

REPORT ON MACHINERY.

No. 27785

Received at London Office

FRI. APR. 23 1920

Date of writing Report

19

When handed in at Local Office

21 APR 1920

Port of

Sunderland

No. in Survey held at

Sunderland

Date, First Survey

26 May 1919

Last Survey

14 April 1920

Reg. Book.

(Number of Visits)

32

Gross 1969

Net 1154

Master

W Brown

Built at

Sunderland

By whom built

Osborne Graham & Co. (S/N 220)

When built

1920

Engines made at

Sunderland

By whom made

North Eastern Marine Eng. Co. Ltd. (N° 2225)

when made

1920

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng. Co. Ltd. (N° 2308)

when made

1920

Registered Horse Power

Owners

John Hudson & Co. Ltd.

Port belonging to

London

Nom. Horse Power as per Section 28

214

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

39

Revs. per minute

70

Dia. of Screw shaft

as per rule 12"

Material of screw shaft

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

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

yes

If two

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

Length of stern bush

4' 0 1/2"

Dia. of Tunnel shaft

as per rule 10 1/2"

Dia. of Crank shaft journals

as per rule 11 1/2"

Dia. of Crank pin

11 1/2"

Size of Crank webs

16 1/2" x 7"

Collars

11 1/2"

Dia. of screw

15' 0"

Pitch of Screw

15' 9"

No. of Blades

4

State whether moveable

no

Total surface

690 ft.

No. of Feed pumps

2

Diameter of ditto

3"

Stroke

1' 9"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

3 1/2"

Stroke

1' 9"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

2

Sizes of Pumps

7 1/2 x 9 1/2 x 10 1/2. 5 1/2 x 8 1/2 x 5

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

In Engine Room

4 @ 3"

In Holds, &c. Forward hold - 2 @ 3". After hold - 3 @ 3".

Tunnel well

1 @ 3"

No. of Bilge Injections

1

sizes

4"

Connected to condenser, or to circulating pump

b.p.

Is a separate Donkey Suction fitted in Engine room & size

yes 3"

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

none

How are they protected

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

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from

top platform

BOILERS, &c.—(Letter for record)

S.V.

Manufacturers of Steel

John Spencer & Sons Ltd.

2.S.B.

Total Heating Surface of Boilers

33300 ft.

Is Forced Draft fitted

no

No. and Description of Boilers

two single ended marine

Working Pressure

180

Tested by hydraulic pressure to

360

Date of test

6-10-19

No. of Certificate

3614

Can each boiler be worked separately

yes

Area of fire grate in each boiler

40 1/2 sq ft.

No. and Description of Safety Valves to

each boiler

two direct spring

Area of each valve

4.90"

Pressure to which they are adjusted

185

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1' 6"

Mean dia. of boilers

13' 6"

Length

10' 6"

Material of shell plates

steel

Thickness

1"

Range of tensile strength

29 1/2 - 33 1/2 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

WTR

Long. seams

D.S. TR

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

9 1/8"

Lap of plates or width of butt straps

19"

Percentages of strength of longitudinal joint

rivets 87.86

plate 87.65

Working pressure of shell by rules

180

Size of manhole in shell

16" x 12"

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

2

Deighton

Material

steel

Outside diameter

41 1/2"

Length of plain part

top

bottom

Thickness of plates

crown 3 1/2"

bottom 3 1/2"

Description of longitudinal joint

welded

No. of strengthening rings

Working pressure of furnace by the rules

185

Combustion chamber plates: Material

steel

Thickness: Sides

3/4"

Back

3/2"

Top

3/4"

Bottom

1 1/2"

Pitch of stays to ditto: Sides

11 1/2" x 8 1/2"

Back

11" x 10 5/8"

Top

11 1/2" x 8 1/2"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

180

Material of stays

steel

Area at smallest part

2' 10"

Area supported by each stay

10' 10"

Working pressure by rules

187

End plates in steam space:

Material

steel

Thickness

1 3/2"

Pitch of stays

23" x 18 1/2"

How are stays secured

DN & W

Working pressure by rules

181

Material of stays

steel

Area at smallest part

7' 36"

Area supported by each stay

4' 17"

Working pressure by rules

183

Material of Front plates at bottom

steel

Thickness

3/4"

Material of Lower back plate

steel

Thickness

1 1/2"

Greatest pitch of stays

14 1/2" x 10 5/8"

Working pressure of plate by rules

181

Diameter of tubes

3 1/4"

Pitch of tubes

4 3/4" x 4 1/2"

Material of tube plates

steel

Thickness: Front

3/4"

Back

3/4"

Mean pitch of stays

10.56

Pitch across wide water spaces

14 1/2"

Working pressures by rules

182

Girders to Chamber tops: Material

steel

Depth and

Thickness of girder at centre

8" x 2 1/2"

Length as per rule

30 1/2"

Distance apart

8 1/2"

Number and pitch of stays in each

2 @ 8 1/2"

Working pressure by rules

182

Steam dome: description of joint to shell

none

% of strength of joint

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

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

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

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

W285-0072

IS A DONKEY BOILER FITTED? no

If so, is a report now forwarded? —

SPARE GEAR. State the articles supplied:— Two connecting rod top and bottom end bolts and nuts, two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, iron and bolts of various sizes, one propeller.

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD.

Geo. D. New

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1919 May 26, 27, July 1, 7, Aug 12, 16, Sep 4, 12, 14, 29, Oct 6, 12, 13, 14, 21, 24, 28, 29, 30, Nov 13, Dec 8, 14
{ During erection on board vessel -- } Jan 24, Feb 12, 17, 18, 20, 27, Mar 2, 20, 10, Apr 14
Total No. of visits 32

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " "

Dates of Examination of principal parts: Cylinders 23-9-19 Slides 12-8-19 Covers 23-9-19 Pistons 26-8-19 Rods 29-9-19
Connecting rods 7-7-19 Crank shaft ^{finished at} N.W.C. Thrust shaft 23-9-19 Tunnel shafts 12-11-19 Screw shaft 20-2-20 Propeller 28-10-19
Stern tube 18-2-20 Steam pipes tested 8-3-20 Engine and boiler seatings 12-2-20 Engines holding down bolts 8-3-20

Completion of pumping arrangements 14-4-20 Boilers fixed 2-3-20 Engines tried under steam 10-3-20

Completion of fitting sea connections 12-2-20 Stern tube 27-2-20 Screw shaft and propeller 27-2-20

Main boiler safety valves adjusted 10-3-20 Thickness of adjusting washers Port holes - both $\frac{7}{16}$ " steel hole $F\frac{3}{8}$ " $A\frac{5}{16}$ "

Material of Crank shaft 1. steel Identification Mark on Do. 993N.W.C. Material of Thrust shaft 1. steel Identification Mark on Do. 2225 L.C.D.

Material of Tunnel shafts 1. steel Identification Marks on Do. 2225 L.C.D. Material of Screw shafts 1. steel Identification Marks on Do. 2225 L.C.D.

Material of Steam Pipes Lap welded mild iron Test pressure 540 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 no If so, state name of vessel —

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 is eligible in my opinion for classification and the record + L.M.C. 4.20

It is submitted that
this vessel is eligible for
THE DONKEY + L.M.C. 4.20

well 24/4/20

well

A.P.R.

The amount of Entry Fee ... £ 2 : - : When applied for,

Special ... £ 30 : 14 : 21 APR 1920

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

Travelling Expenses (if any) £ : : 20/5/1920

Committee's Minute

FRI. APR. 30 1920

Assigned

+ L.M.C. 4.20

S.C. Davis

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation

CERTIFICATE WRITTEN