

REPORT ON MACHINERY.

No. 38380

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Date of writing Report 8. 12. 1918 When handed in at Local Office 4. 12. 1918 Port of Glasgow
 Date, First Survey 7/8/14 Last Survey 5. 12. 1918
 (Number of Visits 75)
 on the T.S. Dredger "KAIONE"
 Built at Paisley By whom built Fleming Ferguson & Co. Ltd. (H29) When built 1914 to 18
 Engines made at Paisley By whom made Fleming Ferguson & Co. Ltd. (H29) when made 1914 to 18
 Boilers made at ditto By whom made ditto (H29) when made 1914 to 18.
 Registered Horse Power Owners Wanganui Harbour Board Port belonging to Wanganui.
 Nom. Horse Power as per Section 28 158 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 (GINES, &c. — Description of Engines Compound Surface Condensing (H29) No. of Cylinders 8 No. of Cranks 8
 Dia. of Cylinders 13.26 Length of Stroke 15 Revs. per minute as per rule 15/6/14 7.1 No. of Cranks 8
 the screw shaft fitted with a continuous liner the whole length of the stern tube No liner fitted Is the after end of the liner made water tight
 the propeller boss Yes 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 If two
 liners are fitted, is the shaft lapped or protected between the liners No. Oil Tube 3.2 Length of stern bush 2.8
 Dia. of Turret shaft as per rule 15/6/14 6.14 Dia. of Crank shaft journals as per rule 15/6/14 6.14 Dia. of Crank pin 6.3/4 Size of Crank webs 7 1/2 x 4 1/2 Dia. of thrust shaft under
 collars 6 1/2 Dia. of screw 7.6 Pitch of Screw 7.0 No. of Blades 3 State whether moveable No Total surface 204
 No. of Feed pumps 2 Diameter of ditto 8 x 6 Stroke 18 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 6 x 6 Stroke 6 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 2-2 1/4 + 1-2 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room 2-2 1/4 + 1-2 1/2 In Holds, &c. 67 2 1/4 in Howard Compartments
 No. of Bilge Injections 2 sizes 4 1/2 Connected to condenser or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 2 1/2
 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
 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 Austrian, Schanck, Balg. &c. How are they protected Steel Trunks
 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 11. 5. 15 of Stern Tube 11. 5. 15 Screw shaft and Propeller 11. 5. 15
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top of Engine Room.
 OILERS, &c. — (Letter for record S) Manufacturers of Steel D. Colville & Sons & The Glasgow Iron & Steel Co.
 Total Heating Surface of Boilers 3514 Is Forced Draft fitted No No. and Description of Boilers 2 Single Ended
 Working Pressure 130 Tested by hydraulic pressure to 260 Date of test 11. 6. 15 No. of Certificate 13175
 Can each boiler be worked separately Yes Area of fire grate in each boiler 554 No. and Description of Safety Valves to
 each boiler Double Spring Area of each valve 3.5 Pressure to which they are adjusted 135 lb Are they fitted with easing gear
 Smallest distance between boilers or uptakes and bunkers or woodwork 4-3 Mean dia. of boilers 20.8 Length 10-0 Material of shell plates S
 Thickness 29/32 Range of tensile strength 28/32 Are the shell plates welded or flanged Descrip. of riveting: cir. seams OR
 long. seams DR + DBS Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 5 3/8 Lap of plates or width of butt straps 16 3/8
 Per centages of strength of longitudinal joint rivets 81.13 Working pressure of shell by rules 145 Size of manhole in shell 16 x 12
 Size of compensating ring 7 x 29/32 No. and Description of Furnaces in each boiler 3 Corrugated Material S Outside diameter 40 1/16
 Length of plain part top Thickness of plates crown 13/32 Description of longitudinal joint weld No. of strengthening rings 3
 bottom Thickness of plates bottom 13/32 Description of longitudinal joint weld No. of strengthening rings 3
 Working pressure of furnace by the rules 141 Combustion chamber plates: Material S Thickness: Sides 9/16 1/8 Back 7/32 Top 9/16 5/8 Bottom 5/8
 Pitch of stays to ditto: Sides 10 x 8 Back 8 3/4 x 7 1/2 Top 9 1/2 x 9 1/2 If stays are fitted with nuts or riveted heads Yes DN Working pressure by rules 131
 Material of stays S Diameter at smallest part 1 1/32 Area supported by each stay 80 Working pressure by rules 142 End plates in steam space:
 Material S Thickness 15/16 Pitch of stays 18 1/2 x 16 How are stays secured DN + W Working pressure by rules 132 Material of stays S
 Diameter at smallest part 4569 Area supported by each stay 296 Working pressure by rules 160 Material of Front plates at bottom S
 Thickness 23/32 Material of Lower back plate S Thickness 1 1/16 Greatest pitch of stays 12 3/4 x 8 3/4 Working pressure of plate by rules 136
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/4 x 4 1/4 Material of tube plates S Thickness: Front 23/32 DP Back 1 1/16 Mean pitch of stays 10 5/8
 Pitch across wide water spaces 13 1/4 Working pressures by rules 164 Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 7 1/16 x 5 1/8 (2) Length as per rule 27 3/4 Distance apart 9 1/8 Number and pitch of stays in each 2 at 9 1/16
 Working pressure by rules 132 Superheater or Steam chest; how connected to boiler 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

