

REPORT ON MACHINERY.

No. 39118

pt. 4.

Received at London Office

WED. 17 SEP. 1919

1919 When handed in at Local Office 13/9/19 Port of Glasgow

Date, First Survey 19/6/18 Last Survey 9th Sept 1919

(Number of Vials) 49

Survey held at Glasgow

eg. Book. on the S.S. "T REVEAL" (Standard A)

Built at Glasgow By whom built Harland & Wolff (No 549) When built 1919

Engines made at Glasgow By whom made Harland & Wolff (No 551) when made 1919

Boilers made at Glasgow By whom made A & J Inglis (No 601) when made 1919

Registered Horse Power Owners Hain S.S. Co Ltd Port belonging to St Ives

Com. Horse Power as per Section 28 517 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &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 80 Dia. of Screw shaft as per rule 14 1/2" Material of screw shaft as fitted 15 1/2" 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

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 3/4" Dia. of Crank shaft journals as per rule 13 9/16" Dia. of Crank pin 14 1/2" Size of Crank webs 9" x 28" 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 1 Ballast 10 1/2" x 14" x 24" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room (2) 3 1/2" Stokes (2) 3 1/2" In Holds, &c. No 1-2-3-4-5 Two 3 1/2" each.

Tunnel well (1) 3 1/2"

No. of Bilge Injections 1 sizes 1 1/2" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & 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 Yes

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 Suctions 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

Dates of examination of completion of fitting of Sea Connections 5.6.19 of Stern Tube 5.6.19 Screw shaft and Propeller 5.6.19

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from upper Platform in engine room

OILERS, &c.—(Letter for record S) Manufacturers of Steel See Separate Report

Total Heating Surface of Boilers 7668 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single ended

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 7.6.19 No. of Certificate 14766

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 2 Spring loaded Area of each valve 9.62 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 1-9 Mean dia. of boilers Length Material of shell plates

Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams

long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

Per centages of strength of longitudinal joint rivets. Working pressure of shell by rules Size of manhole in shell

Size of compensating ring No. and Description of Furnaces in each boiler 3 Corrugated Material Steel Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

bottom Thickness of plates bottom

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules End plates in steam space:

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules Material of stays

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of Front plates at bottom

Diameter at smallest part Area supported by each stay Working pressure by rules Working pressure of plate by rules

Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If 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

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
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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 and bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts & nuts set of feed and bilge Pump Valve, assorted Iron, bolts & nuts etc., 1 screw shaft, 1 crank shaft, 1 Coupling bolts

For HARLAND & WOLFF, LTD.

The foregoing is a correct description,

Engine Manufacturer.

Dates of Survey while building	During progress of work in shops --	1918 June 19, 24, 27, July 1, 3, 5, 8, 10, 11, 24, 28, 30, 31, Aug 2, 19, 22, 26, 27, 28, Sept 9, 17, 19, 23, 26, Oct 2, 4, 11, 1919 May 2, 20, Dec 3, 9, 19, 19 Jan 14, Feb 19, Mar 6, 13, 19, 20, June 4, 11, 16, 27, July 9, 14, Aug 1, 7, 12, 19, Sept 2, 9.
Total No. of visits	H 9.	Is the approved plan of main boiler forwarded herewith --

Dates of Examination of principal parts	Cylinders 20.11.18	Slides 4.10.18	Covers 4.10.18	Pistons 20.11.18	Rods 20.11.18
Connecting rods	20.11.18	Crank shaft 6.3.19	Thrust shaft 14.1.19	Tunnel shafts 9.12.18	Screw shaft 9.12.18
Stern tube	14.1.19	Steam pipes tested 7.2.19	Engine and boiler seatings 6.6.19	Engines holding down bolts 12.8.19	
Completion of pumping arrangements	19.8.19	Boilers fixed 12.8.19	Engines tried under steam 19.8.19, 9.9.19		
Main boiler safety valves adjusted	19.8.19	Thickness of adjusting washers S 9/32 P 5/16, S 1/2 P 5/16, S 3/4 P 3/8			
Material of Crank shaft	Steel	Identification Mark on Do. 6.3.19 JE	Material of Thrust shaft	Steel	Identification Mark on Do. 29.11.18
Material of Tunnel shafts	Steel	Identification Marks on Do. *	Material of Screw shafts	Steel	Identification Marks on Do. 29.11.18
Material of Steam Pipes	Iron		Test pressure	540 lb.	

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

4391A	4742A	4662A	2206B	2241	4391A1
J.P.	J.P.	J.P.	WQH	WQH	2625
893	446	2693	410	418	J.P.

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 my opinion to be Classed + LMC 9-19.

It is submitted that this vessel is eligible for THE RECORD + LMC 9.19. F.D.

The amount of Entry Fee	£ 3	When applied for,	16/9/19
Special	£ 17	When received,	22/9/19
Donkey Boiler Fee	£ 51		
Chargable G.G.M.			
Travelling Expenses (if any)	£		

Committee's Minute GLASGOW 16 SEP 1919

Assigned L.M.C. 9, 19

MAINTENANCE

Engine Surveyor to Lloyd's Register of British & Foreign Shipping.



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