

REPORT ON MACHINERY.

No. 12674

Date of writing Report

19

When handed in at Local Office

27th Jan. 1921

Port of

Received at London Office

Aberdeen.

FRI 28 JAN. 1921

No. in Survey held at
Reg. Book.

Aberdeen.

Date First Survey

27th April 1920

Last Survey

24th January 1921

on the machinery & boiler of S/S "Harlaw Plain"

(Number of Visits 31)

Gross 462.20

Net 188.96

When built 1920.

Master Benjamin Williams Built at Aberdeen.

By whom built John Lewis & Sons Ltd (89)

Engines made at Aberdeen

By whom made John Lewis & Sons Ltd (160) when made 1920.

Boilers made at Aberdeen

By whom made John Lewis & Sons Ltd (116) when made 1920.

Registered Horse Power

Owners J. W. Henderson

Port belonging to Aberdeen

Nom. Horse Power as per Section 28

83

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

No.

ENGINES, &c.—Description of Engines

Triple Expansion.

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 12 $\frac{1}{2}$ " - 21" - 34" Length of Stroke 24" Revs. per minute 106Dia. of Screw shaft as per rule 4 $\frac{1}{2}$ "

Material of Scrap 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

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 space

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

Yes

Length of stern bush 2' 6 $\frac{1}{2}$ "Dia. of Tunnel shaft as per rule 6-3 $\frac{1}{2}$ "Dia. of Crank shaft journals as per rule 6-6 $\frac{1}{2}$ "

Dia. of Crank pin 4"

Size of Crank webs 12 $\frac{3}{4}$ " x 4 $\frac{1}{2}$ "

Dia. of thrust shaft under

collars 4"

Dia. of screw 9' 0"

Pitch of Screw 11' 3"

No. of Blades 4

State whether moveable

W

Total surface

30 #

No. of Feed pumps 2

Diameter of ditto 2 $\frac{1}{2}$ "

Stroke 12"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps 2

Diameter of ditto 2 $\frac{1}{2}$ "

Stroke 12"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines 2

Sizes of Pumps

BALLAST 6" x 7" x 8"

GENERAL 5" x 4" x 5"

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

In Engine Room 2 @ 2 $\frac{1}{2}$ "In Holds, &c. 2 @ 2 $\frac{1}{2}$ "

No. of Bilge Injections 1

sizes 3

Connected to condenser, or to circulating pump

c.p.

Is a separate Donkey Suction fitted in Engine room & size

Yes, 2 $\frac{1}{2}$ "

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

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

Suctions from hold

How are they protected

Strong 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

No tunnel

Is it fitted with a watertight door

Yes

worked from

Yes

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

David Colville & Sons Ltd

Total Heating Surface of Boilers 15 $\frac{1}{3}$ #

Is Forced Draft fitted

No.

No. and Description of Boilers

one single ended marine.

Working Pressure 180 lbs/sq

Tested by hydraulic pressure to

320 lbs/sq

Date of test

5.11.20

No. of Certificate

1001

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

52.74 #

No. and Description of Safety Valves to

each boiler

2 direct Spring

Area of each valve

5.94 #

Pressure to which they are adjusted

180

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

in way of boiler

Mean dia. of boilers

13' 0"

Length

10' 6"

Material of shell plates

Thickness 1 $\frac{1}{8}$ "

Range of tensile strength

28/32

Are the shell plates welded or flanged

No.

Descrip. of riveting: cir. seams

D.R. Lap.

long. seams T.R.D.B.S.

Diameter of rivet holes in long. seams

1 $\frac{3}{16}$ "

Pitch of rivets

8 $\frac{1}{4}$ "

Gap of plates or width of butt straps

1 $\frac{1}{8}$ "

Per centages of strength of longitudinal joint

rivets 88.9

plate 85.6

Working pressure of shell by rules

193

Size of manhole in shell

16" x 12"

Size of compensating ring

No. and Description of Furnaces in each boiler

3 Plain.

Material

S

Outside diameter

3' 3 $\frac{1}{2}$ "

Length of plain part

top 6' 10 $\frac{1}{16}$ "bottom 6' 3 $\frac{1}{2}$ "

Thickness of plates

crown 3 $\frac{1}{4}$ "

Description of longitudinal joint

Weld.

