

REPORT ON MACHINERY.

Nwc. 78098.
No. 28828

Received at London Office MON. JUL 21 1924

Date of writing Report *2 JUN 1924* Port of *Sunderland*
No. in Survey held at *Sunderland* Date, First Survey *Feb 22* Last Survey *May 27 1924*
Reg. Book. *on the new steel S/S GALLIUM* (Number of Volls *17 + 5*)

Master *Blyth* Built at *Blyth* By whom built *Blyth S/S Co. Ld. (S/S No. 228)* When built *1924*
Engines made at *Sunderland* By whom made *N.E. Marine Eng. Co. Ld. (No. 2559)* when made *1924*
Boilers made at *Sunderland* By whom made *N.E. Marine Eng. Co. Ld. (No. 2559)* when made *1924*
Registered Horse Power *244* Owners *a. Lemoine et Fils.* Port belonging to *Rouen*

Nom. Horse Power as per Section 28 *244* 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 *21"-34"-56"* Length of Stroke *36"* Revs. per minute *78* Dia. of Screw shaft *11.67"* Material of *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 *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 *4'-2"*
Dia. of Tunnel shaft *10.4"* Dia. of Crank shaft journals *10.92"* Dia. of Crank pin *11.2"* Size of Crank webs *17x6 1/2"* Dia. of thrust shaft under collars *11.4"* Dia. of screw *1.43"* Pitch of Screw *13-9"* No. of Blades *4* State whether moveable *no* Total surface *63 sq ft*
No. of Feed pumps *2* Diameter of ditto *3"* Stroke *21"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* Diameter of ditto *3 1/2"* Stroke *21"* Can one be overhauled while the other is at work *yes*
No. of Donkey Engines *2* Sizes of Pumps *7 1/2 x 9 1/2 x 10 1/2, 8 x 5 x 8"* No. and size of Suctions connected to both Bilge and Donkey pumps *In Engine Room 3 @ 3" In Holds, &c. No. 1 hold - 2 @ 3". No. 2 hold - 2 @ 3"*
No. of Bilge Injections *1* sizes *6"* Connected to condenser, or to circulating pump *6 P* Is a separate Donkey Suction fitted in Engine room of size *yes 3 1/2"*
Are all the bilge suction pipes fitted with *yes* Are the roses in Engine room *always accessible* 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 *main below, all others 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 *forward hold suction* How are they protected *under timber boards*
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 *2-5-24* of Stern Tube *15-5-24* Screw shaft and Propeller *15-5-24*
Is the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *Bridge Deck, in E.R.*

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *John Spence & Sons Ltd & W. B. White & Sons Ltd.*
Total Heating Surface of Boilers *4224 sq ft* Forced Draft fitted *no* No. and Description of Boilers *two single ended marine*
Working Pressure *190* Tested by hydraulic pressure to *335* Date of test *28-4-24* No. of Certificate *3876*
Can each boiler be worked separately *yes* Area of fire grate in each boiler *52.50 sq ft* No. and Description of Safety Valves to each boiler *two direct spring* Area of each valve *12.50 sq in* Pressure to which they are adjusted *195* Are they fitted with easing gear *yes*
Smallest distance between boilers or uptakes and bunkers or woodwork *18"* Mean dia. of boilers *14-9 1/16"* Length *10'-6"* Material of shell plates *steel*
Thickness *1 1/2"* Range of tensile strength *28-32 tons* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *WTR* long. seams *WBSWR* Diameter of rivet holes in long. seams *1 5/16"* Pitch of rivets *9 5/16"* Lap of plates or width of butt straps *1-7 5/8"*
Per centages of strength of longitudinal joint: rivets *87.5* Working pressure of shell by rules *192* Size of manhole in shell *16 x 12*
Size of compensating ring *flanged* No. and Description of Furnaces in each boiler *3 Deighton* Material *steel* Outside diameter *36 7/8"*
Length of plain part *top 7 9/16"* Thickness of plates *bottom 7 9/16"* Description of longitudinal joint *welded* No. of strengthening rings *4*
Working pressure of furnace by the rules *192* Combustion chamber plates: Material *steel* Thickness: Sides *25/32"* Back *25/32"* Top *25/32"* Bottom *25/32"*
Pitch of stays to ditto: Sides *1 1/2 x 9 1/2"* Back *1 1/4 x 9 1/8"* Top *1 1/2 x 9 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *192*
Material of stays *steel* Diameter at smallest part *2.360"* Area supported by each stay *1110"* Working pressure by rules *191* End plates in steam space *Material steel* Thickness *1 1/2"* Pitch of stays *2 1/2 x 19 1/8"* How are stays secured *WTR & W* Working pressure by rules *191* Material of stays *steel*
Diameter at smallest part *7.44"* Area supported by each stay *4070"* Working pressure by rules *210* Material of Front plates at bottom *steel*
Thickness *7/8"* Material of Lower back plate *steel* Thickness *29/32"* Greatest pitch of stays *1 1/2 x 9 1/8"* Working pressure of plate by rules *220*
Diameter of tubes *3 1/2"* Pitch of tubes *4 1/16 x 4 1/16"* Material of tube plates *steel* Thickness: Front *7/8"* Back *25/32"* Mean pitch of stays *10.4"*
Pitch across wide water spaces *14 1/2"* Working pressures by rules *192* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *20 8/16 x 15"* Length as per rule *30 1/2"* Distance apart *11 1/2"* Number and pitch of stays in each *20 9 1/2"*
Working pressure by rules *194* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately *no*
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? No.

