

REPORT ON MACHINERY.

No. 25479

Received at London Office

TUE NOV-5-1912

Date of writing Report

19

When handed in at Local Office

4. 11. 12 Port of

Sunderland

No. in Survey held at
Reg. Book.

on the

Steel S.S. "Hear"

Date, First Survey

16 July

Last Survey

1-11-

1912

(Number of Visits)

27

Master

Dickinson

Built at

Sunderland

By whom built

J. Brown & Sons Ltd 148 1/2

Tons

Gross 1167

Net 667

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd 2083 C

When made

1912

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng Co Ltd 2083 C

When made

1912

Registered Horse Power

Owners

Wetherington & Everett

Port belonging to

Newcastle Tyne

Nom. Horse Power as per Section 28

148

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple expansion.

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

18" x 29 1/2" x 48"

Length of Stroke

33"

Revs. per minute

16

Dia. of Screw shaft

as per rule 10 1/4"

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

Yes

Length of stern bush

3'-6"

Dia. of Tunnel shaft

as per rule 8.98"

Dia. of Crank shaft journals

as per rule 9.43"

Dia. of Crank pin

9 1/2"

Size of Crank webs

14 1/2" x 5 1/2"

Dia. of thrust shaft under

collars

9 1/2"

Dia. of screw

13 1/2"

Pitch of Screw

14'-0"

No. of Blades

4

State whether moveable

No

Total surface

54 sq. ft.

No. of Feed pumps

Two

Diameter of ditto

2 3/4"

Stroke

16 1/2"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

3"

Stroke

16 1/2"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

1" x 9" x 9"

5 1/2" x 3 1/2" x 5"

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

In Engine Room

Three @ 2 1/2" dia & 2 @ 2 1/2" dia in well.

In Holds, &c.

2 @ 2 1/2" dia in Ford Hold

2 @ 2 1/2" dia in after hold.

and 1 @ 2 1/2" dia in

Tunnel well

No. of Bilge Injections

1

sizes

3 1/2"

Connected to condenser, or to circulating pump

C.P.

Is a separate Donkey Suction fitted in Engine room & size

Yes 2 1/2" 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

How

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

How

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

14-10-12

of Stern Tube

14-10-12

Screw shaft and Propeller

14-10-12

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

top platform

BOILERS, &c.—(Letter for record)

Manufacturers of Steel

Spencer & Sons Ltd.

Total Heating Surface of Boilers

2346 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

2-10-12

No. of Certificate

3050

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

54 1/2 sq. ft.

No. and Description of Safety Valves to

each boiler

Two spring loaded

Area of each valve

5.94 sq. in.

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Smallest distance between boiler or uptakes and bunkers or woodwork

2'-6"

Mean dia. of boilers

15'-6"

Length

10'-6"

Material of shell plates

Steel

Thickness

1 1/16"

Range of tensile strength

28 3/4 to 32 1/2 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 1/32"

Pitch of rivets

9 5/16"

Lap of plates or width of butt straps

19 1/4"

Per centages of strength of longitudinal joint

rivets 86.4%

plate 86.4%

Working pressure of shell by rules

181 lbs

Size of manhole in shell

End

16" x 12"

Size of compensating ring

Dished

No. and Description of Furnaces in each boiler

Three Plain

Material

Steel

Outside diameter

5'-7 3/8"

Length of plain part

top 43' 2"

bottom

Thickness of plates

crown 49"

bottom 64"

Description of longitudinal joint

Weld

No. of strengthening rings

How

Working pressure of furnace by the rules

180 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

3/4"

Back

13/16"

Top

3/4"

Bottom

13/16"

Pitch of stays to ditto: Sides

8 1/4" x 12 1/8"

Back

11" x 11"

Top

8 1/4" x 12 1/8"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

181 lbs

Material of stays

Steel

Diameter at smallest part

2 1/32"

Area supported by each stay

121 sq. in.

Working pressure by rules

181 lbs

End plates in steam space:

Material

Steel

Thickness

1 3/8"

Pitch of stays

25" x 21 1/4"

How are stays secured

D.N. Wash

Working pressure by rules

183 lbs

Material of stays

Steel

Diameter at smallest part

8.48"

Area supported by each stay

488 3/4 sq. in.

Working pressure by rules

180 lbs

Material of Front plates at bottom

Steel

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

15/16"

Greatest pitch of stays

14 1/2" x 11"

Working pressure of plate by rules

183 lbs

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/8" x 4 1/8"

Material of tube plates

Steel

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

9 1/4"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

192 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

2 @ 8 1/4" x 1"

Length as per rule

29 15/16"

Distance apart

12"

Number and pitch of stays in each

2 @ 8 1/4"

Working pressure by rules

183 lbs

Superheater or Steam chest; how connected to boiler

How

Can the superheater be shut off and the boiler worked

separately

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
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 main & one donkey check
valve. One propeller, assorted bolts, nuts & rivets.

The foregoing is a correct description,

per pro NORTH EASTERN MARINE ENGINEERING Co., LTD. Manufacturer.

Dates of Survey while building
During progress of work in shops -- Secretary. 1912 Jul 16 23 30 Aug 8 9 16 24 26 29 30 Sept 5 7 12 13 14 23
During erection on board vessel -- Oct 2 5 14 14 15 16 21 22 28 31 Nov 1
Total No. of visits 27 Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 12-9-12 Slides 3-10-12 Covers 3-10-12 Pistons 3-10-12 Rods 6-9-12
Connecting rods 6-9-12 Crank shaft 24-8-12 Thrust shaft 16-8-12 Tunnel shafts 16-8-12 Screw shaft 26-9-12 Propeller 12-9-12
Stern tube 14-10-12 Steam pipes tested 15-10-12 Engine and boiler seatings 14-10-12 Engines holding down bolts 16-10-12
Completion of pumping arrangements 31-10-12 Boilers fixed 16-10-12 Engines tried under steam 22-10-12
Main boiler safety valves adjusted 22-10-12 Thickness of adjusting washers 9. Value 1/4" & Value 3/8"
Material of Crank shaft Steel Identification Mark on Do. 3465 H.K. Material of Thrust shaft Steel Identification Mark on Do. 4325 J.M.
Material of Tunnel shafts Steel Identification Marks on Do. 3931 H.K. 4459 K.H. 4938 P.A. Material of Screw shafts Steel Identification Marks on Do. 4760 K.H.
Material of Steam Pipes Solid drawn copper 5" bore x 6 lbs. 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 material and workmanship are of good quality and the hydraulic tests of the boilers proved satisfactory. The whole of the machinery has been securely fitted on board & tried under steam, and is in good safe working condition & eligible in my opinion to be classed & have record. L.M.C. 11-12 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD, L.M.C. 11.12

PREX

5-11-12

The amount of Entry Fee .. £ 0 : 0 : 0 When applied for, 4-11-12
Special .. £ 22 : 4 : 0 When received, 22-11-12
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :
Committee's Minute
Assigned

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

FRI. NOV. - 8. 1912

+ L.M.C. 11.12



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