

# REPORT ON MACHINERY.

Port of Glasgow

Received at London Office TUES. 12 SEP 1893

No. in Survey held at Renfrew Date, first Survey 27<sup>th</sup> January Last Survey 7<sup>th</sup> Sept. 1893  
 Reg. Book. on the Dredger No. 404 (Number of Visits 14) Tons { Gross 449 Net 211  
 Master Robertson Built at Renfrew By whom built Messrs Schmitz & Co When built 1893  
 Engines made at Renfrew By whom made Messrs Schmitz & Co when made 1893  
 Boilers made at " By whom made " when made 1893  
 Registered Horse Power 39 each = 78 Owners Limaru Harbour Board Port belonging to Limaru  
 Nom. Horse Power as per Section 28 "

**ENGINES, &c.** — Description of Engines Twin screw. Compound inverted direct act. No. of Cylinders Four  
 Diameter of Cylinders 16 and 30 Length of Stroke 24 Revolutions per minute 150 Diameter of Screw shaft as per rule 6.94  
 Diameter of Tunnel shaft as per rule 5.73 Diameter of Crank shaft journals 6 1/2 Diameter of Crank pin 6 1/2 Size of Crank webs 4 1/4  
 Diameter of screw 7' 0" Pitch of screw 10' 0" No. of blades 4 State whether moveable solid Total surface 15  
 No. of Feed pumps one to each engine Diameter of ditto 3" Stroke 6" Can one be overhauled while the other is at work "  
 No. of Bilge pumps do Diameter of ditto 3" Stroke 6" Can one be overhauled while the other is at work "  
 No. of Donkey Engines three Sizes of Pumps one fore engine 7x5x6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 of 2", one 2" in Stakes hold. In Holds, &c. four 2"  
 No. of bilge injections one sizes 3" Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in engine room of size port 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 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 "  
 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  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight none  
 Is it fitted with a watertight door " worked from "

**BOILERS, &c.** — (Letter for record S) Total Heating Surface of Boilers 1317  
 No. and Description of Boilers One Cyl. return tubular Working Pressure 100 Tested by hydraulic pressure to 200  
 Date of test Can each boiler be worked separately Area of fire grate in each boiler 55 1/2 No. and Description of safety valves to each boiler two Spring Area of each valve 6.92 Pressure to which they are adjusted 105 Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean diameter of boilers 159  
 Length 10' 0" Material of shell plates Steel Thickness 13/16 Description of riveting: circum. seams lap. 2 R. long. seams D. Butt 3 R.  
 Diameter of rivet holes in long. seams 1" Pitch of rivets 5 1/8" Lap of plates or width of butt straps 13 1/2  
 Per centages of strength of longitudinal joint 84 Working pressure of shell by rules 111 Size of manhole in shell 16 x 12  
 Size of compensating ring 13/16 x 6 No. and Description of Furnaces in each boiler two plain Material Steel Outside diameter 38  
 Length of plain part top 6 1/2 Thickness of plates bottom 7/32 Description of longitudinal joint weld No. of strengthening rings none  
 Working pressure of furnace by the rules 100 Combustion chamber plates: Material Steel Thickness: Sides 1/2 Back 1/2 Top 1/2 Bottom 1/16  
 Pitch of stays to ditto: Sides 8" Back 8" Top 8 x 7/8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 120  
 Material of stays Steel Diameter at smallest part 90 Area supported by each stay 64 Working pressure by rules 116 End plates in steam space: Material Steel Thickness 13/16 Pitch of stays 16 How are stays secured D. nuts Working pressure by rules 122 Material of stays Steel  
 Diameter at smallest part 2.66 Area supported by each stay 256 Working pressure by rules as above Material of Front plates at bottom Steel  
 Thickness 49/64 Material of Lower back plate Steel Thickness 49/64 Greatest pitch of stays 12" Working pressure of plate by rules 183  
 Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 Material of tube plates Steel Thickness: Front 49/64 Back 3/4 Mean pitch of stays 11.9  
 Pitch across wide water spaces 12" Working pressures by rules 142, 146 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 7 x 2 x 3/4 Length as per rule 27 Distance apart 7 1/8 Number and pitch of Stays in each 2 x 8  
 Working pressure by rules 181 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

To a Report also sent on the Hull of the Ship? Yes, after repairs, and when one will be sent?



12440 Gls

**DONKEY BOILER**— Description *Cylindrical vertical*  
 Made at *Kennew* By whom made *Lobnitz & Co* When made *1893* Where fixed *In stake held*  
 Working pressure *100* tested by hydraulic pressure to *200* No. of Certificate *3382* Fire grate area *6 1/2* Description of safety valves *Spring*  
 No. of safety valves *one* Area of each *7.07* Pressure to which they are adjusted *10 1/2* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *57"* <sup>height</sup> *9' 0"* Material of shell plates *Steel* Thickness *3/32*  
 Description of riveting long seams *Lap. 2 Rivets* Diameter of rivet holes *3/4* Whether punched or drilled *drilled* Pitch of rivets *3 9/16*  
 Lap of plating *Per centage of strength of joint* Rivets *80* Thickness of shell crown plates *1/2* Radius of do. *4 1/2* No. of Stays to do. *four*  
~~Area~~ *area* *1.41* Diameter of furnace Top *39"* Bottom *46"* <sup>height</sup> *4 1/2* Thickness of furnace plates *1/2"* Description of joint *Lap. 1 Rivet* Thickness of furnace crown plates *1/2* Stayed by *uptake + 4 Stays* Working pressure of shell by rules *114*  
 Working pressure of furnace by rules *141* Diameter of uptake *12"* Thickness of uptake plates *7/16* Thickness of water tubes *7/16*

SPARE GEAR. State the articles supplied:— *As required by the rules.*

The foregoing is a correct description,

Manufacturer.

*Lobnitz & Co*

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

*This vessel is intended for the deepening of the Harbour of Timaru (New Zealand) and is fitted with powerful machinery for Pumping sand & gravel. A trial of this machine was made on the 4th inst in Brodie's Bay in about 22 ft of water, and gave every satisfaction lifting about 450 tons of material in a very short time. The pumping gear & Crane jibs will be stowed away and secured and the vessel otherwise prepared for the voyage to her destination, the Hopper being filled with coal in addition to her bumpers about 300 tons. This machinery is in our opinion eligible for notification in the Register Book + L.M.C. 9/93*

It is submitted that  
 this vessel is eligible for  
 THE RECORD + L.M.C. 9.93 -

*Prob*  
 13/9/93 -

(The Surveyors are requested not to write above the space for Committee's Minute.)

Certificate (if required) to be sent to MACHINERY CERTIFICATE

	WRITTEN	When applied for	When received
The amount of Entry Fee..	£ 1 : " : "	4/9/93	8/9/93
Special .. .. .	£ 11 : 14 : "		
Donkey Boiler Fee .. .	£ " : " : "		
Travelling Expenses (if any) £	" : " : "		

*James Mollison & Co Surveyors*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*Clyde District*

Committee's Minute **FRI 15 SEP 1893**

Assigned

*+ L.M.C. 9.93*



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