8"

Material of Lower back plate

Steel

Thickness 1 1/8"

Greatest pitch of stays

Working pressure of plate by rules

Working pressure of plate by rules

Working pressure of plate by rules

Working pressure of plate by rules

Working pressure of plate by rules

Working pressure of plate by rules

Diameter of tubes 2 1/2"

Pitch of tubes 4" x 4"

Material of tube plates

Steel

Thickness: Front

Back

Mean pitch of stays 8" x 8"

Pitch across wide water spaces 14"

Working pressures by rules

337 lbs

Girders to Chamber tops: Material

thickness of girder at centre 8 1/2" x 8 1/2" x 2)

Length as per rule 51"

Distance apart 8 1/2"

Number and pitch of stays in each

6" x 4"

Working pressure by rules

287 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

Working pressure of shell by rules

Diameter of flue

Material of flue plates

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

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Working pressure of end plates

W213-0161

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 _____ Plates _____

Working pressure of shell by rules _____ 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 _____

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:— *See other sheet*

The foregoing is a correct description,

Harland & Wolff Ltd

Manufacturer.

Dates of Survey while building { During progress of work in shops— 1907. Feb'y 1. 4. 7. 14. 20 March 1. 5. 6. 12. 22. 26 April 5. 9. 18. 24. 26
During erection on board vessel— May 2. 7. 10. 15. 16. 21. 23. 29, June 1. 7. and up till 3 June 1908
Total No. of visits 98

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

Dates of Examination of principal parts—Cylinders 18 Slides 4-04 Covers _____ Pistons *To* Rods _____

Connecting rod 20-2-08 Crank shaft 1-2-04 Tunnel shafts 3-3-08 Propeller 18-7-08

Stern tube 18-12-04 Steam pipes tested 24/12/04 10/2/08 Engine and boiler seatings 30-3-08 Engines holding down bolts 29-4-08

Completion of pumping arrangements 16-5-08 Boilers fixed 4-4-08 Engines tried under steam 12-5-08

Main boiler safety valves adjusted 12-5-08 Thickness of adjusting washers 8 1/2 32

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S* Material of Thrust shaft *do* Identification Mark on Do. *do*

Material of Tunnel shafts *do* Identification Marks on Do. *do* Material of Screw shafts *do* Identification Marks on Do. *do*

Material of Steam Pipes *W. Iron* Test pressure 645 lbs

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The material and the workmanship are of good description throughout, and on trial under steam in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 6-08. with notation "Electric Light"

It is submitted that this vessel is eligible for THE RECORD L.M.C. 6.08. ELEC LIGHT.

T.H.S. = 46436 £.

HC 9-6-08.

The amount of Entry Fee.. £ 3 : - : When applied for, _____

Special £ 142-11-0 4-6-08

Donkey Boiler Fee £ : : When received, _____

Travelling Expenses (if any) £ : : _____

Committee's Minute

WED. 10 JUN 1908

Assigned

June 6 08

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

Lloyd's Register Foundation

MACHINERY CERTIFICATE WRITTEN.