

## REPORT ON MACHINERY.

No. 25517

Received at London Office

Date of writing Report

19

When handed in at Local Office

10. 10. 12 Port of

Hull

SAT. OCT. 12 1912

No. in Survey held at  
Reg. Book.

Hull

Date First Survey

Jun. 11<sup>th</sup>

Last Survey

Oct 7<sup>th</sup> 1912

Pl- 17 on the

steel screw trawler Isa

(Number of Visits)

Master

Built at

Lelby

By whom built

Cochran &amp; Sons

Engines made at

Hull

By whom made

Earle's Co. Ltd

when made

1912-10

Boilers made at

Hull

By whom made

Earle's Co. Ltd

when made

1912-10

Registered Horse Power

Owners

Loc. Anon. Pecheris a Vapem Port belonging to Ostend

Nom. Horse Power as per Section 28

70

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

ENGINES, &amp;c.—Description of Engines

Triple Expansion Surface Brake

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

12-20-32

Length of Stroke

23

Revs. per minute

Dia. of Screw shaft

as per rule 6.96

Material of

steel

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

Length of stern bush

36

Dia. of Tunnel shaft

as per rule 6.1

Dia. of Crank shaft journals

as per rule 6.4

Dia. of Crank pin

6.2

Size of Crank webs

12 1/2 x 4 1/2

Dia. of thrust shaft under

collars

6 1/2

Dia. of screw

8-8

Pitch of Screw

11-0

No. of Blades

4

State whether moveable

no

Total surface

27 ft

No. of Feed pumps

one

Diameter of ditto

2 3/4

Stroke

10

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

one

Diameter of ditto

2 3/4

Stroke

10

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

two

2 1/2 x 2 1/2

H.P.

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

2 1/2 x 2 1/2

Bilge &amp; Hallam

In Engine Room

one

2

In Holds, &amp;c. one 2" in each shaft well also

No. of Bilge Injections

one

size 3 1/2

Connected to condenser, or to circulating pump

pump

Is a separate Donkey Suction fitted in Engine room &amp; size 2 1/2" yield

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

forward 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

27-9-12

of Stern Tube

27-9-12

Screw shaft and Propeller

25-9-12

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from

yes

BOILERS, &amp;c.—(Letter for record

S)

Manufacturers of Steel

Beardmore &amp; Co

Total Heating Surface of Boilers

1300

Is Forced Draft fitted

no

No. and Description of Boilers

one single ended

Working Pressure

200 lbs

Tested by hydraulic pressure to

400 lbs

Date of test

17-8-12

No. of Certificate

1919

Can each boiler be worked separately

yes

Area of fire grate in each boiler

32 ft

No. and Description of Safety Valves to

each boiler

two spring loaded

Area of each valve

3.98

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

6" boiler lap

dia. of boilers

150"

Length

10-3

Material of shell plates

steel

Thickness

1/8"

Range of tensile strength

28-32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

double

long. seams

J.R.B.

Diameter of rivet holes in long. seams

1 1/4"

Pitch of rivets

8 9/16"

Lap of plates or width of butt straps

18 1/4"

en as Per centages of strength of longitudinal joint

rivets 92.2

Working pressure of shell by rules

206 lbs

Size of manhole in shell

12" x 16"

Size of compensating ring

9" x 1 1/8"

No. and Description of Furnaces in each boiler

Two daylight

Material

steel

Outside diameter

44 1/2"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

Description of longitudinal joint

welded

No. of strengthening rings

yes

Working pressure of furnace by the rules

212

Combustion chamber plates: Material

steel

Thickness: Sides

3/4"

Back

2 1/2"

Top

2 1/2"

Bottom

Pitch of stays to ditto: Sides

9 1/2" x 1 1/2"

Back

8 3/4" x 1 1/2"

Top

8 1/2" x 1 1/2"

If stays are fitted with nuts or riveted heads

nuts

Material of stays

steel

Diameter at smallest part

1.76"

Area supported by each stay

70"

Working pressure by rules

201

End plates in steam space:

Material

steel

Thickness

1 1/8"

