

Newcastle Rpt no. 73454

Rpt. 4.

REPORT ON MACHINERY

No. 27859

TUE. JUL. 6 1920

Received at London Office

Date of writing Report

19

When handed in at Local Office = 5 JUL 1920

Port of

Sunderland

No. in Survey held at Reg. Book.

Sunderland

Date, First Survey

26 Aug 19

Last Survey

1920

on the new steel "S/S NIOBE"

Master

Built at

Blyth

By whom built

Blyth SBC Co. (S/S No 214)

When built

1920

Engines made at

Sunderland

By whom made

North Eastern Marine Engineering Co. (No. 245)

when made

1920

Boilers made at

Sunderland

By whom made

North Eastern Marine Engineering Co. (No. 245)

when made

1920

Registered Horse Power

Owners

Port belonging to

Loan

Nom. Horse Power as per Section 28

244

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 21" 34" 56"

Length of Stroke 36"

Revs. per minute 78

Dia. of Screw shaft as per rule 11.7"

Material of screw shaft Duplex

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

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

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

Length of stern bush 4'-2"

Dia. of Tunnel shaft as per rule 10.9"

Dia. of Crank shaft journals as per rule 10.92"

as fitted 10.3"

Dia. of Crank pin 11.5"

Size of Crank webs 17x6.5"

Dia. of thrust shaft under collars 11.5"

Dia. of screw 14'-3"

Pitch of Screw 13'-9"

No. of Blades 4

State whether moceable

no

Total surface

630 sq ft

No. of Feed pumps 2

Diameter of ditto 3"

Stroke 21"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps 2

Diameter of ditto 3.5"

Stroke 21"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines 2

Sizes of Pumps 7.5x9.5 + 10.5x8

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

In Engine Room 3 @ 3"

& 1 @ 2.5"

Tunnel well - 1 @ 2.5"

In Holds, &c. fore hold - 2 @ 3" after hold - 2 @ 3"

No. of Bilge Injections 1

sizes 6"

Connected to condenser, or to circulating pump

b.p.

Is a separate Donkey Suction fitted in Engine room & size

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

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

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

What pipes are carried through the bunkers

forward hole suction

How are they protected

under timber boards

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

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

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

John Spence & Sons Ltd.

Total Heating Surface of Boilers 4224 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

2 5.2m

Working Pressure 190

Tested by hydraulic pressure to 380

Date of test

23-12-19

No. of Certificate

3643

Can each boiler be worked separately

yes

Area of fire grate in each boiler

530 sq ft

No. and Description of Safety Valves to each boiler

two direct spring

Area of each valve

10.5 x 10"

Smallest distance between boilers or uptakes and bunkers or woodwork

2'-8"

Mean dia. of boilers

15'-0"

Length

10'-6"

Material of shell plates

Thickness 1.5"

Range of tensile strength

28-32 ton

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

DR

long. seams

DRS, TR

Diameter of rivet holes in long. seams

Per centages of strength of longitudinal joint

86.4

Working pressure of shell by rules

190

Size of manhole in shell

16" x 12"

Size of compensating ring

flange

No. and Description of Furnaces in each boiler

3 Brighton

Material

steel

Outside diameter

39.5"

Length of plain part

top 3.9"

Thickness of plates

bottom 1.6"

Description of longitudinal joint

welded

No. of strengthening rings

Working pressure of furnaces by the rules

195

Pitch of stays to ditto: Sides

11.5" x 9"

Back

10.5" x 9"

Top

11.5" x 9"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

195

Material of stays

steel

Area at smallest part

2.030"

Area supported by each stay

960"

Working pressure by rules

190

End plates in steam space:

Material

steel

Thickness

1.3"

Pitch of stays

19.5" x 1.5"

How are stays secured

DN&W

Working pressure by rules

190

Material of stays

Area at smallest part

7.670"

Area supported by each stay

4060"

Working pressure by rules

196

Material of Front plates at bottom

steel

Thickness

1.5"

Material of Lower back plate

steel

Thickness

1.5"

Greatest pitch of stays

14.5" x 10.5"

Working pressure of plate by rules

Diameter of tubes

3.5"

Pitch of tubes

4.7" x 4.9"

Material of tube plates

steel

Thickness: Front

1.3"

Back

1.3"

Pitch across wide water spaces

41 (4.50)

Working pressures by rules

195

Girders to Chamber tops: Material

steel

Depth and thickness of girder at centre

2 @ 8" x 16"

Length as per rule

Working pressure by rules

192

Steam dome: description of joint to shell

none

% of strength of joint

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Pitch of rivets

Working pressure of shell by rules

Crown plates

Thickness

How stayed

SUPERHEATER.

