

## REPORT ON MACHINERY.

No. 27946

Received at London Office

Date of writing Report 21<sup>st</sup> April 1914. When handed in at Local Office

19-9-14 Port of Hull

FRI. OCT. - 2. 1914

No. in Survey held at Hull.

Date, First Survey 20-6-14

Last Survey 17. 9. 1914.

Reg. Book.

14. on the steel s.s. "MENA."

CPH 1061.

(Number of Visits 24

Gross 234

Net 110

Master

Built at Selby.

By whom built

Cochrane &amp; Sons Ltd

When made 1914.

Engines made at Hull.

By whom made

C. H. Holmes &amp; Co Ltd

when made 1914.

Boilers made at Hull.

By whom made

C. H. Holmes &amp; Co Ltd

when made 1914.

Registered Horse Power

Owners

Roberts &amp; Ruthven Ltd

Port belonging to Grimsby.

Nom. Horse Power as per Section 28

72.

Is Refrigerating Machinery fitted for cargo purposes

no.

Is Electric Light fitted

no.

## ENGINES, &amp;c.—Description of Engines

Triple Expansion.

No. of Cylinders 3.

No. of Cranks 3.

Dia. of Cylinders

12 $\frac{1}{2}$ " 22" 35"

Length of Stroke

24"

Revs. per minute

Dia. of Screw shaft

7 $\frac{1}{2}$ "

Material of screw shaft

S.

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.

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush

3'-0"

Dia. of Tunnel shaft

as per rule

6.43"

Dia. of Crank shaft journals

as per rule

6.75"

Dia. of Crank pin

7"

Size of Crank web

13 $\frac{3}{8}$ " x 4 $\frac{7}{8}$ "

Dia. of thrust shaft under

collars

7"

Dia. of screw

8'-7 $\frac{1}{2}$ "

Pitch of Screw

10'-6"

No. of Blades 4.

State whether moveable

no.

Total surface

28 $\frac{1}{2}$ "

No. of Feed pumps 1.

Diameter of ditto

2 $\frac{1}{8}$ "

Stroke

24"

Can one be overhauled while the other is at work

yes.

No. of Bilge pumps 1.

Diameter of ditto

2 $\frac{1}{8}$ "

Stroke

24"

Can one be overhauled while the other is at work

yes.

No. of Donkey Engines

One.

SIZES of Pumps

5' x 2 $\frac{1}{4}$ " x 5"

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

In Engine Room

2'-2"

One forward

One aft.

In Holds, &amp;c.

3'-2"

Slushwell

Main hold

forehold.

2 $\frac{1}{2}$  ejector

from all bilges.

No. of Bilge Injections 1

sizes

3"

Connected to condenser, or to circulating pump

pump.

Is a separate Donkey Suction fitted in Engine room &amp; size

2 $\frac{1}{2}$  ejector

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

above

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

Hold Suctions

How are they protected

Wood casing.

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

25. 6. 14.

of Stern Tube

25. 6. 14.

Screw shaft and Propeller

25. 6. 14.

Is the Screw Shaft Tunnel watertight

yes.

Is it fitted with a watertight door

worked from

Stewart &amp; Lloyd.

BOILERS, &amp;c.—(Letter for record

S.)

Manufacturers of Steel

Stewart &amp; Lloyd.

Total Heating Surface of Boilers

1180.

Is Forced Draft fitted

no.

No. and Description of Boilers

One Single-ended.

Working Pressure

180 lbs.

Tested by hydraulic pressure to

360 lbs.

Date of test

25. 8. 14.

No. of Certificate

3015.

Can each boiler be worked separately

yes.

Area of fire grate in each boiler

31 $\frac{1}{2}$ "

No. and Description of Safety Valves to

each boiler

2 Spring.

Area of each valve

3.9"

Pressure to which they are adjusted

183 lbs.

Are they fitted with easing gear

yes.

Smallest distance between boilers or uptakes and bunkers or woodwork

7"

Mean dia. of boilers

12'-9"

Length

10'-3"

Material of shell plates

S.

Thickness

1 $\frac{1}{16}$ "

Range of tensile strength

28 tons

Are the shell plates welded or flanged

yes.

Descrip. of riveting: cir. seams

D.P.L.

long. seams

J.R.D.B.

Diameter of rivet holes in long. seams

1 $\frac{1}{16}$ "

Pitch of rivets

7 $\frac{1}{8}$ "

Lap of plates or width of butt straps

15"

Per centages of strength of longitudinal joint

rivets

87 $\frac{1}{2}$ %

plate

85%

Working pressure of shell by rules

185

Size of manhole in shell

16 x 12"

Size of compensating ring

7" x 1 $\frac{1}{16}$ "

No. and Description of Furnaces in each boiler

2 plain

Material

S.

