

REPORT ON MACHINERY.

No. 39198.

Received at London Office

Writing Report

19

When handed in at Local Office

6.10.19. Port of Glasgow

Survey held at
Book.

Glasgow

Date, First Survey

4.11.19

Last Survey

26th Sept 1919

(Number of Visits)

38

Gross 5541

Net 3413

on the

SS. "WARCAEKWAR"

(Z Class)

Built at Glasgow

By whom built

Lithgow & Co (No 719)

When built 1919

es made at

Glasgow

By whom made

R. Rowan & Co (No 710)

when made 1919

rs made at

Do

By whom made

Do

(No 710)

when made 1919

tered Horse Power

Owners The Anglo Saxon Petroleum Co

Port belonging to

Horse Power as per Section 28

517

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

INES, &c.—Description of Engines

Triple expansion

No. of Cylinders

3

No. of Cranks

3

of Cylinders 27-44-73

Length of Stroke 48

Revs. per minute 81

Dia. of Screw shaft

as per rule 14.7

Material of screw shaft

as fitted 15.2

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

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

on the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

Yes

If two

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

—

Length of stern bush 5-0 1/2

of Tunnel shaft

as per rule 13.3

Dia. of Crank shaft journals

as per rule 14

Dia. of Crank pin 14 1/2

Size of Crank webs 9x28

Dia. of thrust shaft under

as 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

of Feed pumps

2

Diameter of ditto

4

Stroke

24

Can one be overhauled while the other is at work

Yes

of Bilge pumps

2

Diameter of ditto

4

Stroke

24

Can one be overhauled while the other is at work

Yes

of Donkey Engines

3

Sizes of Pumps

Sallant 10 1/2 x 14 x 24

General 9 1/2 x 7 x 18

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

In Holds, &c. Fore hold (2) 3 1/2" after hold (2) 3 1/2"

Engine Room

(3) 3 1/2"

Stoke hold (2) 3 1/2"

Tunnel well (1) 2 1/2"

of Bilge Injections

(sizes 12"

Connected to condenser, or to circulating pump

Pump

Is a separate Donkey Suction fitted in Engine room & size

Yes 3 1/2"

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

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

Yes

Are they Valves or Cocks

Both

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

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

t pipes are carried through the bunkers

7 x 2 Suctions

How are they protected

Iron casings

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

Yes

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

Yes

rs of examination of completion of fitting of Sea Connections

Screw Shaft Tunnel

Screw shaft and Propeller

Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

No

worked from Trunkway escape fitted

LERS, &c.—(Letter for record

S)

Manufacturers of Steel Steel 6 of Scotland & Co Ltd

d Heating Surface of Boilers

7668

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single ended

Working Pressure

185 lb

Tested by hydraulic pressure to

360 lb

Date of test

22.5.19

No. of Certificate

14742

each boiler be worked separately

Yes

Area of fire grate in each boiler

63.33

No. and Description of Safety Valves to

boiler 2 Spring loaded

Area of each valve

9.6

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

Yes

eldest 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 1/4"

Range of tensile strength

28.6-32 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

No Lap

seams TRDBS

Diameter of rivet holes in long. seams

1-5/16"

Pitch of rivets

9/8"

Lap of plates or width of butt straps

19 1/2"

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 x 12"

of compensating ring

and flanged

No. and Description of Furnaces in each boiler

3 Annular

Material

Steel

Outside diameter

4-2 3/16"

gth of plain part

top

bottom

Thickness of plates

1.9

Description of longitudinal joint

Weld

No. of strengthening rings

—

Working pressure of furnace by the rules

188

Combustion chamber plates: Material

Steel

Thickness: Sides

3/32"

Back

1/16"

Top

3/32"

th 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

Steel

Diameter at smallest part

2.395

Area supported by each stay

98

Working pressure by rules

219

End plates in steam space:

Material

Steel

Thickness

1 1/32"

Pitch of stays

2 1/2 x 20 1/2"

How are stays secured

Nuts

Working pressure by rules

181

Material of stays

Steel

Material

Steel

Diameter at smallest part

8.29

Area supported by each stay

445

Working pressure by rules

198

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"

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

3/32"

Back

3/4"

Mean pitch of stays

9 7/8"

ch 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 5/8"

Number and pitch of stays in each

(3) 9 1/4"

Working pressure by rules

188

Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

Materially

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Lloyd's Register
Foundation
W1533-0093

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description		None.	
Made at	By whom made	When made	Where fixed	
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
If fitted with easing gear	If steam from main boilers can enter the donkey boiler		Dia. of donkey boiler	Length
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long. seams	
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

SPARE GEAR. State the articles supplied:— 2 Top end bolts and nuts 2 bottom end bolts and nuts 6 coupling bolts and nuts 2 main bearing bolts and nuts 2 set of feed and bilge Pump Valves assorted Iron bolts and nuts and other spares as required by Specification

The foregoing is a correct description,

David Rowan & Co. Ltd. Manufacturer.

Dates of Survey while building	During progress of work in shops	1917. Nov. 4. 9. 1918. Oct. 4. 8. 28. Dec. 11. 13. 19. 1919 Jan 8. 22. Feb. 6. 11. Mar 10. 11.
	During erection on board vessel	Apr 1. 16. May 2. 7. 16. 19. 22. June 3. 16. 18. 20. 23. July 1. 8. 14. Aug 11. 25. 29. Sep 1. 12. 22. 23.
	Total No. of visits	38.

Is the approved plan of main boiler forwarded herewith yes.

Dates of Examination of principal parts—Cylinders 6.2.19 Slides 11.2.19 Covers 11.3.19 Pistons 16.4.19 Rods 16.4.19
 Connecting rods 6.2.19 Crank shaft 10.3.19 Thrust shaft 8.7.19 Tunnel shafts 11.8.19 Screw shaft 23.6.19 Propeller 23.6.19
 Stern tube 16.6.19 Steam pipes tested 13.12.18 Engine and boiler seatings 12.9.19 Engines holding down bolts 12.9.19
 Completion of pumping arrangements 23.9.19 Boilers fixed 22.9.19 Engines tried under steam 23.9.19 26.9.19
 Main boiler safety valves adjusted 23.9.19 Thickness of adjusting washers Sta S 7/8 Centre Sta 3/8 Port S 7/8
 Material of Crank shaft Steel Identification Mark on Do. 710TM Material of Thrust shaft Steel Identification Mark on Do. 11218
 Material of Tunnel shafts Iron Identification Marks on Do. 8719 Material of Screw shafts Steel Identification Marks on Do. T75D
 Material of Steam Pipes Iron Test pressure 540 lb

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

* (4) 2708AF TM 11.8.19 (2) 272 TM 11.8.19.

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 Classed + LMC 9.19. and to have record of Fitted for oil fuel 9.19 F.P. above 150° F

It is submitted that this vessel is eligible for THE RECORD. + LMC. 9.19 FD Fitted for Oil Fuel. 9.19 F.P. above 150° F

Roll 10/10/19

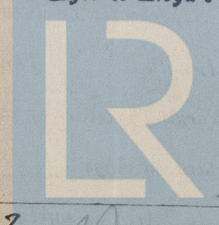
The amount of Entry Fee	£ 146:11:0	When applied for, 7.10.19
Special	£	When received, 9.10.19
Donkey Boiler Fee	£	
Travelling Expenses (if any)	£	

as Bartholomew & L. Shaw. Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 7-OCT 1919

Assigned + L.M.C. 9.19 FD

Fitted for oil fuel 9.19 F.P. above 150° F



Lloyd's Register Foundation

GLASGOW

Certificate (if required) to be sent to

6.10.19