

# REPORT ON MACHINERY

No. 6484

TUESDAY 30 DEC 1884

No. in Survey held at *Gumbarton* Date, first Survey *15<sup>th</sup> April* Last Survey *29<sup>th</sup> Decemr* 1884  
 Reg. Book. *on the* *Screw Steamer "Lampo"* (Number of Visits *26*) Tons *434.07*  
 Master *Strang* Built at *Gumbarton* By whom built *Mr. Denny Brothers* When built *1884*  
 Engines made at *Gumbarton* By whom made *Denny & Co.* when made *1884*  
 Boilers made at *"* By whom made *"* when made *1884*  
 Registered Horse Power *92* Owners *Union Steam Ship Coy of New Zealand* Port belonging to *Swedish*

## ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting*  
 Diameter of Cylinders *26 $\frac{1}{2}$ " + 48"* Length of Stroke *33"* No. of Rev. per minute *46* Point of Cut off, High Pressure  *$\frac{1}{2}$*  Low Pressure  *$\frac{1}{2}$*   
 Diameter of Screw shaft *9"* Diam. of Tunnel shaft *8 $\frac{1}{2}$ "* Diam. of Crank shaft journals *9 $\frac{1}{2}$ "* Diam. of Crank pin *9 $\frac{1}{4}$ "* size of Crank webs *6" x 11 $\frac{1}{2}$ "*  
*All the shafting turned & finished by the Engineers*  
 Diameter of screw *12 $\frac{1}{2}$ "* Pitch of screw *15 $\frac{1}{2}$ "* No. of blades *4* state whether moveable *Yes* total surface *38 $\frac{1}{2}$  ft.*  
 No. of Feed pumps *Two* diameter of ditto *3"* Stroke *16 $\frac{1}{8}$ "* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pumps *Two* diameter of ditto *3"* Stroke *16 $\frac{1}{8}$ "* Can one be overhauled while the other is at work *Yes*  
 Where do they pump from *From all Compartments*  
 No. of Donkey Engines *Two* Size of Pumps *8" x 4" x 9"* *10" x 8" x 10"* Where do they pump from *Sea Bilge & Hotwell also from ballast Tanks*  
 Are all the bilge suction pipes fitted with roses *Yes* Are the roses always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*  
 No. of bilge injections *One* and sizes *5 $\frac{1}{2}$ "* Are they connected to condenser, or to circulating pump *To Circulating*  
 How are the pumps worked *By Eccentric on Crank webs*  
 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 accessible at all times *Yes*  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *Yes*  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *On ship before launching*  
 Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Upper platform*