Outside diameter

43"

Length of plain part

top

6'-6"

Thickness of plates

crown

4 $\frac{1}{2}$ "

Description of longitudinal joint

welded.

No. of strengthening rings

1

Working pressure of furnace by the rules

181.

Combustion chamber plates: Material

S.

Thickness: Sides

1 $\frac{1}{16}$ "

Back

1 $\frac{1}{16}$ "

Top

1 $\frac{1}{16}$ "

Bottom

1 $\frac{1}{16}$ "

Pitch of stays to ditto: Sides

9 x 10

Back

10 x 8 $\frac{1}{4}$ 

Top

10 x 8 $\frac{1}{2}$ 

If stays are fitted with nuts or riveted heads

nuts.

Working pressure by rules

181.

Material of stays

S.

Diameter at smallest part

2-07"

Area supported by each stay

90"

Working pressure by rules

207.

End plates in steam space:

Material

S.

Thickness

1 $\frac{1}{16}$ "

Pitch of stays

17 x 17"

How are stays secured

DNs &amp; Ns

Working pressure by rules

185.

Material of stays

S.

Diameter at smallest part

5-78"

Area supported by each stay

289."

Working pressure by rules

207.

Material of Front plates at bottom

S.

Thickness

7 $\frac{1}{8}$ "

Material of Lower back plate

S.

Thickness

29"

Greatest pitch of stays

15 x 8 $\frac{1}{4}$ 

Working pressure of plate by rules

189.

Diameter of tubes

3 $\frac{1}{2}$ "

Pitch of tubes

5' x 5"

Material of tube plates

S.

Thickness: Front

7 $\frac{1}{8}$ "

Back

7 $\frac{1}{8}$ "

Mean pitch of stays

10' x 10"

Pitch across wide water spaces

15"

Working pressures by rules

349.

Girders to Chamber tops: Material

S.

Depth and

thickness of girder at centre

8 $\frac{1}{2}$  x 1 $\frac{1}{4}$ 

Length as per rule

2'-9 $\frac{3}{8}$ "

Distance apart

8 $\frac{1}{2}$ "

Number and pitch of stays in each

2-10"

Working pressure by rules

203

Superheater or Steam chest; how connected to boiler

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

Thickness

If stiffened with rings



IS A DONKEY BOILER FITTED?

710.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Two each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set of coupling bolts and nuts, one set each feed and bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts, etc.

The foregoing is a correct description,

p. pro CHARLES D. HOLMES & Co. LTD.

Charles Holmes

DIRECTOR

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1914: - Jun 20. 24. 25. 30 Jul 8. 14. 15. 23. 25. 28. 31. Aug 13. 14. 18. 20. 21. 25 Sep 1. 4  
During erection on board vessel - - - Sep 7. 10. 11. 14. 17  
Total No. of visits 24

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 13.8.14. Slides 13.8.14. Covers 18.8.14. Pistons 13.8.14. Rods 18.8.14.

Connecting rods 18.8.14. Crank shaft 13.8.14. Thrust shaft 21.8.14. Tunnel shafts ✓ Screw shaft 24.6.14. Propeller 24.6.14.

Stern tube 24.6.14. Steam pipes tested 10.9.14. Engine and boiler seatings 25.6.14. Engines holding down bolts 7.9.14.

Completion of pumping arrangements 17.9.14. Boilers fixed 7.9.14. Engines tried under steam 11.9.14.

Main boiler safety valves adjusted 11.9.14. Thickness of adjusting washers Both washers 1/2"

Material of Crank shaft S. Identification Mark on Do. 1240. Material of Thrust shaft S. Identification Mark on Do. 1263.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts S. Identification Marks on Do. 1240.

Material of Steam Pipes Copper Solid drawn. Test pressure 360 lbs. hyd. pressure.

Is an installation fitted for burning oil fuel ✓

Is the flash point of the oil to be used over 150°F. ✓

Have the requirements of Section 49 of the Rules been complied with ✓

Is this machinery duplicate of a previous case 710. If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The engines & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials and workmanship are sound and good. The Boiler tested by hydraulic pressure and with the engines secured on board and tested under steam. They are now in good order and safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of +LMC 9.14 in the Register book.

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 9.14.

JWR

JWR  
3/10/14

The amount of Entry Fee ... £ 1 : :  
Special ... £ 10 : 16 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : 4 :  
When applied for, 26-9-1914  
When received, 1/10/1914

J. G. Mackillop F. L. Stanger.  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. OCT. - 6. 1914

Assigned + LMC 9.14.

MACHINERY CERTIFICATE  
WRITTEN



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Foundation