

Rpt. 4.

## REPORT ON MACHINERY.

Std. No. 28144  
No. 41257

Date of writing Report 28/7/21 When handed in at Local Office 30.7.21 Port of GLASGOW  
No. in Survey held at Glasgow Date, First Survey 21.4.20 Last Survey 6.7.1921  
Reg. Book. on the SS 'TILTHORN'  
Master Built at Sunderland By whom built W. Doxford & Sons Ltd (1914)  
Engines made at Glasgow By whom made Fairfield & Co. Ltd (1905)  
Boilers made at Sunderland By whom made Messrs W. Doxford & Sons (1912)  
Registered Horse Power Owners J. La. Britannia Port belonging to Bergen  
Nom. Horse Power as per Section 28 577 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 24" 44 1/2" 45" Length of Stroke 54" Revs. per minute 70 Dia. of Screw shaft as per rule 15 3/4" Material of screw shaft S  
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 — 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 — If two  
liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 40"  
Dia. of Tunnel shaft as per rule 13.93" Dia. of Crank shaft journals as per rule 14.61" Dia. of Crank pin 14 3/4" Size of Crank webs 9 3/4" Dia. of thrust shaft under  
collars 14 3/4" Dia. of screw 18" Pitch of Screw 18" No. of Blades 4 State whether moveable No Total surface 102 1/2"  
No. of Feed pumps 2 Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 5" Stroke 30" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines 3 Sizes of Pumps 1 1/2, 1, 10 1/2, 8, 2 1/2, 7 1/2, 5, 6 No. and size of Suctions, connected to both Bilge and Donkey pumps  
In Engine Room 4 @ 3 1/2" In Holds, &c. Nos 1, 2 holds, 2 @ 3 1/2", Nos 3, 2 @ 3 1/2", 2 @ 3"  
No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 4 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 None How are they protected —  
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 Yes Is it fitted with a watertight door Yes worked from Upper platform

BOILERS, &c.—(Letter for record) Manufacturers of Steel Spinning Mills  
Total Heating Surface of Boilers 8530 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Three single ended  
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 4.4.21, 11.6.21 No. of Certificate 3759, 3762, 3763  
Can each boiler be worked separately Yes Area of fire grate in each boiler 66 sq ft No. and Description of Safety Valves to  
each boiler 2 Spring valves Area of each valve 12.86 sq in Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
Smallest distance between boilers or uptakes and bunkers or woodwork way between Mean dia. of boilers 15-11 Length 12-0 Material of shell plates S  
Thickness 1 5/16 Range of tensile strength 28 1/2 - 32 3/8 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap & 1/2"  
long. seams 4.15 1/2 in Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 3/4 Lap of plates or width of butt straps 19"  
Per centages of strength of longitudinal joint rivets 87 plate 85 Working pressure of shell by rules 189 Size of manhole in shell 12 x 16  
Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Material S Outside diameter 4-5 3/4  
Length of plain part top 3 3/8 bottom 3 3/8 Thickness of plates crown 3 3/8 bottom 3 3/8 Description of longitudinal joint Welded No. of strengthening rings 1  
Working pressure of furnace by the rules 181 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 15/16  
Pitch of stays to ditto: Sides 7 1/2 x 7 1/2 Back 7 1/2 x 7 1/2 Top 7 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 217  
Material of stays S Area at smallest part 1.44 sq ft Area supported by each stay 62 sq ft Working pressure by rules 186 End plates in steam space:  
Material S Thickness 1 1/4 Pitch of stays 2 1/4 x 16 How are stays secured d. n. 1 1/2 Working pressure by rules 192 Material of stays S  
Area at smallest part 8.48 sq ft Area supported by each stay 348 sq ft Working pressure by rules 283 Material of Front plates at bottom S  
Thickness 29/32 Material of Lower back plate S Thickness 33/64 Greatest pitch of stays 14 1/8 Working pressure of plate by rules 181  
Diameter of tubes 2 1/2 Pitch of tubes 3 5/8 x 3 3/4 Material of tube plates S Thickness: Front 29/32 Back 3/4 Mean pitch of stays 7 1/2 x 7 1/2  
Pitch across wide water spaces 12 1/2 Working pressures by rules 201 Girders to Chamber tops: Material S Depth and  
thickness of girder at centre 9 1/2 x 1 1/2 Length as per rule 35 1/2 Distance apart 7 3/4 Number and pitch of stays in each 3. 7 3/4  
Working pressure by rules 185 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 —  
UPERHEATER. Type None 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 —

W1334-0027



IS A DONKEY BOILER FITTED?

