

REPORT ON MACHINERY

No. 17901

WED. 26 OCT. 1921

Received at London Office

Date of writing Report 28 July 1921 When handed in at Local Office 21 Oct 1921 Port of Greenwich  
No. in Survey held at Greenwich Date, First Survey 11th March 1920 Last Survey 13th October 1921  
Reg. Book. on the Steel steamer Doricstar (Number of Visits 132)  
Master Built at San Diego By whom built Lathgrows Ltd When built 1921  
Engines made at Manchester By whom made Metropolitan Vickers & Co Ltd when made 1921  
Boilers made at Greenwich By whom made John S Kincaid & Co Ltd when made 1921  
Registered Horse Power 1398 N.H.P. Owners British Liners Ltd 1920 Ltd Managers Port belonging to London  
Shaft Horse Power at Full Power 5250 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines Latent Steam Turbine D.R. Sear No. of Turbines Two

Diameter of Rotor Shaft Journals, H.P. L.P. Diameter of Pinion Shaft  
Diameter of Journals Distance between Centres of Bearings Diameter of Pitch Circle  
Diameter of Wheel Shaft Distance between Centres of Bearings Diameter of Pitch Circle of Wheel  
Width of Face Diameter of Thrust Shaft under Collars 17 1/2" Diameter of Tunnel Shaft as per rule 16.05" as fitted 16.4"  
No. of Screw Shafts 2 Diameter of same as per rule 17.15 as fitted 18 1/2" Diameter of Propeller 18.6" Pitch of Propeller 18.6"  
No. of Blades 4 State whether Moveable Yes Total Surface 120 sq ft Diameter of Rotor Drum, H.P. L.P. Astern  
Thickness at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbine 3060 Propeller 81.5

PARTICULARS OF BLADING.

H.P.

L.P.

ASTERN.

	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION									
2ND									
3RD									
4TH									
5TH									
6TH									
7TH									
8TH									

No. and size of Feed pumps Two 10 1/2" - 26" and 8" - 21"  
No. and size of Bilge pumps One 7" - 8"  
No. and size of Bilge suction in Engine Room One 5 1/2" DONKEYS 12" - 24" - 8" - 18" - 7" - 8" and 8" - 18" but not put in Hold, &c. Forward 5 1/2" and 2 1/2"  
No. of Bilge Injections One sizes 1 1/2" Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size 5 1/2"  
Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room 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 stowhold 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 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 2nd Staircase

BOILERS, &c.—(Letter for record 2) Manufacturers of Steel Colville & Sons, Glasgow

Total Heating Surface of Boilers 21569 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended  
Working Pressure 200 lb Tested by hydraulic pressure to 350 lb Date of test 21-22/4/21 4-15-25 No. of Certificate 1543-1549-1553  
Can each boiler be worked separately Yes Area of fire grate in each boiler 68.35 sq ft No. and Description of Safety Valves to each boiler Two Spring Are they fitted with easing gear Yes  
Smallest distance between boilers or uptakes and bunkers or woodwork 24" Mean dia. of boilers 17.0" Length 12.6" Material of shell plates Mild  
Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged Yes Descrip. of riveting: rivets, seams all rivet 24"  
long, seams all rivet 24" Diameter of rivet holes in long, seams 1 1/2" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 22"  
Per centages of strength of longitudinal joint rivets 85-42 plates 85-36 Working pressure of shell by rules 201 lb Size of manhole in shell 16" - 12"  
Size of compensating ring Flanged 1 1/2" No. and Description of Furnaces in each Boiler 4 Deighm Material Mild Outside diameter 45 1/2"  
Length of plain part top crown bottom Thickness of plates 10/16 Description of longitudinal joint welded No. of strengthening rings Compound  
Working pressure of furnace by the rules 221 lb Combustion chamber plates: Material Mild Thickness: Sides 11/16 Back 23/32 Top 11/16 Bottom 13/16  
Pitch of stays to ditto: Sides 8" - 9 7/8" Back 9" - 5 1/4" Top 8" - 9 7/8" If stays are fitted with nuts or riveted heads Yes Working pressure by rules 201 lb  
Material of stays Mild Diameter at smallest part 2.03" Area supported by each stay 79" Working pressure by rules 232 lb End plates in steam space  
Material Mild Thickness 17/16 Pitch of stays 23" - 19 1/4" How are stays secured all rivet Working pressure by rules 202 lb Material of stays Mild  
Diameter at smallest part 9.82" Area supported by each stay 450" Working pressure by rules 212 lb Material of Front plates at bottom Mild  
Thickness 1/32" Material of Lower back plate Mild Thickness 14/16 Greatest pitch of stays 15 1/2" Working pressure of plate by rules 204 lb  
Diameter of tubes 2 1/2" Pitch of tubes 34" - 35" Material of tube plates Mild Thickness: Front 17/32 Back 23/32 Mean pitch of stays 9.18"  
Pitch across wide water spaces 13 1/2" Working pressures by rules 207 lb Girders to Chamber tops: Material Mild 201 lb Depth and  
thickness of girder at centre 10 1/2" - 14 1/2" Length as per rule 40 9/16 Distance apart 8" Number and pitch of stays in each three 9 7/8"  
Working pressure by rules 201 lb Steam dome: description of joint to shell 0% of strength of joint Diameter  
Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets  
Working pressure of shell by rules Crown plates: Thickness How stayed

