

Rpt. 4.

REPORT ON MACHINERY

No. 30344

Date of writing Report 19-1-18

When handed in at Local Office

25/1/18 Port of

Received at London Office

SAT. 26 JAN 1918

No. in Survey held at
Reg. Book.

Hull

Date, First Survey

22-8-17

Last Survey

23-1-18

19

on the steel screw tugboat "Henry Ford"

(Number of Visits 35)

Master

Built at

Lilby

By whom built

Cochrane & Sons Ltd

Engines made at

Hull

By whom made

Chas. D. Holmes & Co. Ltd (A2)

when made 1918-1

Boilers made at

Hull

By whom made

Chas. D. Holmes & Co. Ltd (A21)

when made 1918-1

Registered Horse Power

Owners British Admiralty

Port belonging to

Nom. Horse Power as per Section 28

87

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders

Three

No. of Cranks

3

No. of Cylinders 13-23-37

Length of Stroke

26"

Revs. per minute

116

Dia. of Screw shaft

as per rule 7.9"

Material of

Iron

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

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

-

If two

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

as per rule 2.04"

Dia. of Crank shaft journals

as per rule 7.39"

as fitted 7.2"

Dia. of Crank pin

7.2"

Size of Crank webs

4 7/8" x 11"

Dia. of thrust shaft under

No. of Tunnel shaft

as fitted 7.2"

Dia. of screw

9-7 1/2"

Pitch of Screw

11-0"

No. of Blades

4

State whether moveable

no

Total surface

33 sq ft

No. of Feed pumps

one

Diameter of ditto

2 5/8"

Stroke

14 3/4"

Can one be overhauled while the other is at work

-

No. of Bilge pumps

one

Diameter of ditto

2 5/8"

Stroke

14 3/4"

Can one be overhauled while the other is at work

-

No. of Donkey Engines

one

3 1/2" dia.

SIZES OF PUMPS

6" 4 1/2" x 6"

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

-

Engine Room

Two

2' dia.

In Holds, &c.

one

2' dia.

in each compartment

-

No. of Bilge Injections

one

size 3 1/2"

Connected to condenser,

to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room & size

3" dia.

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

Are all pipes carried through the bunkers

Toward sections

How are they protected

strong 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

Is the Screw Shaft Tunnel watertight

-

Is it fitted with a watertight door

worked from

MACHINERY, &c.—(Letter for record

S)

Manufacturers of Steel

J. Spencer & Sons & Stewart & Lloyd

Total Heating Surface of Boilers

1440 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

one single ended

Working Pressure

200

Tested by hydraulic pressure to

400

Date of test

20-12-17

No. of Certificate

3260

Can each boiler be worked separately

-

Area of fire grate in each boiler

48 sq ft

No. and Description of Safety Valves to

boiler

Two spring loaded

Area of each valve

4.9 sq in

Pressure to which they are adjusted

205

Are they fitted with easing gear

yes

Least distance between boilers

on uptakes and bunkers

on woodwork

8" Bl. lagged

Mean dia. of boilers

16.5"

Length

10'-8"

Material of shell plates

steel

Range of tensile strength

28-32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

double

Diameter of rivet holes in long. seams

1 1/4"

Pitch of rivets

8 5/8"

Gap of plates or width of butt straps

18"

Centages of strength of longitudinal joint

rivets 85.9

plate 85.5

Working pressure of shell by rules

202

Size of manhole in shell

16" x 12"

No. and Description of Furnaces in each boiler

Three plain

Material

steel

Outside diameter

40"

Thickness of plain part

top 7 1/2"

bottom 6 1/2"

Thickness of plates

crown 7 1/8"

Description of longitudinal joint

welded

No. of strengthening rings

-

Working pressure of furnace by the rules

206

Combustion chamber plates: Material

steel

Thickness: Sides

3/4"

Back

2 3/32"

Top

3/4"

Bottom

3/4"

No. of stays to ditto: Sides

10" x 8"

Back

9 3/4" x 8 3/4"

Top

11" x 8"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

208

Material of stays

steel

Area at smallest part

2.07 sq in

Area supported by each stay

88

Working pressure by rules

211

End plates in steam space:

-

Material

steel

Thickness

1 1/32"

Pitch of stays

19 x 17 1/2"

