

REPORT ON MACHINERY.

No. 25282

Received at London Office

FRI. MAY. 24. 1912

of writing Report

19

When handed in at Local Office

14 5 10/2 Port of

Sunderland.

in Survey held at

Sunderland.

Date, First Survey

30<sup>th</sup> Jan. 1912

Last Survey

8<sup>th</sup> May 1912

Book.

(Number of Visits

28)

Gross 3221

on the S.S. "Wearwood"

Tons Net 2013

ster J. A. Roberts

Built at

Sunderland.

By whom built

J. Blumer & Co. (211 5/2)

When built

1912

ines made at

Sunderland.

By whom made

North Eastern Marine Eng. Co. Ltd. (2056)

when made

1912

lers made at

Sunderland.

By whom made

North Eastern Marine Eng. Co. Ltd.

when made

1912

istered Horse Power

Owners

Constantine & Pictorial Ltd.

Port belonging to

Middlesbrough

n. Horse Power as per Section 28

241 1/2

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

GINES, &c.—Description of Engines

Triple expansion.

No. of Cylinders

Three

No. of Cranks

Three

. of Cylinders

23 1/2 x 30 x 64

Length of Stroke

42

Revs. per minute

64

Dia. of Screw shaft

as per rule 12 3/4

Material of

Steel

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

been the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

yes

If two

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

Length of stern bush

4'-9"

. of Tunnel shaft

as per rule 11'-6"

Dia. of Crank shaft journals

as per rule 12'-2 1/4"

Dia. of Crank pin

12 3/8

Size of Crank webs

19 x 1 1/4

Dia. of thrust shaft under

ars 12 3/4

Dia. of screw

16'-9"

Pitch of Screw

16'-9"

No. of Blades

4

State whether moveable

no

Total surface

90 sq

. of Feed pumps

2

Diameter of ditto

3'-4"

Stroke

24"

Can one be overhauled while the other is at work

yes

. of Bilge pumps

2

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

yes

. of Donkey Engines

Two

Sizes of Pumps

4" x 9" x 9" Ballast; 6" x 4" x 6" Sea

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

Engine Room

Three @ 3'-2" dia.

In Holds, &c.

2 @ 3'-2" dia in both fore holds, aft hold

. of Bilge Injections

the sizes

5"

Connected to condenser, or to circulating pump

C.P.

Is a separate Donkey Suction fitted in Engine room & size

yes 3'-2"

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

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

yes

Are they Valves or Cocks

Both

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

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

hat pipes are carried through the bunkers

none

How are they protected

yes

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

yes

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

yes

tes of examination of completion of fitting of Sea Connections

24-3-12

of Stern Tube

30-4-12

Screw shaft and Propeller

30-4-12

the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from top platform

ILERS, &c.—(Letter for record

(61)

Manufacturers of Steel

J. Spencer & Sons. Ltd.

tal Heating Surface of Boilers

4120

Is Forced Draft fitted

no

No. and Description of Boilers

Two single ended

orking Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

15-4-12

No. of Certificate

3004

n each boiler be worked separately

yes

Area of fire grate in each boiler

51 1/2 sq

No. and Description of Safety Valves to

ch boiler

Two spring loaded

Area of each valve

5.94 sq

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

yes

allest distance between boilers or uptakes and bunkers or woodwork

24"

Mean dia. of boilers

15'-3"

Length

10'-3"

Material of shell plates

Steel

ickness

1 1/2"

Range of tensile strength

28 3/4 x 32 lbs

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

D.R.

g. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

9 1/2"

Lap of plates or width of butt straps

19 1/2"

r centages of strength of longitudinal joint

rivets

86

plate

86.5

Working pressure of shell by rules

180.4 lbs

Size of manhole in shell

16" x 12"

ie of compensating ring

dished

No. and Description of Furnaces in each boiler

Three Cor.

Material

Steel

Outside diameter

45 3/8"

ngth of plain part

top

bottom

Thickness of plates

crown

1 1/4"

bottom

3/8"

Description of longitudinal joint

weld.