W468-0017



SUPERHEATER Type \_\_\_\_\_ Date of Approval of Plan \_\_\_\_\_ Tested by Hydraulic Pressure to \_\_\_\_\_  
Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler  
Date of Test \_\_\_\_\_ Pressure to which each is adjusted \_\_\_\_\_ Is Easing Gear fitted \_\_\_\_\_  
Diameter of Safety Valve \_\_\_\_\_

IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— See Report attached hereto  
Spare gear complete as per Rule

The foregoing is a correct description,  
FOR JOHN G. KINCAID & COY., LIMITED. Manufacturer.  
Robert Green

Dates of Survey while building  
(1920) Mar. 11. 17. 25. 29. Apr. 9. 13. 15. 23. May 11. 20. June 14. 17. Aug. 19. 20. 23. 25. 26. 27. 30. Sept. 4. 7. 10. 13. 15. 17. 22. 23. 27. Oct. 3. 5. 8. 13. 20. 24. 27. 28. 29. (1921) Jan. 13. 19. 21. 23. 26. 27. 28. Feb. 1. 4. 7. 8. 10. 14. 16. 18. 20. 23. 25. 27. 28. Mar. 1. 3. 4. 7. 9. 11. 13. 17. 18. 21. 22. 23. 24. 24. Apr. 1. 5. 6. 7. 8. 13. 13. 15. 18. 19. 20. 22. 23. 26. 27. 29. May. 2. 3. 4. 6. 9. 11. 13. 16. 17. 19. 20. 23. 26. 27. 29. 30. June 1. 2. 3. 6. 7. 9. 14. 15. 16. 17. 20. 22. 24. 29. July 19. 28. Aug. 2. 3. 5. 9. Sept. 2. Oct. 10. 13.  
During progress of work in shops --  
During erection on board vessel --  
Total No. of visits 139.

Is the approved plan of main boiler forwarded herewith yes  
" " " donkey " " " same  
" " " " " " see Report attached hereto  
Dates of Examination of principal parts—Casings Rotors Blading Gearing  
Rotor shaft Thrust shaft 20/5/20 Tunnel shafts 22/2/21 Screw shaft 1/2/21 Propeller 17/12/20  
Stern tube 10/2/21 Steam pipes tested 18/2/21 Engine and boiler seatings 18/4/21 Engines holding down bolts 9/6/21  
Completion of pumping arrangements 15/4/21 Boilers fixed 24/5/21 Engines tried under steam 14/6/21  
Main boiler safety valves adjusted 15/4/21 Thickness of adjusting washers Pat T 2 1/2 in A 2 1/2 in Cal F 4 1/2 A 1 1/2 in U 1 1/2 in F 2 1/2 in A 2 1/2 in  
Material and tensile strength of Rotor shaft see Report attached hereto Identification Mark on Do. \_\_\_\_\_  
Material and tensile strength of Pinion shaft see Report attached hereto Identification Mark on Do. \_\_\_\_\_  
Material of Wheel shaft Identification Mark on Do. \_\_\_\_\_ Material of Thrust shaft 1 Steel Identification Mark on Do. 394  
Material of Tunnel shafts 1 Steel Identification Marks on Do. 394 Material of Screw shafts 1 Steel Identification Marks on Do. 394  
Material of Steam Pipes Iron Test pressure 600 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 a duplicate of a previous case no If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c.) Workmanship good.  
The machinery and boilers of this steamer have been examined under special survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification of L.M.C.  
10.21. Fitted for oil fuel 10.21. F.P. above 150° in the Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD. L.M.C.-10.21. F.D. C.L.  
2 steam turbines geared to one screw shaft.  
Fitted for oil fuel 10.21. F.P. above 150°.  
Shipping £ 18.15.10 Rating as made £ 28.3.9  
Bunker £ 101.11.0

The amount of Entry Fee ... £ :  
Special ... £ 148 : 10  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) £ :  
When applied for, 14/10/1921  
When received, 3.11.1921

James Jones  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 25 OCT 1921  
Assigned + LMC 10.21. FD  
Fitted for oil fuel 10.21 F.P. above 150°