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied: Two connecting rod top and bottom end bolts and nuts, two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves iron and hull various sizes, one propeller.

The foregoing is a correct description,

THE NORTH EASTERN MARINE ENGINEERING CO. LTD.

C. T. Adams
Manager.

Manufacturer.

Dates of Survey while building	During progress of work in shops --	1924. Feb. 22 26. Mar. 6 24. Apr. 9 24. 25 28 29. May 2 6 15 22 23 26 27	Is the approved plan of main boiler forwarded herewith	yes	
		During erection on board vessel ---		Nov. 1924. Apr. 23 24. May 2 13. June 24. 30. + July 2nd	none
				Total No. of visits	

Dates of Examination of principal parts—Cylinders 24-4-24 Slides 2-5-24 Covers 24-4-24 Pistons 2-5-24 Rods 9-4-24
 Connecting rods 9-4-24 Crank shaft 24-4-24 Thrust shaft 6-5-24 Tunnel shafts 6-5-24 Screw shaft 6-5-24 Propeller 29-4-24
 Stern tube 6-5-24 Steam pipes tested 22-5-24 Engine and boiler seatings 24-4-24 Engines holding down bolts 26-5-24
 Completion of pumping arrangements 30-6-24 Boilers fixed 23-5-24 Engines tried under steam 27-5-24
 Main boiler safety valves adjusted 27-5-24 Thickness of adjusting washers Possible F 3/8" A 1 1/2". Suitable F 5/16" A 1/2".

Material of Crank shaft Steel Identification Mark on Do. LLOYD'S NO 6801 Material of Thrust shaft Steel Identification Mark on Do. LLOYD'S NO 6801
 Material of Tunnel shafts Steel Identification Marks on Do. L.C.D. 1000's on do. Material of Screw shafts Steel Identification Marks on Do. L.C.D. 6-5-24

Material of Steam Pipes Lapwelded wrought iron Test pressure 600 lbs per sq"
 Is an installation fitted for burning oil fuel No 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 no If so, state name of vessel —

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

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. 7-24.

It is submitted that this vessel is eligible for THE RECORD. + LMC 7.24 CL

J. D. Paul
21/7/24

C. T. Adams & J. R. Beveridge
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee ... £ 4
 Special ... £ 61
 Donkey Boiler Fee ... £
 Travelling Expenses (if any) £

When applied for,

31 MAY 1924

When required, as all as per advice dated 19/7/24

Committee's Minute FRI 25 JUL 1924

Assigned + LMC 724

C. T.



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SUNDERLAND,

Committee's Minute (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.