

## REPORT ON MACHINERY.

No. 26994  
TUE. DEC. 9-1913

Date of writing Report 2<sup>nd</sup> Nov. 1913 When handed in at Local Office 8-12-1913 Port of Hull

No. in Survey held at Hull Date, First Survey Aug 21<sup>st</sup> Last Survey Nov 29<sup>th</sup> 1913  
Reg. Book 4156 on the steamer "T.R. FERENS" (Number of Visits 19)

Master T. J. J. J. Built at Hull By whom built Cochrane & Sons Ltd Tons { Gross 307  
Net 124  
When built 1913

Engines made at Hull By whom made Amos & Smith Ltd when made 1913

Boilers made at Hull By whom made Amos & Smith Ltd when made 1913

Registered Horse Power 90 Owner Petering & Haldane Ltd Port belonging to Hull

Nom. Horse Power as per Section 28 90 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 13-22 $\frac{3}{4}$ -37 Length of Stroke 26 Revs. per minute 7.94 Dia. of Screw shaft 7 $\frac{1}{2}$  Material of screw shaft 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 in the propeller boss yes If the liner is in more than one length are the joints burned yes 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 yes Length of stern bush 3'-0"

Dia. of Tunnel shaft 7 $\frac{1}{2}$  Dia. of Crank shaft journals 7 $\frac{3}{4}$  Dia. of Crank pin 7 $\frac{1}{2}$  Size of Crank web 14x4 $\frac{3}{4}$  Dia. of thrust shaft under collars 7 $\frac{1}{2}$  Dia. of screw 9'-9" Pitch of Screw 11'-3" No. of Blades 4 State whether moveable no Total surface 34 $\frac{5}{8}$

No. of Feed pumps 1 Diameter of ditto 2 $\frac{7}{8}$  Stroke 12" Can one be overhauled while the other is at work yes

No. of Bilge pumps 1 Diameter of ditto 2 $\frac{7}{8}$  Stroke 12" Can one be overhauled while the other is at work yes

No. of Donkey Engines one Sizes of Pumps 6"x4 $\frac{1}{2}$ "x6" duplex No. and size of Suctions connected to both Bilge and Donkey pumps Two 2" one for d. one aft.

In Engine Room Two 2" one for d. one aft. In Holds, &c. Three - 2" Fishroom Forepeak

Slushwell 2" ejector from all bilges

No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 2" ejector

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 Hold suction How are they protected Wood casing

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 29.9.13 of Stern Tube 29.9.13 Screw shaft and Propeller 29.9.13

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from yes

**BOILERS, &c.—(Letter for record S)** Manufacturers of Steel Stahlwerk Schütz-Krauss, Aachen

Total Heating Surface of Boilers 1511 Is Forced Draft fitted no No. and Description of Boilers One single-ended

Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 11.11.13 No. of Certificate 2034

Can each boiler be worked separately yes Area of fire grate in each boiler 48 No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 4 $\frac{9}{16}$  Pressure to which they are adjusted 200 lbs. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 7" Mean dia. of boiler 13-11 $\frac{3}{8}$  Length 10-7 $\frac{3}{4}$  Material of shell plates S

Thickness 1 $\frac{3}{16}$  Range of tensile strength 29-33 Are the shell plates welded or flanged yes Descrip. of riveting: cir. seams U.R.L.

long. seams D.B.S. rivet Diameter of rivet holes in long. seams 1 $\frac{1}{4}$  Pitch of rivets 8 $\frac{3}{4}$  Lap of plates or width of butt straps 17 $\frac{3}{4}$

Per centages of strength of longitudinal joint 87.83 Working pressure of shell by rules 200 lbs. Size of manhole in shell 16x12

Size of compensating ring 40x30x1 $\frac{3}{16}$  No. and Description of Furnaces in each boiler 3 plain Material S Outside diameter 3'-48"

Length of plain part 6'-6" Thickness of plates 1 $\frac{3}{16}$  Description of longitudinal joint welded No. of strengthening rings yes

Working pressure of furnace by the rules 206 Combustion chamber plates: Material S Thickness: Sides 1 $\frac{1}{16}$  Back 23 Top 11 Bottom 13