Type

Date of Approval of Plan

Tested by Hydraulic Pressure to

Date of Test

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

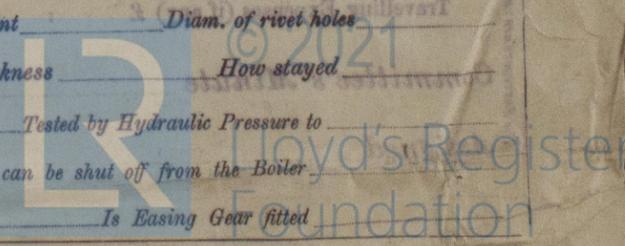
Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

Vertical text on the left margin: "By the Surveyor..."

W1200-0026



REPORT ON MACHINERY

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: - Two connecting rod top and bottom end bolts, one set of coupling bolts, two main bearing bolts iron and bolts of various sizes, one propeller, one air pump rod, one bottom end bearing, one top end bearing, two pump links, 1 set of feed and tilge pump valves, 1 main feed & 1 aux feed check valves, a quantity of assorted bolts & nuts and iron of various sizes.

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO

Geo D Weir

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1919 Aug 26, 29, Oct 12, 23, 28, 29, 30, 31, Nov 11, 12, 14, 20, 26, Dec 1, 2, 9, 15, 16, 17, Jan 7, 8, 14, 19; During erection on board vessel - Feb 13, 20, Mar 2, 24, May 14, Jun 13, 17, 21, 22, 28, July 1, 20; Total No. of visits - 36 + 7; Is the approved plan of main boiler forwarded herewith - Yes

Dates of Examination of principal parts - Cylinders 2-3-20 Slides 24-3-20 Covers 24-5-20 Pistons 24-5-20 Rods 24-3-20 Connecting rods 16-12-19 Crank shaft 20-11-19 Thrust shaft 20-11-19 Tunnel shafts 29-1-20 Screw shaft 31-5-20 Propeller 9-12-19 Stern tube 14-6-20 Steam pipes tested 28-6-20 Engine and boiler seatings 13-5-20 Engines holding down bolts 21-6-20 Completion of pumping arrangements 31-7-20 Boilers fired 21-6-20 Engines tried under steam 2-7-20 Completion of fitting sea connections 16-5-20 Stern tube 17-6-20 Screw shaft and propeller 21-6-20 Main boiler safety valves adjusted 2-7-20 Thickness of adjusting washers 10" boiler F 1 1/2", A 5/8"; 12" boiler F 1 1/2", A 5/8"

Material of Crank shaft - Steel Identification Mark on Do. LLOYD'S NO 2451 L.S.D. Material of Thrust shaft - Steel Identification Mark on Do. LLOYD'S NO 2451 L.S.D. Material of Tunnel shafts - Steel Identification Marks on Do. Material of Screw shafts - Steel Identification Marks on Do. Material of Steam Pipes - Separable wrought iron Test pressure 570 lbs per sq in

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: "S Hebe" (S/L R/P No 27782)

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

The materials and workmanship are good. The machinery has been constructed under special survey and will in our opinion be eligible for classification and the record + LMC 8-20 when the survey is complete.

To complete the survey the shaft tunnel requires to be made watertight and the suction pipes fitted in same. Spare feed and tilge pump valves to be supplied. The vessel has left for the builders quay, Newcastle Surveys advised.

Remarks: - The tunnel made watertight, the pumping arrangements completed, and the spare feed and tilge pump valves supplied. Considering the vessel eligible for the record of + LMC 8-20 as stated above.

The amount of Entry Fee £ 2 Special £ 32.4 Donkey Boiler Fee £ Travelling Expenses (if any) £

Committee's Minute TUE. AUG. 31 1920 Assigned MACHINERY CERT WRITTEN + LMC 8.20

SUNDERLAND. Certificate (if required) to be sent to

