

Rpt. 4.

REPORT ON MACHINERY

No. 73688

WED. OCT 20 1920

Date of writing Report

19

When handed in at Local Office

19 OCT 1920

Port of

NEWCASTLE ON TYNE

No. in Survey held at
Reg. Book.

South Shields

Date, First Survey 24th FebLast Survey 29th September 1920

on the S.S. "Trevonian"

(Number of Visits 35)

Master J. H. Kemp

Built at

South Shields

By whom built

J. Readhead & Sons Ltd.

When built 1920

Engines made at

South Shields

By whom made

J. Readhead & Sons Ltd.

when made 1920

Boilers made at

South Shields

By whom made

J. Readhead & Sons Ltd.

when made 1920

Registered Horse Power

Owners

Hain S.S. Co Ltd.

Port belonging to

H. J. J. J.

Nom. Horse Power as per Section 28

425

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

27" 44" 73"

Length of Stroke

48"

Revs. per minute

68

Dia. of Screw shaft

as per rule 14.77

Material of

Screw Iron

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

5'-0"

Dia. of Tunnel shaft

as per rule 13.32

Dia. of Crank shaft journals

as per rule 13.99

Dia. of Crank pin

14 1/2"

Size of Crank webs

9 5/8" x 19"

Dia. of thrust shaft under

collars

14 3/4"

Dia. of screw

17'-6"

Pitch of Screw

17'-0"

No. of Blades

4

State whether moveable

Solid

Total surface

96 sq ft

No. of Feed pumps

2

Diameter of ditto

4 1/2"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 1/2"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

3

Sizes of Pumps

General service pump 7 1/2" x 5" x 6"

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

In Engine Room Four, 2 Port 3 1/2" dia & 2 Star 3 1/2" dia

In Holds, &c. Two 3 1/2" in Nos. 1, 2, 3, & 4 holes and one 2 1/2" dia in funnel well.

No. of Bilge Injections

one

sizes 8" dia

Connected to condenser, or to circulating pump

pump

Is a separate Donkey Suction fitted in Engine room & size

Yes

3 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

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

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(1))

Manufacturers of Steel

John Spencer & Sons Ltd.

Newburn

Total Heating Surface of Boilers

6876 sq ft

Is Forced Draft fitted

No

No. and Description of Boilers

3 Single ended

Working Pressure

180 lbs/sq in

Tested by hydraulic pressure to

360 lbs/sq in

Date of test

2.7.20

No. of Certificate

9427

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63.3 sq ft

No. and Description of Safety Valves to

each boiler

Two Spring loaded

Area of each valve

7.06 sq in

Pressure to which they are adjusted

185 lbs/sq in

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1'-10"

Mean dia. of boilers

15'-7 1/4"

Length

11'-6"

Material of shell plates

Steel

Thickness

1 1/4"

Range of tensile strength

28/32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

DR. Lap.

long. seams

T.R.D. 49/50

Diameter of rivet holes in long. seams

1 5/16"

Pitch of rivets

9 1/8"

Lap of plates or width of butt straps

19 1/2"

Per centages of strength of longitudinal joint

rivets 88.3%

plate 85.6%

Working pressure of shell by rules

181.02 lbs/sq in

Size of manhole in shell

16" x 12"

Size of compensating ring

7" x 1 1/4"

No. and Description of Furnaces in each boiler

3 Morrison

Material

Steel

Outside diameter

4'-2 3/16"

Length of plain part

top

bottom

Thickness of plates

crown

19/32"

Description of longitudinal joint

Welded

No. of strengthening rings

1

Working pressure of furnace by the rules

188 lbs/sq in

Combustion chamber plates: Material

Steel

Thickness: Sides

23/32"

Back

1/16"

Top

23/32"

Bottom

1"

Pitch of stays to ditto: Sides

10 x 9 1/4"

Back

10 1/4 x 8 3/4"

Top

10 3/8 x 9 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

192 lbs/sq in

Material of stays

Iron

Area at smallest part

2.43 sq in

Area supported by each stay

89.6 sq in

Working pressure by rules

213 lbs/sq in

End plates in steam space:

Material

Steel

Thickness

1 1/32"

Pitch of stays

21" x 21 3/4"

How are stays secured

D.N.T.W.

