

Rpt. 4.

## REPORT ON MACHINERY.

No. 64211

Received at London Office

SAT. MAY 17. 1913

Date of writing Report 8<sup>th</sup> May 1913 When handed in at Local Office MAY 8 1913 Port of NEWCASTLE - ON - TYNENo. in Survey held at Newcastle Date, First Survey 30<sup>th</sup> Nov 1911 Last Survey 5<sup>th</sup> May 1913  
Reg. Book. on the S. S. "Kareos" (Number of Visits 81

Master Built at Newcastle By whom built Palmes &amp; Co. When built 1913

Engines made at Newcastle By whom made Palmes &amp; Co. No. 825 when made 1913

Boilers made at Newcastle By whom made S. when made 1913

Registered Horse Power Owners Bucknall Steamship Lines Ltd. Port belonging to North Shields

Nom. Horse Power as per Section 28 601 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &amp;c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 25 $\frac{1}{2}$ " - 43 $\frac{1}{2}$ " - 76" Length of Stroke 51" Revs. per minute 73 Dia. of Screw shaft as per rule 15 $\frac{1}{2}$ " Material of screw shaft as fitted 16 $\frac{3}{4}$ " 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 6' 0"

Dia. of Tunnel shaft as per rule 14 $\frac{1}{2}$ " Dia. of Crank shaft journals as per rule 14 $\frac{1}{2}$ " Dia. of Crank pin 15 $\frac{1}{2}$ " Size of Crank webs 21 $\frac{3}{4}$ " Dia. of thrust shaft undercollars 15 $\frac{1}{4}$ " Dia. of screw 18' 6" Pitch of Screw 17' 9" No. of Blades 4 State whether moveable Yes Total surface 115 $\frac{1}{4}$ "No. of Feed pumps 2 (Leis) Diameter of ditto 10 $\frac{1}{2}$ " x 8" Stroke 24" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 4 $\frac{1}{2}$ " Stroke 27" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 10" x 10" x 10" + 10" x 6" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3 $\frac{1}{2}$ " In Holds, &c. No. 1 hold 2-3 $\frac{1}{2}$ " No. 2 hold 2-3 $\frac{1}{2}$ "No. 3 hold 2-3 $\frac{1}{2}$ " No. 4 hold 2-3 $\frac{1}{2}$ " No. 5 hold well 1-3 $\frac{1}{2}$ " Tunnel Well 1-3 $\frac{1}{2}$ "No. of Bilge Injections 1 sizes 8 $\frac{1}{2}$ " Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 6"

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 Yes

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 19-3-13 of Stern Tube 19-3-13 Screw shaft and Propeller 19-3-13

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

BOILERS, &amp;c.—(Letter for record S) Manufacturers of Steel J. &amp; S. &amp; Co. &amp; Palmes &amp; Co.

Total Heating Surface of 2 Boilers 5440 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers 2, 3 single-ended

Working Pressure 220 lbs. Tested by hydraulic pressure to 440 lbs. Date of test 18-12-12 No. of Certificate 8424

Can each boiler be worked separately Yes Area of fire grate in each boiler 73.75 sq. ft. No. and Description of Safety Valves to

each boiler 2, Spring Area of each valve 8.29 sq. in. Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers on uptakes and bunkers on woodwork 9' 0" Mean dia. of boilers 55 $\frac{1}{2}$ " Length 12' 0" Material of shell plates SteelThickness 1 $\frac{1}{16}$ " Range of tensile strength 32,350 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 8 Laplong, seams 8 BS Y Rivet Diameter of rivet holes in long, seams 1 $\frac{1}{32}$ " Pitch of rivets 10" Lap of plates on width of butt straps 23"

Per centages of strength of longitudinal joint rivets 25 Working pressure of shell by rules 258 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring McNeil No. and Description of Furnaces in each boiler 4, Inclined Material Steel Outside diameter 43 $\frac{1}{2}$ "Length of plain part top Thickness of plates crown 2 $\frac{1}{32}$ " Description of longitudinal joint Welded No. of strengthening ringsWorking pressure of furnace by the rules 245 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1 $\frac{1}{16}$ " Back 2 $\frac{1}{32}$ " Top 1 $\frac{1}{16}$ " Bottom 1 $\frac{1}{8}$ "Pitch of stays to ditto: Sides 8 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ " Back 8 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " Top 8 $\frac{1}{2}$ " x 7 $\frac{3}{4}$ " If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 246 lbs. End plates in steam space:

Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 74.3" Working pressure by rules 234 lbs. Material of stays Steel

Material Steel Thickness 1 $\frac{1}{32}$ " Pitch of stays 23" x 17" How are stays secured Sn. & W. Working pressure by rules 260 lbs. Material of Front plates at bottom SteelDiameter at smallest part 9.82" Area supported by each stay 391" Working pressure by rules 224 lbs. Material of Lower back plate Steel Thickness 1 $\frac{1}{16}$ " Greatest pitch of stays 14"Thickness 1" Material of Lower back plate Steel Thickness 1 $\frac{1}{16}$ " Working pressure of plate by rules 224 lbs. Working pressure of plate by rules 224 lbs.Diameter of tubes 2 $\frac{1}{2}$ " Pitch of tubes 3 $\frac{3}{4}$ " x 3 $\frac{5}{8}$ " Material of tube plates Steel Thickness: Front 1" Back 7 $\frac{1}{8}$ " Mean pitch of stays 7 $\frac{3}{8}$ "

Pitch across wide water spaces 13" Working pressures by rules 228 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 9 $\frac{3}{4}$ " x 15 $\frac{1}{8}$ " Length as per rule 33 $\frac{1}{8}$ " Distance apart 8 $\frac{5}{8}$ " Number and pitch of stays in each 3-7 $\frac{3}{4}$ "