No.

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:—

Two top end & two bottom end connecting rod bolts and nuts, two main bearing bolts, one set connecting bolts, one set fuel and high pump valves, assorted bolts & nuts Iron of various sizes

The foregoing is a correct description,

FOR THE FAIRFIELD SHIPBUILDING

AND ENGINEERING CO., LTD.

R. Shachau

ASSISTANT MANAGER.

Manufacturer.

WILLIAM DOXFORD & SONS, Limited.

Dates of Survey while building { During progress of work in shops - - - 1920. Apr 21. May 2. Aug 3. Oct 22. Nov 1. 3. 11. 16. 25. Dec 2.  
During erection on board vessel - - - 1921. Jan 7. 21. Feb 7. 19. 28. Mar 5. 7. 11. 21. 23. Apr 18. 25. May 2. 19. 24. 27. June 9. 21. July 6.  
Total No. of visits 27. 50

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 24. 4. 21 Slides 21. 3 21 Covers 2. 4. 21 Pistons 18. 4. 21 Rods 18. 4. 21

Connecting rods 18. 4. 21 Crank shaft 3. 3. 21 Thrust shaft 7. 2. 21 Tunnel shafts 2. 12 20 Screw shaft 13. 3. 21 Propeller 10. 8. 21

Stern tube 11. 3. 21 Steam pipes tested 18. 3. 21 17. 8. 21 Engine and boiler seatings - 17. 8. 21 Engines holding down bolts - 17. 8. 21

Completion of pumping arrangements 22. 8. 21 Boilers fixed 17. 8. 21 Engines tried under steam - 27. 8. 21

Completion of fitting sea connections 28. 4. 21 Stern tube 28. 4. 21 Screw shaft and propeller - 17. 8. 21

Main boiler safety valves adjusted 27. 8. 21 Thickness of adjusting washers P.C.B. P. 7/8 S. 7/8 Lint B. P. 7/8 S. 5/8 Star B. P. 1/2 S. 3/8

Material of Crank shaft S Identification Mark on Do. HORDS Material of Thrust shaft 9 Identification Mark on Do. HORDS

Material of Tunnel shafts S Identification Marks on Do. WGM Material of Screw shafts S Identification Marks on Do. WGM

Material of Steam Pipes Copper Test pressure 400 lbs 9

Is an installation fitted for burning oil fuel No 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 410 If so, state name of vessel "Ronsdalshorn"

General Remarks (State quality of workmanship, opinions as to class, &c. These engines have been built

under Special Survey. The workmanship & material are of good quality.

These engines have now been shipped to Sunderland at which port they will be fitted on board.

The machinery of this vessel has been built under special survey. The materials & workmanship are sound and good and under the vessel slight in any opinion to have need of + L.M.C. 8. 21

W. H. H. H.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8. 21. F.D. C.L.

Roll 1/9/21

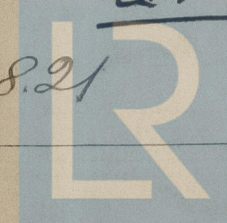
The amount of Entry Fee ... £ 6 : : When applied for. 30 AUG 1921  
Special ... £ 103 : 12 :  
Donkey Boiler Fee ... £ 41 : 10 : 10 When received. 31 AUG 1921  
Travelling Expenses (if any) ... £ 62 : 6 :  
Committee's Minute GLASGOW 2 - AUG 1921

Assigned Deferred

W. H. H. H. Engineer Surveyor to Lloyd's Register of Shipping.

MACHINERY CERT

WRITTEN FRI. 2 SEP. 1921 + L.M.C. 8. 21



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