How are stays secured

8. 7 x 16

Working pressure by rules

210

Material of stays

steel

Area at smallest part

7.5 sq in

Area supported by each stay

335

Working pressure by rules

233

Material of Front plates at bottom

steel

Material

steel

Thickness

1 1/16"

Greatest pitch of stays

13 3/4" x 9 1/16"

Working pressure of plate by rules

216

Pitch of tubes

3 1/2"

Material of tube plates

steel

Thickness: Front

1 5/16" + 5/16" = 1 3/4"

Back

7/8"

Mean pitch of stays

10"

Pitch across wide water spaces

14"

Working pressures by rules

275

Girders to Chamber tops: Material

steel

Depth and

-

Thickness of girder at centre

11" x 1 3/4"

Length as per rule

36 2 1/8"

Distance apart

11"

Number and pitch of stays in each

Three

8"

Working pressure by rules

201

Steam dome: description of joint to shell

-

%

of strength of joint

-

Thickness of shell plates

-

Material

-

Description of longitudinal joint

-

Diam. of rivet holes

-

Working pressure of shell by rules

-

Crown plates

-

Thickness

-

How stayed

-

SUPERHEATER. Type

-

Date of Approval of Plan

-

Tested by Hydraulic Pressure to

-

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

-

Pressure to which each is adjusted

-

Is Easing Gear fitted

-

Diameter of Safety Valve

-

-

-

-

-

-

-

-

-

-

-

-

-

-

IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? ☒

SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of air, feed & bilge pump valves, six gunn ring studs & nuts, one main & one donkey check valve, two valves for donkey pump, one safety valve spring, 3 condenser tubes, one set of fire bars & a quantity of bolts & nuts run of various sizes.*

The foregoing is a correct description,

for **CHARLES D. HOLMES & CO. LTD.**

Charles D. Holmes

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1917: Aug. 22. Sep. 26. 28. Oct. 8. 9. 11. 24. 25. 29. 30. Nov. 2. 5. 7. 9. 12. 13. 15. 19
{ During erection on board vessel -- } 23. 27. 30. Dec. 4. 8. 12. 17. 20. 27. 1918: Jan. 2. 7. 9. 10. 14. 15. 21. 23.
Total No. of visits 35.

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

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 2-11-17 Slides 13-11-17 Covers 23-11-17 Pistons 23-11-17 Rods 13-11-17

Connecting rods 19-11-17 Crank shaft 19-11-17 Thrust shaft 23-11-17 Tunnel shafts ✓ Screw shaft 9-10-17 Propeller 9-10-17

Stern tube 8-10-17 Steam pipes tested 11-10-17 Engine and boiler seatings 11-10-17 Engines holding down bolts 7-1-18

Completion of pumping arrangements 15-1-18 Boilers fixed 14-1-18 Engines tried under steam 15-1-18

Completion of fitting sea connections 11-10-17 Stern tube 11-10-17 Screw shaft and propeller 11-10-17

Main boiler safety valves adjusted 14-1-18 Thickness of adjusting washers $7\frac{1}{4}$ & $9\frac{1}{16}$

Material of Crank shaft *Iron* Identification Mark on Do. 2056 F.L.S. Material of Thrust shaft *lt* Identification Mark on Do. 2058 F.L.S.

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. 2030 F.L.S.

Material of Steam Pipes *solid drawn copper* ✓ Test pressure 400 ✓

Is an installation fitted for burning oil fuel *no* ✓ 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 *yes* ✓ If so, state name of vessel *Thursey Class*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery for this vessel has been constructed under special survey in accordance with the approved plans & the rules of this Society, the materials & workmanship are good, the boiler steam pipes have been tested by hydraulic pressure as above & found sound & tight. The machinery has been properly fitted & secured on board & on completion tested under full power for two hours, as required by the Admiralty, & found satisfactory. The safety valves have been adjusted under steam & tested for accumulation which did not exceed 218 lbs.*

In my opinion the vessel is eligible for the record & L.M.C. 1-18.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 1.18.

K.W.D.
J.M. 29/1/18.

Frank L. Sturgeon

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ : : When applied for,
Special ... £ 27 : 0 : 25/1/18
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : 6/2 : 31-1-18

Committee's Minute

Assigned

TUE JAN 29 1918.

7 L.M.C. 1.18.

MACHINERY CERTIFICATE
ENTERED



Lloyd's Register
Foundation