

## REPORT ON MACHINERY.

No. 72491

Received at London Office

Date of writing Report

19

When handed in at Local Office

20 NOV 1919

Port of Newcastle on Tyne

No. in Survey held at  
Reg. Book.

South Shields

Date, First Survey

28 Feb

Last Survey

5th Nov. 1919

(Number of Visits 22)

on the

S.S. "Yrekieve"

Tons

Gross 5244

Net 3230

Master

Built at

South Shields

By whom built

J. Readhead &amp; Son

When built

1919

Engines made at

South Shields

By whom made

J. Readhead &amp; Son

when made

1919

Boilers made at

South Shields

By whom made

J. Readhead &amp; Son

when made

1919

Registered Horse Power

Owners

Hain S.S. Co. Ltd

Port belonging to

J. Lee

Nom. Horse Power as per Section 28

513

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &amp;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

77

Dia. of Screw shaft

as per rule 14.66  
as fitted 15.5

Material of screw shaft

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

No

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

No

If two

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

No

Length of stern bush

5'-0 1/2"

Dia. of Tunnel shaft

as per rule 13.334  
as fitted 13 1/2"

Dia. of Crank shaft journals

as per rule 14  
as fitted 14 1/2"

Dia. of Crank pin

14 1/2"

Size of Crank webs

9x22 1/2"

Dia. of thrust shaft under

rollers

14 3/4"

Dia. of screw

17'-6"

Pitch of Screw

16'-6"

No. of Blades

4

State whether moveable

Solid

Total surface

98.2 sq ft

No. of Feed pumps

2

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Three

Sizes of Pumps

General Service 9 1/2 x 7 x 18  
Ballast 10 1/2 x 14 x 24

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

In Engine Room

Two 3 1/2" diameter

In Holds, &amp;c. Two 3 1/2" in Nos. 1, 2, &amp; 3 holds &amp; Cross

No. of Bilge Injections

One size 13"

Connected to condenser, or to circulating pump

pump

Is a separate Donkey Suction fitted in Engine room &amp; size

Yes 3 1/2"

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

No

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

Yes

Are they Valves or Cocks

Both

Are the Discharge Pipes above or below the deep water line

Main discharge below all others above

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate

Yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate

Yes

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Yes

How are they protected

wood casing

What pipes are carried through the bunkers

Forward bilge pipes

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

OILERS, &amp;c.—(Letter for record S)

Manufacturers of Steel

J. Spencer &amp; Sons Ltd.

Total Heating Surface of Boilers

7563 sq ft

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single Ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

18/7/19

No. of Certificate

9261

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 direct

Area of each valve

9.62 sq in

Smallest distance between boilers or uptakes and bunkers or woodwork

2'-4"

Mean dia. of boilers

15'-6"

Length

11'-6"

Material of shell plates

Steel

Thickness

1 1/4"

Range of tensile strength

28/32 ton

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

2 R Lap

Long. seams

6 R Butt

Diameter of rivet holes in long. seams

1 5/8"

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

182 lbs

Size of manhole in shell

16 x 12"

Size of compensating ring

Flanged Spigot

No. and Description of Furnaces in each boiler

3 Doughton

Material

Steel

Outside diameter

50 3/16"

Length of plain part

top  
bottom

Thickness of plates

crown  
bottom

Description of longitudinal joint

Welded

No. of strengthening rings

1

Working pressure of furnace by the rules

185 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

23/32"

Back

1/16"

Top

23/32"

Bottom

1"

Pitch of stays to ditto: Sides

10 5/8 x 9 1/4"

Back

10 1/4 x 8 3/4"

Top

10 5/8 x 9 1/4"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

181 lbs

Material of stays

Steel

Area at smallest part

2'-7 1/2"

Area supported by each stay

104 sq in

Working pressure by rules

219

End plates in steam space:

Material

Steel

Material

Steel

Thickness

1 1/32"

Pitch of stays

20 1/2 x 21 3/4"