Pitch of stays to ditto: Sides 9 $\frac{3}{4}$ x7 $\frac{3}{4}$  Back 9 $\frac{3}{4}$ x8 $\frac{1}{2}$  Top 7 $\frac{3}{4}$ x9 $\frac{1}{2}$  If stays are fitted with nuts or riveted heads nut Working pressure by rules 210

Material of stays S Diameter at smallest part 2.397 Area supported by each stay 81.81 Working pressure by rules 217 End plates in steam space: Material S Thickness 1 $\frac{3}{32}$  Pitch of stays 17 $\frac{3}{4}$ x17 $\frac{3}{4}$  How are stays secured D.B.S. rivet Working pressure by rules 201 Material of stays S

Area at smallest part 7.74 Area supported by each stay 315.0625 Working pressure by rules 238 Material of Front plates at bottom S

Thickness 1" Material of Lower back plate S Thickness 29 Greatest pitch of stays 13 $\frac{3}{4}$ x9 $\frac{5}{8}$  Working pressure of plate by rules 217

Diameter of tubes 3 $\frac{1}{2}$  Pitch of tubes 5x4 $\frac{3}{4}$  Material of tube plates S Thickness: Front 1" Back 27 Mean pitch of stays 12 $\frac{1}{2}$ x4 $\frac{3}{4}$

Pitch across wide water spaces 13 $\frac{3}{4}$  Working pressures by rules 203 Girders to Chamber tops: Material S Depth and thickness of girder at centre 9 $\frac{3}{4}$ x2 Length as per rule 36" Distance apart 9 $\frac{1}{2}$  Number and pitch of stays in each 3 at 7 $\frac{3}{4}$

Working pressure by rules 209 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 yes

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear yes



IS A DONKEY BOILER FITTED?

no.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Two each top & bottom end connecting rod bolts & nuts, two main bearing bolts and nuts, one set of coupling bolts & nuts, one set each feed & bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts, etc.

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

Managing Director.

Manufacturer.

Dates of Survey while building { During progress of work in shops --  
During erection on board vessel --  
Total No. of visits 19

1913. Aug 21 Sep 13. 27. 29 Oct 7. 16. 17. 21. 28. 30 Nov 1. 4. 11. 18. 19.

Is the approved plan of main boiler forwarded herewith

yes

Dates of Examination of principal parts—Cylinders 7.10.13. Slides 7.10.13. Covers 7.10.13. Pistons 7.10.13. Rods 4.11.13. Connecting rods 4.11.13. Crank shaft 1.11.13. Thrust shaft 4.11.13. Tunnel shafts Screw shaft 27.9.13. Propeller 27.9.13. Stern tube 27.9.13. Steam pipes tested 24.11.13. Engine and boiler seatings 29.9.13. Engines holding down bolts 24.11.13. Completion of pumping arrangements 28.11.13. Boilers fixed 24.11.13. Engines tried under steam 26.11.13. Main boiler safety valves adjusted 26.11.13. Thickness of adjusting washers AV  $\frac{3}{8}$  bare. FV  $\frac{1}{32}$ . Material of Crank shaft S. Identification Mark on Do. 1189. Material of Thrust shaft S. Identification Mark on Do. 1189. Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts S. Identification Marks on Do. 1189. Material of Steam Pipes Copper solid drawn. Test pressure 400lbs. hyd. pressure. Is an installation fitted for burning oil fuel 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 *Lord Londesborough*.

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

The engines & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials and workmanship are sound and good. The Boiler tested by hydraulic pressure and with the engines secured on board and tested under steam. They are now in good order and safe-working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of +LMC 11.12 in the Register book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 11.13.

The amount of Entry Fee ... £ 1 : : When applied for, 8/12 1913  
Special ... £ 13 : 10 : 0  
Donkey Boiler Fee ... £ : : When received, 31/12/13  
Travelling Expenses (if any) £ : 4 : 1

Committee's Minute FRI. DEC. 12. 1913

Assigned

MACHINERY CERTIFICATE  
WRITTEN



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Foundation