Working pressure by rules

191 lbs/sq in

Material of stays

Steel

Area at smallest part

8.48 sq in

Area supported by each stay

445.8 sq in

Working pressure by rules

197 lbs/sq in

Material of Front plates at bottom

Steel

Thickness

7/8"

Material of Lower back plate

Steel

Thickness

27/32"

Greatest pitch of stays

13 5/8" x 8 3/4"

Working pressure of plate by rules

187 lbs/sq in

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2" x 4 1/2"

Material of tube plates

Steel

Thickness: Front

31/32"

Back

3/4"

Mean pitch of stays

9"

Pitch across wide water spaces

14"

Working pressures by rules

181.2 lbs/sq in

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9" x 1 3/4"

Length as per rule

2'-7 1/2"

Working pressure by rules

205 lbs/sq in

Steam dome: description of joint to shell

%

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

2020

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

Is Easing Gear fitted

Foundation

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

Foundation

Foundation

IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:— *One propeller shaft, One propeller, Two main bearing bolts, Two bottom end & two top end bolts, One set of coupling bolts, One set of feed pump valves, One set of bilge pump valves, Six main boiler tubes, Three main condenser tubes, Six junk pump bolts, Three patent tube stoppers, Three plain tube stoppers, Assorted iron bolts & nuts*

The foregoing is a correct description,

FOR JOHN READHEAD & SONS, LIMITED,

W. P. Newby

Eng^r Manager
Manufacturer.

Dates of Survey while building { During progress of work in shops - - Jan. 4, Feb. 17, 24, Mar. 8, 26, Apr. 13, 23, 24, May 12, Jun. 7, 14, 30, Jul. 2, 12, 16, 19, 23, 26, 28, 29, Aug. 3, 4, 5, 6, 10, 12, 16, Sept. 7, 9, 13, 18, 22, 23, 29.
During erection on board vessel - -
Total No. of visits - 35.

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *16/7/20* Slides *23/7/20* Covers *23/7/20* Pistons *23/7/20* Rods *26/7/20* Connecting rods *30/6/20* Crank shaft *23/7/20* Thrust shaft *30/6/20* Tunnel shafts *30/6/20* Screw shaft *30/6/20* Propeller *12/7/20* Stern tube *9/6/20* Steam pipes tested *12/8/20* Engine and boiler seatings *23/7/20* Engines holding down bolts *23/9/20* Completion of pumping arrangements *23/9/20* Boilers fixed *26/7/20* Engines tried under steam *23/9/20* Completion of fitting sea connections *14/6/20* Stern tube *14/6/20* Screw shaft and propeller *23/7/20* Main boiler safety valves adjusted *23/9/20* Thickness of adjusting washers *5/16" 3/8" 3/8" 3/8" 3/8"* Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S No. 3196 D MR.* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S No. 3196 D MR.* Material of Tunnel shafts *Scrap Iron* Identification Marks on Do. *LLOYD'S No. 2190 D.D.W. 30.6.20 W.L.H.* Material of Screw shafts *Scrap Iron* Identification Marks on Do. *LLOYD'S No. 3196 D MR. 30.6.20 W.L.H.* Material of Steam Pipes *Copper* Test pressure *360 lbs*

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 machinery of this vessel has been constructed under special survey, the material and workmanship are of good quality, it has been securely fitted on board and satisfactorily, tried under steam at moorings for 2 1/2 hours.*

The machinery of this vessel is now in my opinion eligible for record in L.M.C. in red in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.20

Reh
12/10/20

A.R.R.

The amount of Entry Fee ... £ 3 : - :
Special ... £ 41 : 5 :
Donkey Boiler Fee ... £ 2 : 2 :
Travelling Expenses (if any) £ : :
When applied for, 15 OCT 1920
When received, 22/10/20

Committee's Minute TUE. OCT. 26 1920

Assigned

+ L.M.C. 9.20

W. L. Hall
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation