

REPORT ON MACHINERY.

NEWCASTLE-ON-TYNE No. 69608

No. 26854

Received at London Office 23 NOV 1916

Date of writing Report 19 When handed in at Local Office 24 NOV 1916 Port of SUNDERLAND.

No. in Survey held at Sunderland Date, First Survey 21st May '15 Last Survey 9th July 1917
Reg. Book. (Number of Visits (46+7))

Supp 25 on the new steel 9/5 "LUMINA".

Master Built at Newcastle. By whom built Palmers S B & C Co Ltd No 853 Tons Gross 5856 Net 3732 When built 1916

Engines made at Sunderland By whom made G. Clark Ltd (No 1035) when made 1916

Boilers made at Sunderland By whom made G. Clark Ltd (No 1035) when made 1916

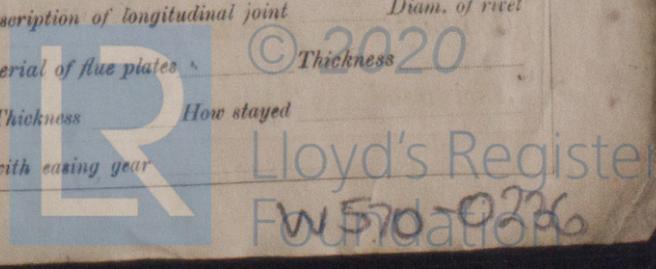
Registered Horse Power Owners H.E. Moss & Co Port belonging to Liverpool.

Nom. Horse Power as per Section 28 498 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 26 1/2", 44", 73" Length of Stroke 48" Revs. per minute 65 Dia. of Screw shaft as per rule 14 7/8" Material of screw shaft as fitted 14 7/8" screw shaft
 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 No 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 No If two liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 5'-0"
 Dia. of Tunnel shaft as per rule 13-2 1/4" Dia. of Crank shaft journals as per rule 13-8 7/8" Dia. of Crank pin 14" Size of Crank webs 2 1/4" x 8 7/8" Dia. of thrust shaft under collars 14 7/8" Dia. of screw 4-10 1/2" Pitch of Screw 16-4" No. of Blades 4 State whether moveable No Total surface 97 sq ft
 No. of Feed pumps 2 Diameter of ditto 9 1/2" Stroke 21" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 9 & 10 x 10 7 1/2 & 5 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room three @ 3 1/2" In Holds, &c. X

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump No Is a separate Donkey Suction fitted in Engine room & size Yes 4"
 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 No Are they Valves or Cocks X
 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 X
 What pipes are carried through the bunkers None How are they protected X
 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 of Stern Tube 13-10-16 Screw shaft and Propeller 17-10-16
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door No worked from Machinery aft

