

## REPORT ON MACHINERY

No. 15852

Received at London Office

FRI. 30 DEC. 1920

Date of writing Report 20<sup>th</sup> Nov 1920 When handed in at Local Office 2/12/1920 Port of West Hartlepool  
No. in Survey held at West Hartlepool Date, First Survey 30<sup>th</sup> Sept/19 Last Survey 16<sup>th</sup> Nov 1920  
Reg. Book. 81334 on the steel screw steamer "Rigi" (Number of Visits) 1  
Master Chrilsen Built at Middlesbro' By whom built The Furness S. B. & Co. Ltd. Tons { Gross 5826  
Net 3618  
When built 1920  
Engines made at Hartlepool By whom made Mac-Richardson, Wetzguth & Co. Ltd. when made 1920  
Boilers made at Hartlepool By whom made Mac-Richardson, Wetzguth & Co. Ltd. when made 1920  
Registered Horse Power ✓ Owners Camillo Petron & Co. Port belonging to Christiania  
Nom. Horse Power as per Section 28 569 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yrs

ENGINES, &c.—Description of Engines Triple Expansion (Inverted Gls.) No. of Cylinders Three No. of Cranks Three  
Dia. of Cylinders 24, 45, 75 Length of Stroke 51 Revs. per minute 73 Dia. of Screw shaft as per rule 15.01 Material of screw shaft Iron  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yrs. Is the after end of the liner made water tight in the propeller boss Yrs. 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 Yrs. If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 5-2  
Dia. of Tunnel shaft as per rule 13.69 Dia. of Crank shaft journals as per rule 14.37 Dia. of Crank pin 15 Size of Crank webs 9 3/8 x 22 5/8 Dia. of thrust shaft under collars 15 1/4 Dia. of screw 18-0 Pitch of Screw 18-2 No. of Blades four State whether moveable no Total surface 100  
No. of Feed pumps no Diameter of ditto 8 Stroke 21 Can one be overhauled while the other is at work Yrs.  
No. of Bilge pumps no Diameter of ditto 4 1/4 Stroke 24 Can one be overhauled while the other is at work Yrs.  
No. of Donkey Engines no Sizes of Pumps General Service 6 x 8 inch No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room one 3/2 inch, no 3/2 inch (three 3/2 inch in bilge) one 2 1/2 inch and In Holds, &c. two 3/2 inch in each Hold.  
No. of Bilge Injections no sizes 8 Connected to condenser, or to circulating pump Yrs. Is a separate Donkey Suction fitted in Engine room & size Yrs 3/2  
Are all the bilge suction pipes fitted with roses Yrs. Are the roses in Engine room always accessible Yrs. Are the sluices on Engine room bulkheads always accessible Yrs.  
Are all connections with the sea direct on the skin of the ship Yrs. Are they Valves or Cocks both  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yrs. 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 Yrs. Are the Blow Off Cocks fitted with a spigot and brass covering plate Yrs.  
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 Yrs.  
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yrs.  
Is the Screw Shaft Tunnel watertight Yrs. Is it fitted with a watertight door Yrs worked from Yrs platform

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel John Spencer & Sons Ltd, The Shipbuilding & Engineering Co. Ltd.  
Total Heating Surface of Boilers 8491 Is Forced Draft fitted Yrs. No. and Description of Boilers Three single ended 4000 H.P. built  
Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 16/8/20 No. of Certificate 3580  
Can each boiler be worked separately Yrs. Area of fire grate in each boiler 62.55 No. and Description of Safety Valves to each boiler no, direct opening Area of each valve 12.54 Pressure to which they are adjusted 185 Are they fitted with easing gear Yrs.  
Smallest distance between boilers or uptakes and bunkers or woodwork 2-3 Mean dia. of boilers 15-6 1/2 Length 12-0 Material of shell plates steel  
Thickness 1 1/4 Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 1/2 x 8  
long. seams 5/8 x 8 Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 1/2 Lap of plates or width of butt straps 1 1/2  
Per centages of strength of longitudinal joint 85.8% Working pressure of shell by rules 181 Size of manhole in shell 13 x 16 1/2  
Size of compensating ring 8 x 1 1/4 No. and Description of Furnaces in each boiler Three Reighton Material steel Outside diameter 49 3/4  
Length of plain part top 19 Thickness of plates bottom 32 Description of longitudinal joint weld. No. of strengthening rings —  
Working pressure of furnace by the rules 190 Combustion chamber plates: Material steel Thickness: Sides 19 Back 11 Top 19 Bottom 23  
Pitch of stays to ditto: Sides 7 1/2 x 6 5/8 Back 8 1/2 x 8 Top 7 1/2 x 6 5/8 If stays are fitted with nuts or riveted heads Riveted heads Working pressure by rules 184  
Material of stays steel Area at smallest part 1.5 Area supported by each stay 66 Working pressure by rules 180 End plates in steam space: Material steel Thickness 1 1/8 Pitch of stays 9 1/2 x 15 3/4 How are stays secured 57N. Working pressure by rules 180.5 Material of stays steel  
Area at smallest part 6 1/2 x 5 5/8 Area supported by each stay 19 1/2 x 15 3/4 Working pressure by rules 207.5 Material of Front plates at bottom steel  
Thickness 1 1/2 Material of Lower back plate steel Thickness 1 1/2 Greatest pitch of stays 13 x 8 Working pressure of plate by rules 186  
Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/4 Material of tube plates steel Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stays 9 3/8  
Pitch across wide water spaces 1 1/2 Working pressures by rules 185 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 3/4 x 1 1/2 Length as per rule 32 1/4 Distance apart 4 1/2 Number and pitch of stays in each three 6 5/8  
Working pressure by rules 180 1/2 Steam dome: description of joint to shell — % 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?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

1 screw shaft & propeller. 1 pair of main bearing bolts.  
1 pair of top end bolts. 1 pair of bottom end bolts. 1 set of coupling bolts & nuts. 1 set  
of pump valves & seats. 1 set of bilge pump valves. 1 main & auxiliary feed check  
valve. Assorted bolts & nuts. Rod & sheet steel.