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VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. _____ Description _____
Made at _____ By whom made _____ When made _____ Where fixed _____
Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of _____
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 _____
Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____
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 _____

SPARE GEAR. State the articles supplied:— 2 Main Bearing Bolts & Nuts, 2 Crosshead bolts & nuts, 2 Bottom end bolts & nuts, 1 set of coupling bolts & nuts, 1 set of feed & Bilge pump valves, 2 Springs for safety valves, 1 set of air pump valves, 2 Main & 2 Aux feed check valves, A quantity of assorted bolts & nuts. Sum of value _____
The foregoing is a correct description, _____
Manufacturer. *G. L. M. Co.*

Dates of Survey while building: During progress of work in shops -- 1914 Aug. 26-31, Sept. 2-9, 15-23, Oct. 6-16, 21-23, 29, Nov. 2-10, 13-16, Dec. 8-11, 18-22, 28, 1915 and 12-14, 22-29, 1916
During erection on board vessel -- Nov. 14-22, 25-31, Dec. 1-5, 11-18, 1915, Jan. 1-8, 11-15, 17-25, July 4-15, Aug. 5-11-23, Sept. 9-10-18, 1916
Total No. of visits 75
Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 25-12-14 Slides 22-3-15 Covers 16-11-14 Pistons 4-3-15 Rods 4-2-15
Connecting rods 11-2-15 Crank shaft 8-1-15 Thrust shaft 13-4-15 Tunnel shafts 31-3-15 Screw shaft 13-4-15 Propeller 27-4-15
Stern tube 22-3-15 Steam pipes tested 14-4-15 Engine and boiler seatings 11-5-15 Engines holding down bolts 13-4-15
Completion of pumping arrangements 25-11-15 Boilers fixed 15-4-15 Engines tried under steam 5-12-15
Main boiler safety valves adjusted 25-11-15 Thickness of adjusting washers Bolts 3/8 + 3/8 Apr. 3/8 Ford 5/16
Material of Crank shaft S Identification Mark on Do. *L. M. Co.* Material of Thrust shaft S Identification Mark on Do. *L. M. Co.*
Material of Tunnel shafts S Identification Marks on Do. *L. M. Co.* Material of Screw shafts S Identification Marks on Do. *L. M. Co.*
Material of Steam Pipes Solid drawn Copper. Test pressure 260 lbs per sq. inch.

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Machinery has been built under Special Survey in accordance with the Rules of the Society, has been securely fitted on board the vessel & tried under steam with satisfactory results.
The workmanship & material is good.
The Machinery is eligible, in my opinion, to have notation *T. L. M. Co. 12-18.*

In behalf of the owners the trials have been supervised, details of construction checked with specification & special certificate issued. *9651. See copy attached.*
Note The whole of the machinery & boilers also tail shafts & propellers have been examined & found in good order with exception of the starboard propeller which has been renewed.

Damage
Caused to starboard propeller by striking submerged wood when entering in River Bar. For further particulars please see Damage Report attached.

The amount of Entry Fee .. £ 2 : 0 : 0 When applied for, Special Trial Fee £5-5-0
Special .. £ 23 : 14 : 0 Specification Fee £5-0-0
Donkey Boiler Fee .. £ 3 : 3 : 0 When received, £5-5-12 16/12/18
Damage .. £ 2 : 2 : 0
Travelling Expenses (if any) £
Sunday attendance
Committee's Minute *GLASGOW 17 DEC 1918*

Assigned *T. L. M. Co. 12-18.*
Lloyd's Register Foundation

GLASGOW.

Certificate (if required) to be sent to _____

14-12-18