Working pressure by rules 227 lbs. Superheater or Steam chest; how connected to boiler None 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  
488-0152



*Manufacturers of Steel*

| No.                                  | Description  |                           | When made                           | Where fixed                      |
|--------------------------------------|--|---------------------------|-------------------------------------|----------------------------------|
| Made at                              | By whom made   |                           |                                     |                                  |
| Working pressure                     | tested by hydraulic pressure to                        | Date of test              | No. of Certificate                  | Fire grate area                  |
| Valves                               | No. of Safety Valves                                   | Area of each              | Pressure to which they are adjusted | Date of adjustment               |
| If fitted with easing 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    | Rivets<br>Plates                 |
| Dia. of rivet holes                  | Whether punched or drilled                             | Pitch of rivets           | Lap of plating                      | Per centage of strength of joint |
| 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                     |                                  |

*Diameter of uptake*      *Thickness of uptake plates*      *Thickness of main plates*

**SPARE GEAR.** State the articles supplied:— 2 top-end, 2 bottom-end & 2 main-bearing bolts & nuts  
1 set of coupling bolts, 1 set of feed & bilge pump valves, 1 set of rings  
for each piston, a quantity of assorted bolts nuts & washers, 2 propeller blades,  
1 slide valve spindle, 1 pair bottom-end bushes, 2 safety valve springs

The foregoing is a correct description, *Co. Ltd.*  
*Manufacturer.*

| Engins. Works Mandagot         |                                     | Nov. 30. | Dec. 18. | Jan. 9. | 16. | 20. | 22.     | 23. | 29. | May 6. | 1913 | 15.     | 19. | 24. |         |     |     |     |         |     |     |         |     |          |         |     |     |     |     |         |    |     |
|--------------------------------|-------------------------------------|----------|----------|---------|-----|-----|---------|-----|-----|--------|------|---------|-----|-----|---------|-----|-----|-----|---------|-----|-----|---------|-----|----------|---------|-----|-----|-----|-----|---------|----|-----|
| Dates of Survey while building | During progress of work in shops -- | 20.      | Jan. 5.  | 10.     | 15. | 18. | Jul. 2. | 3.  | 10. | 23.    | 26.  | Aug. 7. | 8.  | 16. | 20.     | 21. | 23. | 26. | 27.     | 28. | 29. | Sep. 3. | 9.  | 10.      | 12.     | 16. | 23. | 25. | 26. | Oct. 3. |    |     |
|                                | During erection on board vessel --  | 9.       | 10.      | 15.     | 16. | 18. | Nov. 1. | 5.  | 6.  | 8.     | 13.  | 20.     | 22. | 27. | Dec. 5. | 16. | 17. | 18. | Jan. 7. | 9.  | 15. | 24.     | 30. | Feb. 25. | Mar. 5. | 18. | 19. | 26. | 31. | Apr. 4. | 5. | 16. |
|                                | May 2.                              | 5        |          |         |     |     |         |     |     |        |      |         |     |     |         |     |     |     |         |     |     |         |     |          |         |     |     |     |     |         |    |     |
|                                | Total No. of visits                 | 81.      |          |         |     |     |         |     |     |        |      |         |     |     |         |     |     |     |         |     |     |         |     |          |         |     |     |     |     |         |    |     |

Is the approved plan of main boiler forwarded herewith *Yes* ✓

Dates of Examination of principal parts—Cylinders 14-5-12 Slides 15-8-12 Covers 6-5-12 Pistons 6-5-12 Rods 18-6-12  
Connecting rods 18-6-12 Crank shaft 8-8-12 Thrust shaft 18-6-12 Tunnel shafts 10-10-12 Screw shaft 17-12-12 Propeller 26-9-12  
Stern tube 29-8-12 Steam pipes tested 23-4-13 Engine and boiler seatings 31-3-13 Engines holding down bolts 29-4-13  
Completion of pumping arrangements 29-4-13 Boilers fixed 29-4-13 Engines tried under steam 29-4-13  
Main boiler safety valves adjusted 29-4-13 Thickness of adjusting washers P.B.  $P_2^1$  3  $\frac{13}{32}$  C.B.  $P_{3L}^1$  3  $\frac{13}{32}$  S.B.  $P_2^1$  3  $\frac{13}{32}$   
Material of Crank shaft Steel Identification Mark on Do. Y X 9-12 Material of Thrust shaft Steel Identification Mark on Do. Y X 6-12  
Material of Tunnel shafts Steel Identification Marks on Do. Y X 10-12 Material of Screw shafts Steel Identification Marks on Do. Y X 12-12  
Material of Steam Pipes Steel ✓ Test pressure 660 lbs. ✓

**General Remarks** (State quality of workmanship, opinions as to class, &c.) The engines & boilers of this vessel have been constructed under special survey & the materials and workmanship are found to be good. The engines have been tried under steam and the safety valves of main and auxiliary boilers adjusted at the working pressure. The machinery is now in good order & safe working condition & eligible in my opinion to have the notation of +2 MC 5-13. A report on the electric installation will be forwarded when received from the Electricians.

It is submitted that  
this vessel is eligible for  
THE RECORD. + L.M.

|                              |                 |  |
|------------------------------|-----------------|--|
| The amount of Entry Fee      | .. £ 3 - 0 - 0  | When applied for,<br><b>MAY 7 1913</b> |
| Special                      | .. £ 50 - 1 - 0 |  |
| Donkey Boiler Fee            | .. £ :          | When received,<br><b>MAY 14 1913</b>   |
| Travelling Expenses (if any) | £ :             |  |

*Committee's Minute*

Assigned

MACHINERY CERTIFICATE  
WRITTEN.

Lloyd's Register  
Foundation