How are stays secured

Double nuts  
washers

Working pressure by rules

192

Material of stays

Steel

Area at smallest part

8'-48"

Area supported by each stay

446 sq in

Working pressure by rules

192

Material of Front plates at bottom

Steel

Thickness

3/32"

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

Diameter of tubes

2 3/4"

Pitch of tubes

4 x 3 7/8"

Material of tube plates

Steel

Thickness: Front

31/32"

Back

3/4"

Mean pitch of stays

9 7/8"

Pitch across wide water spaces

13 5/8"

Working pressures by rules

181 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

10" x 13 1/4"

Length as per rule

35 9/16"

Distance apart

10 5/8"

Number and pitch of stays in each

Three

9 1/4"

Working pressure by rules

187 lbs

Steam dome: description of joint to shell

None

% of strength of joint

1

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

PERHEATER. Type

None

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

Pressure to which each is adjusted

Is Easing Gear fitted

Diameter of Safety Valve

Foundation

5200-0025

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Propeller, Propeller shaft, 2 top end bolts + nuts  
2 Bottom end bolts + nuts, 2 Main bearing bolts + nuts, 6 Couplings bolts + nuts  
1 Feed pump suction valve, 1 Feed pump discharge valve, 1 Bilge pump suction +  
discharge valve, 3 Main check valves, 3 Donkey feed check valves, 50 Bolts + nuts  
assorted, 6 Studs of each size for boiler mounting covers, 12 Cylinder cover + steam  
chest studs, 12 Junkring studs + nuts, One H.P. piston valve, 6 Air pump valves  
5 Bars of round iron  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ , + 1.

The foregoing is a correct description,  
For JOHN READHEAD & SONS, Ltd.

W. P. Henry.

Manufacturer.

MANAGER, ENGRS. DEPT.

Dates of Survey while building

During progress of work in shops --  
During erection on board vessel --  
Total No. of visits

1919.  
Feb. 22. Mar. 13 31. Apr. 30. May. 2. 6. 24. 29. Jun. 5. 13. Jul. 8. 15. Aug. 13. 29. Sept. 3.  
12. 16. 19. 25. Oct. 1. 8. Nov. 5.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 31/3/19 Slides 6/5/19 Covers 31/3/19 Pistons 30/4/19 Rods 31/3/19

Connecting rods 30/4/19 Crank shaft 31/3/19 Thrust shaft 31/3/19 Tunnel shafts 5/6/19, 13/9/19 Screw shaft 13/8/19, 25/9/19 Propeller 13/8/19, 29/9/19

Stern tube 19/8/19, 3/9/19 Steam pipes tested 23/9/19 Engine and boiler seatings 3/9/19 Engines holding down bolts 1/10/19

Completion of pumping arrangements 1/10/19 Boilers fixed 29/9/19 Engines tried under steam 1/10/19

Completion of fitting sea connections 3/9/19 Stern tube 3/9/19 Screw shaft and propeller 12/9/19

Main boiler safety valves adjusted 1/10/19 Thickness of adjusting washers  $\frac{7}{16}$   $\frac{9}{16}$   $\frac{1}{2}$   $\frac{3}{8}$   $\frac{7}{16}$   $\frac{7}{16}$

Material of Crank shaft Steel Identification Mark on Do. Material of Thrust shaft Steel Identification Mark on Do.

Material of Tunnel shafts Iron Identification Marks on Do. Material of Screw shafts Iron Identification Marks on Do.

Material of Steam Pipes Iron Test pressure 540 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 Yes If so, state name of vessel Standard Vessel B. Type.

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel

has been constructed under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tried under steam at moorings for 2½ hours

The machinery of this vessel is now in my opinion eligible for record of L.M.C. 11, 19. (in red) in the register book.

It is submitted that  
this vessel is eligible for  
THE RECORD + L.M.C. 11. 19. F.D.

The amount of Entry Fee ... £ : :  
Special ... £ 116. 10 : :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 20 NOV 1919  
When received, 22/11/19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned

TUE NOV 25 1919

+ L.M.C. 11, 19

F.D.