

Date of writing Report - 2 JAN 1915

When handed in at Local Office Jan 2nd.

10/15 Port of

SUNDERLAND.

No. in Survey held at SUNDERLAND.

Date, First Survey

21 July

Last Survey

23 Decr 1914

Reg. Book.

on the New Steel S. S. Belge

(Number of Visits)

Master A. Newton

Built at

Sunderland

By whom built

Osbourne Graham &amp; Co

Gross 1168

Net 689

When built 1914

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd

when made

1914

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd

when made

1914

Registered Horse Power

Owners

C. Dore &amp; Co

Port belonging to

London

Nom. Horse Power as per Section 28

1148

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

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

Triple expansion

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

14" x 28" x 16"

Length of Stroke

33"

Revs. per minute

Dia. of Screw shaft

as per rule 9.48

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

3'-6"

Dia. of Tunnel shaft

as per rule 8.66

Dia. of Crank shaft journals

as per rule 9.09

Dia. of Crank pin

9.8

Size of Crank webs

13" x 52"

Dia. of thrust shaft under

collars

9.8

Dia. of screw

12'-0"

Pitch of Screw

13'-0"

No. of Blades

4

State whether moveable

no

Total surface

50 sq ft

No. of Feed pumps

Two

Diameter of ditto

23"

Stroke

15"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

Two

Diameter of ditto

3"

Stroke

15"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

Two

Sizes of Pumps

Ballast 4" x 9" x 9"

Sed. 6" x 6"

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

In Engine Room

2 @ 2 1/2" dia &amp; 1 @ 3" dia in well

In Holds, &amp;c.

Two @ 2 1/2" dia in fwd hold.

No. of Bilge Injections

One

size

3 1/2"

Connected to condenser, or to circulating pump

C. P.

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

2 1/2"

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

yes

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

None

How are they protected

yes

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

28-10-14

of Stern Tube

10-11-14

Screw shaft and Propeller

10-11-14

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from

top platform

## BOILERS, &amp;c.—(Letter for record

S. Manufacturers of Steel

J. Spencer &amp; Sons Ltd.

Newburn.

Total Heating Surface of Boilers

2500 sq ft

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

25-9-14

No. of Certificate

3249

Can each boiler be worked separately

yes

Area of fire grate in each boiler

62 sq ft

No. and Description of Safety Valves to

each boiler

Two spring loaded

Area of each valve

4.06 sq ft

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

18"

dia. of boilers

16'-0"

Length

11'-0"

Material of shell plates

Steel

Thickness

1 1/2"

Range of tensile strength

28,843 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

D.R.

long. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

9 1/2"

Gap of plates

width of butt straps

19 3/4"

Per centages of strength of longitudinal joint

rivets

84

plate

86.1

Working pressure of shell by rules

180.2 lbs

Size of manhole in end

16" x 12"

Size of compensating ring

dished

No. and Description of Furnaces in each boiler

3 Deighton

Material

Steel

Outside diameter

50 1/2"

Length of plain part

top

bottom

Thickness of plates

crown

3 1/2"

bottom

Description of longitudinal joint

weld.

No. of strengthening rings

yes

Working pressure of furnace by the rules

181 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

25"

Back

13"

Top

25"

Bottom

25"

Pitch of stays to ditto:

Sides

12 1/4" x 8 1/2"

Back

12" x 10"

Top

12 1/4" x 8 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

185 lbs

Material of stays

Steel

Diameter at smallest part

2.1"

Area supported by each stay

105 sq ft

Working pressure by rules

180.4 lbs

End plates in steam space:

Material of stays

Steel

Material of stays

Steel

Thickness

1 1/2"

Pitch of stays

23" x 20 1/2"

How are stays secured

D.N. Wash

Working pressure by rules

180.5 lbs

Material of Front plates at bottom

Steel

Diameter of stays

2.1"

Area supported by each stay

105 sq ft

Working pressure by rules

182.8 lbs

Material of Lower back plate

Steel

Thickness

25"

Greatest pitch of stays

14 1/2" x 10 1/2"

Working pressure of plate by rules

181 lbs

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2"

Material of tube plates

Steel

Thickness: Front

3 1/4"

Back

3 1/4"

Mean pitch of stays

10.5"

Pitch across wide water spaces

14 1/2"

Working pressure by rules

183 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

2 @ 1' x 8 1/2"

Length as per rule

2'-7 1/2"

Distance apart

12 1/4"

Number and pitch of stays in each

2 @ 8 1/2"

Working pressure by rules

182.5 lbs

Superheater or Steam chest; how connected to boiler

none

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

holes

Pitch of rivets



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 \_\_\_\_\_ 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 each bolts + nuts for top and bottom ends and main bearings One set coupling bolts. One set feed pump valves. One set bilge pump valves. Quantity of assorted bolts nuts + iron.

The foregoing is a correct description, NORTH EASTERN MARINE ENGINEERING CO LTD

Manufacturer.

S. T. Harrison Secy

Dates of Survey \_\_\_\_\_

During progress of work in shops -- 1914 Jul 21 28. Aug. 10. 12. 18. 20. 21. 25. 28. 31. Sep. 9. 16. 18. 24. 25. Oct. 2. 6. 12. 20. 26.

During erection on board vessel -- 27. 28. 30. Nov. 4. 5. 6. 10. 12. 17. 20. Dec 9. 23

Total No. of visits 32

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " yes

Dates of Examination of principal parts—Cylinders 3-10-14 Slides 20-10-14 Covers 2-10-14 Pistons 20-10-14 Rods 13-10-14

Connecting rods 13-10-14 Crank shaft 13-10-14 Thrust shaft 20-10-14 Tunnel shafts 2-10-14 Screw shaft 14-11-14 Propeller 26-10-14

Stern tube 26-10-14. Steam pipes tested 12-11-14 Engine and boiler seatings 24-10-14. Engines holding down bolts 14-11-14

Completion of pumping arrangements 4-12-14. Boilers fixed 14-11-14 Engines tried under steam 20-11-14

Main boiler safety valves adjusted 20-11-14 Thickness of adjusting washers Both 3/16" thick

Material of Crank shaft Steel Identification Mark on Do. 8. 9. 10. 11. 12. E.F. Material of Thrust shaft Steel Identification Mark on Do. 6. E.F.

Material of Tunnel shafts Steel Identification Marks on Do. 13. 14. 15. E.F. Material of Screw shafts Steel Identification Marks on Do. 13. E.F.

Material of Steam Pipes Wrought iron lap welded 5" x 4" with Test pressure 540 lbs

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

The machinery of this vessel has been built under special survey, the materials & workmanship are of good quality & the hydraulic tests of the pipes proved satisfactory. The whole of the machinery has been securely fixed in place & tried under steam & is in good & safe working condition & eligible in my opinion to be classed & have record

✠ L.M.C. 12-14 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 12.14

The amount of Entry Fee .. £ 0 : 0 0 : When applied for, Special .. £ 22 : 4 0 : - 4 JAN 1915

Donkey Boiler Fee .. £ : : : When received, 28/1/15

Travelling Expenses (if any) £ : : :

Committee's Minute

Assigned

FRI. JAN. 8 - 1915

+ L.M.C. 12.14.

MACHINERY CERTIFICATE WRITTEN.

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



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