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel John Spencer & Sons Ltd
 Total Heating Surface of Boilers 7512 sq ft Is Forced Draft fitted Yes No. and Description of Boilers three single ended marine.
 Working Pressure 180 lbs Test by hydraulic pressure to 360 Date of test 21-3-16 No. of Certificate 3330
 Can each boiler be worked separately Yes Area of fire grate in each boiler 58 sq ft No. and Description of Safety Valves to each boiler two direct spring Area of each valve 9.62 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Mean dia. of boilers 15'-0" Length 11'-7 3/8" Material of shell plates steel
 Thickness 1 1/2" Range of tensile strength 29 1/2 - 33 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR
 long. seams BBSTR Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 7/8" Lap of plates or width of butt straps 20"
 Per centages of strength of longitudinal joint rivets 92.7 plate 86 Working pressure of shell by rules 182 Size of manhole in shell 16 x 12 (Forward boiler) do in end of after boiler
 Size of compensating ring 8 1/4 x 1 1/4 No. and Description of Furnaces in each boiler 3 Morrison's Material steel Outside diameter 4'-1"
 Length of plain part top 31" bottom 64" Thickness of plates crown 31" Description of longitudinal joint welded No. of strengthening rings
 Working pressure of furnace by the rules 186 Combustion chamber plates: Material steel Thickness: Sides 13/16" Back 23/32" Top 3/4" Bottom 13/16"
 Pitch of stays to ditto: Sides 9 3/4" x 10 3/4" Back 10 x 9 1/2" Top 10 1/4" x 9 1/8" If stays are fitted with nuts or riveted heads nuts in Working pressure by rules 185
 Material of stays steel Diameter at smallest part 2.030" Area supported by each stay 950" Working pressure by rules 192 End plates in steam space:
 Material steel Thickness 1 1/32" Pitch of stays 23" + 21" How are stays secured D.N. Working pressure by rules 182 Material of stays steel
 Diameter at smallest part 8.29" Area supported by each stay 4820" Working pressure by rules 190 Material of Front plates at bottom steel
 Thickness 15/16" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 17 3/8" + 9 3/8" Working pressure of plate by rules 182
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 7/8" Material of tube plates steel Thickness: Front 15/16" Back 3/4" Mean pitch of stays 9 1/4"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 185 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 2 @ 9 1/4" x 7 1/8" Length as per rule 36" Distance apart 9 7/8" Number and pitch of stays in each 2 @ 10 1/4"
 Working pressure by rules 183 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



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

not fitted on board at Sunderland

The foregoing is a correct description,
FOR GEORGE CLARK, LIMITED

W.S. Smith

Manufacturer of Main Engines & Boilers

Dates of Survey while building { During progress of work in shops - - } 1915 May 21 Nov 9 26 30 Dec 10 17 Jan 18 24 Feb 18 11 Mar 1 14 19 21 May 2 11 Jun 2 Jul 3 16 31 Aug 14 Sept 8
{ During erection on board vessel - - - } 11. 14. 15. 19. 21. 23. 26. Oct. 2. 5. 9. 11. 13. 16. 17. 19. 22. 24. 25. 27. 31. Nov. 3. 6. 16.
Total No. of visits 46 Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 14-9-16 Slides 31-7-16 Covers 5-10-16 Pistons 31-7-16 Rods 3-10-16
Connecting rods 14-8-16 Crank shaft 26-7-16 Thrust shaft 21-9-16 Tunnel shafts none Screw shaft 21-9-16 Propeller 8-9-16
Stern tube 25-9-16 Steam pipes tested 25 8 27-10-16 Engine and boiler seatings Engines holding down bolts 6-11-16
Completion of pumping arrangements Boilers fixed 31-10-16 Engines tried under steam 16-11-16
Main boiler safety valves adjusted 16-11-16 Thickness of adjusting washers P. 1 5/16. S. 1 5/16. F. 1 5/16.
Material of Crank shaft SM 1 steel Identification Mark on Do. 1164N WC Material of Thrust shaft SM 1 steel Identification Mark on Do. 701 J.C.
Material of Tunnel shafts none Identification Marks on Do. ✓ Material of Screw shafts SM 1 steel Identification Marks on Do. 728 J.C. 730 J.C.
Material of Steam Pipes lap welded with iron 4 @ 6" x 5/16. 1 @ 9 1/4" x 7/8" Test pressure 540 lbs per sq in
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 no If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. To complete the survey the forward ballast and oil fuel pumping arrangements require to be completed and the oil gutters in the stokehold require to be connected to the oil wells by piercing the bottom of the coal bunker casing. The vessel has returned to the builder's yard for completion. Newcastle Surveyor advised.

The materials and workmanship are good. The machinery has been constructed under special survey and is eligible in our opinion for classification and the record + LMC when the survey is complete.

Certificate (if required) to be sent to SUNDERLAND.

The amount of Entry Fee ... £ 3 : : When applied for.
Special ... £ 44 : 18 : 24 NOV 1916
Donkey Boiler Fee ... £ : : When received.
Travelling Expenses (if any) £ : : 19 11/2

Lewis Davis

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. 20 FEB. 1917

Assigned



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