No. of strengthening rings

1

Working pressure of furnace by the rules

181.4

Combustion chamber plates: Material

S

Thickness: Sides

1 $\frac{1}{16}$ "

Back

2 $\frac{1}{32}$ "

Pitch of stays to ditto: Sides

9 $\frac{1}{2}$ " x 8 $\frac{1}{4}$ "

Back

9 $\frac{1}{2}$ " x 8"

Top

9 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ "

If stays are fitted with nuts or riveted heads

None

Working pressure by rules

193

Material of stays

S

Area at smallest part

1.46 #

Area supported by each stay

46 #

Working pressure by rules

185.2

End plates in steam space:

Material

S

Thickness

1 $\frac{1}{8}$ "

Pitch of stays

18" x 18"

How are stays secured

DOUBLE NUTS

Working pressure by rules

185

Area at smallest part

6.33 #

Area supported by each stay

324 #

Working pressure by rules

203

Material of Front plates at bottom

S

Thickness

1 $\frac{1}{32}$ "

Material of Lower back plate

S

Thickness

29 $\frac{1}{32}$ "

Greatest pitch of stays

14 $\frac{1}{4}$ " x 9 $\frac{1}{2}$ "

Working pressure of plate by rules

194

Diameter of tubes

3 $\frac{1}{2}$ "

Pitch of tubes

4 $\frac{3}{4}$ " x 4 $\frac{3}{4}$ "

Material of tube plates

S

Thickness: Front

1 $\frac{1}{32}$ "

Back

2 $\frac{1}{32}$ "

Mean pitch of stays

Pitch across wide water spaces

14 $\frac{1}{2}$ "

Working pressures by rules

181.2

Girders to Chamber tops: Material

S

Depth and

thickness of girder at centre

8 $\frac{1}{4}$ " x 9 $\frac{1}{16}$ " (2)

Length as per rule

Working pressure by rules

225

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

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

IS A DONKEY BOILER FITTED?

Lo.

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:—

2 top and 2 bottom end bolts & nuts, 2 main bearing and 1 set coupling bolts & nuts, 1 set each, Air, Circulating Feed & Bridge pump valves, 1 each, main and donkey check valves, 1 safety valve spring, Bolts & nuts assorted, and iron of various sizes.

The foregoing is a correct description,

FOR JOHN LEWIS & SONS, LTD.,

James J. Donald

Secy.

Manufacturer.

Dates of Survey while building
During progress of work in shops - - - 1920 April 27 May 1-5-14-17-21-24-27 June 21-24-29 July 7-15-30 Aug. 5-12-21-24 Sept. 2-10 Oct. 6-22 Nov. 5
During erection on board vessel - - - Dec. 8-9-10-13-15-23-29 1921 Jan. 24
Total No. of visits 31

Is the approved plan of main boiler forwarded herewith ✓

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 14.5.20 Slides 2.8.20 Covers 2.8.20 Pistons 2.8.20 Rods 9.4.20

Connecting rods 9.4.20 Crank shaft LEITH Thrust shaft 21.5.20 Tunnel shafts none Screw shaft 24.8.20 Propeller 6-12-20

Stern tube 6-12-20 Steam pipes tested 23-12-20 Engine and boiler seatings 8-12-20 Engines holding down bolts 15-12-20

Completion of pumping arrangements 29-12-20 Boilers fixed 15-12-20 Engines tried under steam 29-12-20

Completion of fitting sea connections 6-12-20 Stern tube 9-12-20 Screw shaft and propeller 9-12-20

Main boiler safety valves adjusted 29-12-20 Thickness of adjusting washers port 5/16" starboard 5/16"

Material of Crank shaft Steel Identification Mark on Do. LLOYDS 4539 G.A.H. Material of Thrust shaft Steel Identification Mark on Do.

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

Material of Steam Pipes Copper, 3 1/2" dia, N.6 B.W.4. Test pressure 360 lb/sq. in.

Is an installation fitted for burning oil fuel Lo.

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 "Blisside", Alm. 7.10. Rpt. No. 12452

General Remarks (State quality of workmanship, opinions as to class, &c. These engines and boiler

have been built under Special Survey in accordance with the Secretary's letter, the approved plan & the Rules requirements of the Society.

The material and workmanship are good & efficient.

The machinery has now been properly fitted in the vessel and tried under steam with satisfactory results and is eligible in my opinion to have the record of L.M.C. 1-21 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 1-21

H. Wilson

Cell

31/1/21

A. P. S.

The amount of Entry Fee £ 2 : 0

Special £ 20 : 15

Donkey Boiler Fee £ :

Travelling Expenses (if any) £ :

When applied for.

24-1-1921

When received.

2-3-21

Committee's Minute

Assigned

+ LMC 1-21

TUE FEB 1 1921

H. Wilson

Engineer Surveyor to Lloyd's Register of Shipping.



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