The foregoing is a correct description,

FOR RICHARDSONS, WESTGARTH & CO. LIMITED.

*L. D. M. J. P.*

GENERAL MANAGER.

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- 1919. Sep 30. Oct 8. 11. 16. 27. Nov 10. 25. Dec 8. 17. 19. 20. 1920. Jan 24. Feb 2. 28. Mar 23. 31. Apr 16.  
During erection on board vessel -- 26. 28. May 8. 10. 11. 17. 18. 21. 26. June 2. 2. 8. 9. 11. 14. 16. 17. 18. 22. 24. 26. 28. 29. July 2. 6. 7. 8. 9. 11. 14. 19. 21. 26. 30. Aug 10. 12. 16. 18. 24. 25. 26. 30. Sep 1. 3. 6. 8. 10. 13. 15. 16. 22. 27. 30. Oct 1. 6. 7. 8. 13. 18. 20. 21. 22. 27. 28. Nov 1. 4. 5. 8. 9. 11. 12. 13. 16.  
Total No. of visits 93 + 15. { 1921. Jan 5. 11. 12. 17. 21. 25. 28. }  
at Ind. 1920. Oct 1. 1920. Aug 25. Nov 24. 26. Dec 6. 10. 15. 20.

Is the approved plan of main boiler forwarded herewith ☒ no  
forwarded with Report 1920

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 8/8/20 5/9/20 Slides 27/10/20 22/11/20 Covers 22/11/20 Pistons 10/8/20 Rods 8/10/20 3/6/20  
Connecting rods 19/1/20 17/2/20 Crank shaft 30/1/20 18/1/20 Thrust shaft 23/3/20 16/3/20 Tunnel shafts 8/6/20 26/6/20 Screw shaft 8/1/20 1/9/20 Propeller 24/5/20  
Stern tube 18/8/20 Steam pipes tested 27/10/20 28/10/20 Engine and boiler seatings 14/10/20 Engines holding down bolts 1/11/20  
Completion of pumping arrangements 26. 1. 21. Boilers fixed 5/11/20 Engines tried under steam 16/11/20  
Completion of fitting sea connections 25. 8. 20 Stern tube 14/10/20 Screw shaft and propeller 20/10/20  
Main boiler safety valves adjusted 16/11/20 Thickness of adjusting washers 5/16 5/16 3/8 5/16 3/8 3/8  
Material of Crank shaft steel Identification Mark on Do. (6172) (7/10/20) Material of Thrust shaft steel Identification Mark on Do. (6172) (7/10/20)  
Material of Tunnel shafts iron Identification Marks on Do. (6172) (8/10/20) Material of Screw shafts iron Identification Marks on Do. (6172) (8/10/20)  
Material of Steam Pipes Lap mild iron Test pressure 540 lb  
Is an installation fitted for burning oil fuel Yes. Is the flash point of the oil to be used over 150°F. Yes.  
Have the requirements of Section 49 of the Rules been complied with Yes.  
Is this machinery duplicate of a previous case yes. If so, state name of vessel "Remares" No. 1. 1. 1.

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

The Engines, Boilers & Auxiliary Machinery of this Vessel have been constructed under special survey the material & workmanship sound & good. The Boilers & Steam pipes have been tested by Hydraulic pressure in accordance with the Rules. The whole of the propelling machinery worked satisfactorily under steam raised from cold, the Safety Valves have been adjusted to their working pressure & Easing gear fitted.

The vessel has proceeded to the Builders yard for completion. To complete the survey for record of \* LMC 180th FD the oil burning installation is to be fitted also the pumping arrangement tried & the Electric Light installation to be fitted & steering Engine & gear fitted & tried

The oil pumping and burning arrangement & also the general pumping arrangement satisfactorily completed (L.C. 1. 21.) Fitted for oil fuel 1. 21. G.P. above 150°F.

The amount of Entry Fee ... £ 3 : : : When applied for,  
Special ... £ 48 : 9/ : : 2/24/20.  
Donkey Boiler Fee ... £ : : : When received,  
Travelling Expenses (if any) £ : : : 14. 12. 1920.

A. Lloyd. W. C. Lewis  
Engineer Surveyor to Lloyd's Register of Shipping.

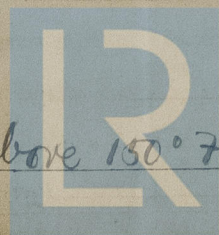
Committee's Minute

TUE. FEB 22 1921

Assigned

+ LMC 1, 21 G.D.  
Fitted for oil fuel 1, 21, G.P. above 150°F.

CERTIFICATE WRITTEN.



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Foundation