

## REPORT ON MACHINERY.

No. 396 H3

Received at London Office

WED. FEB. 18. 1920

Date of writing Report

19

When handed in at Local Office

16. 2

to

20

Port of Glasgow

No. in Survey held at  
Reg. Book.

Glasgow

Date, First Survey

A. 11. 18.

Last Survey

5 / 2 /

1920.

on the

S.S. "YAR BRAHMIN"

(Z class)

(Number of Visits)

34.

Tons }  
Gross  
Net

When built 1919

Master

Built at Pt Glasgow

By whom built

Russell &amp; Co

Engines made at

Glasgow

By whom made

D. Rowan &amp; Co Ltd (nos 17)

when made

Boilers made at

Do.

By whom made

Do.

(nos 17)

when made

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

517

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 14.7"

as fitted 15.2"

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

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

Yes

If two

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

—

Length of stern bush

5'-0 1/2"

Dia. of Tunnel shaft

as per rule 13.3"

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 web

28x9"

Dia. of thrust shaft under

collars

14 3/4"

Dia. of screw

17-6"

Pitch of Screw

16-6"

No. of Blades

4

State whether moveable

No

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

3

Sizes of Pumps

Gould 9 1/2 x 7 x 18"

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

In Engine Room

(3) 3 1/2" Stokes (3) 3 1/2"

In Holds, &amp;c. Cross Bunker (2) 3 1/2" aft hold (2) 3 1/2"

Tunnel well (1) 3 1/2"

No. of Bilge Injections

1

sizes 1 1/2" 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

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

below

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

7 suction

How are they protected

wood casings

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

No

worked from bunkway escapes fitted

## BOILERS, &amp;c.—(Letter for record)

3

Manufacturers of Steel

Steel 60 of Scotland &amp; Co

S.S.B.

Total Heating Surface of Boilers

6684 sq ft

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single ended

Working Pressure

180 lb

Tested by hydraulic pressure to

1360

Date of test

29.8.19

No. of Certificate

14881

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

63.33 sq ft

No. and Description of Safety Valves to

each boiler

2 Spring loaded

Area of each valve

9.60 sq in

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1-6

Mean dia. of boilers

15-6

Length

11-6

Material of shell plates

Steel

Thickness

1 1/4"

Range of tensile strength

28632 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

Lap

long. seams

TR DBS

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

183

Size of manhole in shell

16"x12"

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

3 corrugated

Material

Steel

Outside diameter

4'-2 3/4"

Length of plain part

top

bottom

Thickness of plates

crown 19

bottom 32

Description of longitudinal joint

welded

No. of strengthening rings

—

Working pressure of furnace by the rules

188

Combustion chamber plates: Material

Steel

Thickness: Sides

23

Back

11

Top

32

Bottom

32

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

180

Material of stays

S

Area at smallest part

2.395

Area supported by each stay

98

Working pressure by rules

19

End plates in steam space:

Material

Steel

Thickness

1 3/4"

Pitch of stays

2 1/4 x 20 1/2"

How are stays secured

Nuts

Working pressure by rules

181

Material of stays

Steel

Area at smallest part

8.290

Area supported by each stay

445.0

Working pressure by rules

198

Material of Front plates at bottom

Steel

Thickness

3/8"

Material of Lower back plate

Steel

Thickness

27

Greatest pitch of stays

13 5/8 x 8 3/4"

Working pressure of plate by rules

187

Diameter of tubes

2 3/4"

Pitch of tubes

4 x 3 3/8"

Material of tube plates

Steel

Thickness: Front

31

Back

3

Mean pitch of stays

9 7/8"

Pitch across wide water spaces

13 5/8"

Working pressures by rules

181

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

10 x 7 1/2 (2)

Length as per rule

35 7/8"

Distance apart

10-8"

Number and pitch of stays in each

(3) 9 1/4"

Working pressure by rules

188

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

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

Diameter of Safety Valve

Pressure to which each is adjusted

Is Easing Gear fitted

012315-012323-0232



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 top and bolts and nuts, 2 bottom and bolts and nuts, 2 main bearing bolts and nuts, 1 set coupling bolts and nuts, 1 set feed and beer pump valves, assorted iron bolts and nuts and other articles as required by specification.

The foregoing is a correct description,

Daniel Kavanagh & Co. Ltd. for Alex. Laid. Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1918 Nov 4 Dec 11 1919 Jan 22 Feb 6 11 Mar 11 Apr 16 May 4 16 June 3 16 18 20 23 24 30 July 1 1920 Aug 1 12 22 29 Sept 4 Oct 10 Dec 1 12 14 26 29 1920 Jan 6 8 Feb 5  
During erection on board vessel --  
Total No. of visits 3 ft.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 6.2.19 Slides 11.3.19 Covers 11.3.19 Pistons 16.4.19 Rods 3.6.19  
Connecting rods 23.6.19 Crank shaft 30.6.19 Thrust shaft 12.8.19 Tunnel shafts 10.10.19 Screw shaft 4.9.19 Propeller 4.9.19  
Stern tube 22.8.19 Steam pipes tested 14.7.19 Engine and boiler seatings 17.12.19 Engines holding down bolts 26.12.19  
Completion of pumping arrangements 26.12.19 Boilers fixed 26.12.19 Engines tried under steam 26.12.19 5.2.20  
Completion of fitting sea connections Cyl. Stern tube Cyl. Screw shaft and propeller

Main boiler safety valves adjusted 26.12.19 Thickness of adjusting washers Port  $\frac{3}{32}$  "  $\frac{3}{16}$  " Centre  $\frac{3}{16}$  "  $\frac{3}{4}$  " Sta  $\frac{3}{8}$  "  $\frac{3}{8}$  " Are all

Material of Crank shaft Steel Identification Mark on Do. 1772 AF 717 Material of Thrust shaft Steel Identification Mark on Do. 12.8.19 Are they

Material of Tunnel shafts Steel Identification Marks on Do. \* Material of Screw shafts Steel Identification Marks on Do. 4.9.19 Are they

Material of Steam Pipes Steel Test pressure 540 lb. What p

Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150° F. Yes Are all

Have the requirements of Section 49 of the Rules been complied with Yes Are the

Is this machinery duplicate of a previous case Yes If so, state name of vessel Standard 2 Is the S

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

\* L R 2297 2519 L R 2160 2208 L R 4649 2511  
T 688 T 617 T 618 T 644 C.M. T 817  
10.10.19 JE 10.10.19 JE 10.10.19 JE 10.10.19 JE 10.10.19 JE 10.10.19 JE  
Total B  
Working

The Machinery of this Vessel has been constructed under special Survey in accordance with the Rules and approved Plans and has been seen working satisfactorily under steam. Materials and workmanship are good.

The Machinery is eligible in our opinion to be classified + LMC 2-20 and to have record of Fitted for oil fuel 2.20 F.P. above 150° F.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 2.20. F.D.

FITTED FOR OIL FUEL 2.20. F.P. ABOVE 150° F.

The amount of Entry Fee ... £ : : When applied for, 17.2.20.  
Special ... £ 146 : 11 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : : When received, 18/2/1920.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 14 FEB 1920

Assigned + LMC 2.20 Fitted for oil fuel 2.20 F.P. above 150° F.

FRI. AUG. 16 1920  
WED. MAY. 18 1921

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