

REPORT ON MACHINERY.

No. 12674

Date of writing Report

19

When handed in at Local Office

24th Jan. 1921

Port of

Aberdeen

Received at London Office

FRI 28 JAN. 1921

No. in Survey held at

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

Master Benjamin Williams Built at Aberdeen

By whom built John Lewis & Sons Ltd (89)

When built 1920

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.M. Anderson

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 1/2" - 21" - 34" Length of Stroke 24" Revs. per minute 106

Dia. of Screw shaft as per rule 4 1/4" Material of Scrap Iron
as fitted 4 1/2" screw shaft

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

Length of stern bush 2' 6 1/2"

Dia. of Tunnel shaft as per rule 6.34 as fitted none

Dia. of Crank shaft journals as per rule 6.68 as fitted 4"

Dia. of Crank pin 4"

Size of Crank webs 12 3/4" x 4 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 1/2" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 2 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 3" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 @ 2 1/2" & 1 @ 2 1/2" in Boiler room In Holds, &c. 2 @ 2 1/2"

No. of Bilge Injections 3 sizes 3 Connected to condenser, or to circulating pump c.p. Is a separate Donkey Suction fitted in Engine room & size Yes 2 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 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 13'-0" dia. of boilers 13'-0" Length 10'-6" Material of shell plates S

Thickness 1 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 3/16" Pitch of rivets 8 1/4" Lap of plates or width of butt straps 1 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 4" x 1 1/4" No. and Description of Furnaces in each boiler 3 Plain. Material S Outside diameter 3'-3 1/2"

Length of plain part top 6'-10 1/16" bottom 6'-3 1/2" Thickness of plates crown 3/4" bottom 3/4" 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 1/16" Back 21/32" Top 1/16" Bottom 1/16"

Pitch of stays to ditto: Sides 9 1/2" x 8 1/4" Back 9 1/2" x 8" Top 9 1/2" x 4 1/2" If stays are fitted with nuts or riveted heads nuts. 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 1/8" Pitch of stays 18" x 18" How are stays secured DOUBLE NUTS WASHERS Working pressure by rules 185 Material of stays S

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 1/2" Material of Lower back plate S Thickness 29/32 Greatest pitch of stays 14 1/4" x 9 1/2" Working pressure of plate by rules 194

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S Thickness: Front 1 1/2" Back 24/32 Mean pitch of stays 9 1/2" x 9 1/2"

Pitch across wide water spaces 14 1/2" Working pressures by rules 181.2 Girders to Chamber tops: Material S Depth and

thickness of girder at centre 8 1/4" x 9 1/16" (2) Length as per rule 2 1/2" Distance apart 7 1/2" Number and pitch of stays in each 2 @ 9 1/2"

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?

So.

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:—

Two 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.,

Jan 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 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 ✓

Is the approved plan of donkey boiler forwarded herewith ✓

Dates of Examination of principal parts—Cylinders 14.5.20 Slides 2.8.20 Covers 2.8.20 Pistons 2.8.20 Rods 9.7.20 Connecting rods 9.7.20 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 main 5/16 Material of Crank shaft Steel Identification Mark on Do. 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, 3/2" dia, N.6 B.W.4. Test pressure 360 lbs. □

LLOYDS 1296A 21.5.20 LLOYDS 1326A 10/15 24.8.20

Is an installation fitted for burning oil fuel? So.

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 "Bliffside", Abn. 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

M. 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 27-1-1921 When received 2-3-21

W. Fraser

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE FEB 1 1921

Assigned + LMC 1-21

CERTIFICATE WRITTEN



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Abandon

The Surveys are requested not to write on or below the space for Committee's Minute. Certificate (if required) to be sent to