Pitch of stays

16 1/2" x 17"

How are stays secured

J. J.

Working pressure by rules

202

Material of stays

steel

Diameter at smallest part

6 23/32"

Area supported by each stay

280"

Working pressure by rules

231

Material of Front plates at bottom

steel

Thickness

1"

Material of Lower back plate

steel

Thickness

1 1/16"

Greatest pitch of stays

14 1/2" x 1 1/4"

Working pressure of plate by rules

212

Diameter of tubes

3 1/2"

Pitch of tubes

4 1/16" x 4 1/16"

Material of tube plates

steel

Thickness: Front

1"

Back

3/8"

Mean pitch of stays

9 3/8"

Pitch across wide water spaces

14 1/2"

Thickness of girder at centre

9 1/2" x 1 3/4"

Length as per rule

35 1/2"

Distance apart

8 1/2"

Number and pitch of stays in each

three

8 1/4"

Working pressure by rules

205

Superheater or Steam chest; how connected to boiler

yes

Can the superheater be shut off and the boiler worked

separately

yes

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

yes

stiffened with rings

yes

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

yes



# 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                  |
| Valves                               | No. of Safety Valves                                   | Area of each              | Pressure to which they are adjusted | Date of adjustment               |
| If fitted with casing 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 |
| 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                      | Radius of do.             | Stayed by                           |                                  |
| Diameter of uptake                   | Thickness of uptake plates                             | Thickness of water tubes  | Dates of survey                     |                                  |

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 pump valves, & a quantity of iron bolts & nuts of various sizes.

FOR EARLE'S  
SHIPBUILDING & ENGINEERING CO. LIMITED.  
The foregoing is a correct description,  
J. J. Talbot  
SECRETARY, Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1912: Jun 11. 13. 20. July 16. 18. 22, 24. 26. 27. 29. 31. Aug 1. 2. 3. 9. 12. 14. 17. 21. 28. 30.  
{ During erection on board vessel -- } Sep. 9. 10. 16. 23. 24. 25. 27. 28. 30. Oct 1. 2. 3. 5. 7  
Total No. of visits 35

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

Dates of Examination of principal parts—Cylinders 21-8-12 Slides 21-8-12 Covers 21-8-12 Pistons 21-8-12 Rods 17-8-12  
Connecting rods 17-8-12 Crank shaft 28-8-12 Thrust shaft 3-9-12 Tunnel shafts ✓ Screw shaft 25-9-12 Propeller 25-9-12  
Stern tube 27-9-12 Steam pipes tested 1-10-12 Engine and boiler seatings 23-9-12 Engines holding down bolts 2-10-12  
Completion of pumping arrangements 3-10-12 Boilers fixed 30-9-12 Engines tried under steam 5-10-12  
Main boiler safety valves adjusted 5-10-12 Thickness of adjusting washers *Port 1/16 In 1/32*

Material of Crank shaft *steel* Identification Mark on Do. 3102GAH Material of Thrust shaft *steel* Identification Mark on Do. 96176D  
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *steel* Identification Marks on Do. 906JWG  
Material of Steam Pipes *Copper solid drawn* ✓ Test pressure *400 lbs.* ✓

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of 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 has been tested by Hydraulic pressure to 400 lbs & found sound & tight. The Machinery has been properly fitted on board & on completion was tested under steam & found satisfactory, the safety valves have been adjusted & tested for accumulation (PPM).

These engines were designed, as in the case of the sister vessel Emmanuel, for a working pressure of 180 lbs. the owners desired the boiler to be constructed for a pressure of 200 lbs to be worked at 180 lbs.

In my opinion this vessel is eligible for a record of 180 lbs. working pressure to be noted 180 lbs.

It is submitted that this vessel is eligible for THE RECORD. + LMC 10.12.

The amount of Entry Fee £ 1 : 0 :  
Special £ 10 : 10 :  
Donkey Boiler Fee £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 11. 10. 12  
When received, 24. 10. 12

Committee's Minute TUE. OCT. 15. 1912  
Assigned *Home 10. 12*

180 lbs.  
*Frank A. Sturgeon*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.