

REPORT ON MACHINERY.

No. 38380

Received at London Office

WED. DEC. 18. 1918

Port of Glasgow
 Date, First Survey 7/8/14 Last Survey 5-12-1918
 (Number of Visits 75)
 Survey held at Paisley
 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
 Gross Tons _____ Net Tons _____
 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

GINES, &c. — Description of Engines Compound Surface Condensing (4 Sets) No. of Cylinders 8 No. of Cranks 8
 Dia. of Cylinders 13-26 Length of Stroke 15 Revs. per minute _____ Dia. of Screw shaft _____ Material of screw shaft _____
 Is the after end of the liner made water tight _____
 Is the liner in more than one length are the joints burned _____
 Is the liner does not fit tightly at the part _____
 Is the space charged with a plastic material insoluble in water and non-corrosive _____
 Is the shaft lapped or protected between the liners _____
 Length of stern bush 2-8
 Dia. of Crank shaft journals _____ Dia. of Crank pin 6 3/4 Size of Crank webs 1/2 x 1/2 Dia. of thrust shaft under _____
 Dia. of screw _____ Pitch of Screw 7-0 No. of Blades 3 State whether moveable No Total surface 204
 No. of Feed pumps _____ Diameter of ditto 8+6 Stroke 18 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps _____ Diameter of ditto 6+6 Stroke 6 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines _____ Sizes of Pumps _____ No. and size of Suctions connected to both Bilge and Donkey pumps _____
 In Engine Room 2-2 1/4 + 3-2 1/2 In Holds, &c. 6-2 1/4 in Howard Compartments

No. of Bilge Injections 2 sizes 4" Connected to _____ or to circulating 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 Auto Steam, Exhaust, Bilge, &c. How are they protected Steel Trusses
 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 55 sq ft No. and Description of Safety Valves to each boiler Double Spring
 Area of each valve 3-5 sq ft Pressure to which they are adjusted 135 lbs Are they fitted with easing gear _____
 Smallest distance between boilers or uptakes and bunkers or woodwork 4-3 Mean dia. of boilers 40-8 Length 10-0 Material of shell plates S
 Thickness 29/32 Range of tensile strength 28/32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams DR
 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 _____ bottom _____ Thickness of plates crown _____ bottom _____ Description of longitudinal joint weld No. of strengthening rings _____
 Working pressure of furnace by the rules 141 Combustion chamber plates: Material S Thickness: Sides 9/16 Back 17/32 Top 9/16 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 1/16 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 4 5/16 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 40 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 5/8 (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 _____ Plates _____
 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 various sizes.

The foregoing is a correct description,

Manufacturer. *W. G. M.*

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, 31
	During erection on board vessel	Nov 16-25, Dec 13-19, 1916, Jan 10-11, 19, Feb 10-Apr 14, May 2-19, 18, Oct 9-11, 15-18, 28, Nov 6-19, 22, Dec 1-2, 3-5
	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 15-4-15 Tunnel shafts 31-3-15 Screw shaft 15-4-15 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 15-4-15
 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 Port-3/8 + 3/8 aft-3/8 Fore 5/16
 Material of Crank shaft S Identification Mark on Do. *W. G. M.* Material of Thrust shaft S Identification Mark on Do. *W. G. M.*
 Material of Tunnel shafts S Identification Marks on Do. *W. G. M.* Material of Screw shafts S Identification Marks on Do. *W. G. M.*
 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 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. C. 12-18.*

In behalf of the owners the trials have been supervised, details of construction checked with specification & special certificate issued. No. 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	When received	Specification Fee £5-5-0
Donkey Boiler Fee	£ 3 : 3 : 0		W. G. M. London. M. McClure Fred. O. Ferguson
Travelling Expenses (if any)	£ 2 : 2 : 0		Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
Sunday attendance			£5-5-10. 16/12/18.

Committee's Minute **GLASGOW 17 DEC 1918**

Assigned *+ L. M. C. 12, 18.*

Machinery Certificate WRITTEN 18-12-18



Certificate (if required) to be sent to Glasgow.

14-12-18