

# REPORT ON MACHINERY.

No. 39118

pt. 4.

Received at London Office

WED. 17 SEP. 1919

Date of writing Report

When handed in at Local Office

13/9/19 Port of Glasgow

in Survey held at Glasgow

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

on the

S.S. "T REVEAL" (Standard A)

(Number of Visits) 49

Master

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

Engines made at

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

Boilers made at

100 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 7/8" as fitted 15 1/2"

Material of screw shafts 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 Length of stern bush 5'-0 1/2"

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

Dia. of Tunnel shaft as per rule 13 3/4" as fitted 13 1/2"

Dia. of Crank shaft journals as per rule 13 9/16" as fitted 14 1/2"

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" 1 General 9 1/2" x 7" x 19" 1 Fuel 9 1/2" x 7" x 18"

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

In Engine Room (2) 3 1/2" Stokehold (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 Pump 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 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 Discharge

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 a platform

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 ft

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

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

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

Lloyd's Register  
FOW 796-0099

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 \_\_\_\_\_ Description of Safety Reg. Book. \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with casing 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 \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

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 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,  
*J. B. Wilson*  
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
	During erection on board vessel	Nov 20, Dec 3, 9, 19, 19, Jan 14, Feb 19, Mar 6, 13, 19, 20, May 4, 11, 16, 27, July 9, 14, Aug 1, 7, 12, 19, Sept 2, 9
	Total No. of visits	H 9

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	St 15 "5/16" 3 3/4 " P 5/16"	On bolts "5" P 1/2"	PT 1/2" only
Material of Crank shaft	Steel	Identification Mark on Do.	6.3.19 JE	Material of Thrust shaft	Steel
Material of Tunnel shafts	Steel	Identification Marks on Do.	*	Material of Screw shafts	Steel
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.	WGH	WGH	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.

*J. B. Wilson*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 3	When applied for	16/9/1919
Special	£ 45.17		22/9/1919
Donkey Boiler Fee	£ 51	When received	11/10/19
Chargable G.G.M.S.			18/11/19
Travelling Expenses (if any)	£		

Committee's Minute GLASGOW 16 SEP 1919

Assigned L.M.C. 9, 19  
Machinery Certificate  
17.9.19  
J.D.



Glasgow

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)