No. of strengthening rings

yes

orking pressure of furnace by the rules

180 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

25 3/8"

Back

3/8"

Top

25 3/8"

Bottom

25 3/8"

ch of stays to ditto: Sides

12 1/2 x 8 3/8"

Back

11 x 10 1/8"

Top

12 x 8 3/8"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

180.4 lbs

End plates in steam space:

aterial of stays

Steel

Area

Diameter at smallest part

2.1"

Area supported by each stay

104.4 sq

Working pressure by rules

181 lbs

Material of stays

Steel

aterial

Steel

Thickness

1 1/16"

Pitch of stays

22 x 20 1/2"

How are stays secured

D.N. Wash

Working pressure by rules

180 lbs

Material of Front plates at bottom

Steel

ickness

3/4"

Material of Lower back plate

Steel

Thickness

29 3/8"

Greatest pitch of stays

14 1/8 x 10 1/8"

Working pressure of plate by rules

181 lbs

Material of tube plates

Steel

iameter of tubes

3 1/4"

Pitch of tubes

11 1/2 x 4 3/4"

Material of tube plates

Steel

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

10 1/2"

tch across wide water spaces

14 1/2"

Working pressures by rules

192



# 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 Sd. in \_\_\_\_\_

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 & bottom ends & main bearings. One set coupling bolts. One set each valves for all pumps. One tail shaft. 6 Condenser tubes, 6 Pilsbury tubes. Assorted bolts nuts & riv. *per pro NORTH EASTERN MARINE ENGINEERING Co. Ltd.*

The foregoing is a correct description,

Manufacturer.

S. T. Harrison

Dates of Survey while building \_\_\_\_\_ During progress of work in shops --- 1911 Jan 30, Feb 2, 6, 14, 20, 21, 27, 29, Mar 7, 8, 12, 19, 21, 25, 27, 28, Apr 1, 10, 11, 15, 17, 23, 26, 30, May 1, 2, 4, 8

During erection on board vessel --- (28.)

Total No. of visits \_\_\_\_\_

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

Dates of Examination of principal parts—Cylinders 19-3-17 Slides 14-4-17 Covers 14-4-17 Pistons 14-4-17 Rods 19-3-17

Connecting rods 19-3-17 Crank shaft 14-4-17 Thrust shaft 14-4-17 Tunnel shafts 14-4-17 Screw shaft 1-4-17 Propeller 10-4-17

Stern tube 10-4-17 Steam pipes tested 2-5-17 Engine and boiler seatings 24-3-17 Engines holding down bolts 1-5-17

Completion of pumping arrangements 4-5-17 Boilers fixed 1-5-12 Engines tried under steam 4-5-17

Main boiler safety valves adjusted 4-5-17 Thickness of adjusting washers *Blk F 1/16" A 1/2" Std Blk F 1/8" A 3/8"*

Material of Crank shaft *Steel* Identification Mark on Do. *4105 K.H.* Material of Thrust shaft *Steel* Identification Mark on Do. *8440 M.H.*

Material of Tunnel shafts *Steel* Identification Marks on Do. *3659 H.K. 3659 H.K. 3661 H.K. 4313 K.H.* Material of Screw shafts *Steel* Identification Marks on Do. *4440 P.A. 4650 A1*

Material of Steam Pipes *Solid drawn copper 1 1/2" bore x 6 W.G.* Test pressure *400 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 and the hydraulic test of the boilers proved satisfactory. The whole of the machinery has been securely fitted on board & satisfactorily tried under steam and is in good & safe working condition & eligible in my opinion to be classed as above.

**LMC 5-12** in the Register Book.

Certificate (if required) to be sent to

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, \_\_\_\_\_

Special .. £ 33 : 14 : 0 21.5.1912

Donkey Boiler Fee .. £ : : : When received, \_\_\_\_\_

Traveling Expenses (if any) £ : : : 28.5.1912

Committee's Minute

Assigned

WED. MAY. 29. 1912

*LMC 5.12*

*William Butler*

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



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