## BOILERS, &c.—


Number of Boilers *One* Description *Round Horizontal* Whether Steel or Iron *Steel*  
 Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *12<sup>th</sup> November, 1884*  
 Description of ~~superheating apparatus or~~ steam chest *Round Length*  
 Can each boiler be worked separately *"* Can the superheater be shut off and the boiler worked separately *"*  
 No. of square feet of fire grate surface in each boiler *69 $\frac{1}{2}$  ft.* Description of safety valves *Direct Spring* No. to each boiler *Two*  
 Area of each valve *10.9"* Are they fitted with easing gear *Yes* No. of safety valves to superheater *"* area of each valve *"*  
 Are they fitted with easing gear *"* Smallest distance between boilers and bunkers or woodwork *13"* Diameter of boilers *14" + 4 $\frac{1}{8}$ "*  
 Length of boilers *9' 11 $\frac{1}{2}$ "* description of riveting of shell long. seams *Double riveted* circum. seams *Double riveted* Thickness of shell plates *1 $\frac{1}{16}$ " full*  
 Diameter of rivet holes *1 $\frac{1}{8}$ "* whether punched or drilled *Drilled* pitch of rivets *4 $\frac{1}{2}$ "* Lap of plating *12 $\frac{1}{2}$ " Staps*  
 Percentage of strength of longitudinal joint *45%* working pressure of shell by rules *80 lbs* size of manholes in shell *17" x 13"*  
 Size of compensating rings *Double plate fitted* No. of Furnaces in each boiler *Three*  
 Outside diameter *3' 9"* length, top *6' 6"* bottom *9' 5"* thickness of plates *1 $\frac{1}{16}$ "* description of joint *Corrupted* if rings are fitted *"*  
 Greatest length between rings *"* working pressure of furnace by the rules *111 lbs* combustion chamber plating, thickness, sides *9 $\frac{1}{16}$ "* back *9 $\frac{1}{16}$ "* top *9 $\frac{1}{16}$ "*  
 Pitch of stays to ditto, sides *8' x 8 $\frac{3}{4}$ "* back *8' x 8 $\frac{3}{4}$ "* top *8' x 8"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *106 lbs*  
 Diameter of stays at smallest part *1 $\frac{1}{8}$ "* working pressure of ditto by rules *112 lbs* end plates in steam space, thickness *1 $\frac{1}{16}$ "*  
 Pitch of stays to ditto *17" x 17"* how stays are secured *By double nut* working pressure by rules *80 lbs* diameter of stays at smallest part *2"* working pressure by rules *80 lbs* Front plates at bottom, thickness *1 $\frac{1}{16}$ "* Back plates, thickness *9 $\frac{1}{16}$ "*  
 Greatest pitch of stays *11" x 8 $\frac{3}{4}$ "* working pressure by rules *115 lbs* Diameter of tubes *3 $\frac{1}{4}$ "* pitch of tubes *4 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ "* thickness of tube plates, front *1 $\frac{1}{16}$ "* back *1 $\frac{1}{16}$ "* how stayed *By tubes* pitch of stays *9" x 13 $\frac{1}{2}$ "* width of water spaces *6"*  
 Diameter of ~~Superheater or~~ Steam chest *3' 2"* length *6' 0 $\frac{1}{2}$ "* thickness of plates *1 $\frac{1}{16}$ "* description of longitudinal joint *Double riveted* diam. of rivet holes *1 $\frac{1}{8}$ "*  
 Pitch of rivets *3 $\frac{1}{4}$ "* working pressure of shell by rules *181 lbs* diameter of flue *"* thickness of plates *"* If stiffened with rings *"*  
 Distance between rings *"* working pressure by rules *"* end plates of ~~superheater or~~ steam chest; thickness *9 $\frac{1}{16}$ "* how stayed *Stayed 3 $\frac{1}{2}$  ft.*  
 Superheater on steam chest; how connected to boiler *By hook pieces 15" dia x 3 $\frac{1}{2}$  ft.*

State of Report to also sent on the result of the ship

6784-98

**DONKEY BOILER—** Description *Flat Sided Horizontal*  
Made at *Dumbarton* by whom made *Denny & Co* when made *1884* where fixed *In Stechford*  
Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *1328* fire grate area *13 ft* description of safety  
valves *Direct Spring* No. of safety valves *one* area of each *13 ft* if fitted with easing gear *yes* if steam from main boilers can  
enter the donkey boiler *no* diameter of donkey boiler *4' 8"* height *8' 3"* length *4' 2 1/8"* description of riveting *Double riveted lap*  
Thickness of shell plates *3/16"* diameter of rivet holes *7/8"* whether punched or drilled *drilled* pitch of rivets *3 1/4"* lap of plating *4 1/2"*  
per centage of strength of joint *73% + 60%* thickness of *end* plates *1/16"* stayed by *Stay bars 1 3/4" steel*  
Diameter of furnace, top *3' 3"* bottom *—* length of furnace *5 ft* thickness of plates *3/16"* description of joint *double butt shape*  
Thickness of *combustion* plates *3/16"* stayed by *Screw stays* working pressure of shell by rules *115 lb*  
Working pressure of furnace by rules *115 lb* diameter of uptake *—* thickness of plates *—* thickness of water tubes *—*

**SPARE GEAR.** State the articles supplied: *One half length of Crank shaft, 1 Propeller shaft complete, 4*  
*propeller blades, 2 valve spindles, bushes for crank pins & valve gear, 2 valve seats for feed & 2 for*  
*circulating pumps, 1 pump rod to fit either Air or Circulating pumps, 2 complete sets of valves for Air*  
*circulating pumps, 50 Condenser tubes, 36 Boiler tubes, 1 set Coupling bolts, 4 connecting rods & boxes.*  
The foregoing is a correct description, *Top & bottom end. Assortment of bolts nuts & iron and*  
*Denny & Co.* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers*)  
*are of good workmanship and materials and are now in good*  
*order and safe working condition and eligible in my opinion*  
*to be noted in the Register Book*  *Lloyds, M.C. 12/84*

*It is submitted that this*  
*matter is eligible to have the*  
*notification sent to the*  
*M 30/12/84*

The amount of Entry Fee £ 1 : - : - received by me,  
Special £ 13 : 16 : -  
Donkey Boiler Fee £ - : - : -  
Certificate (if required) £ - : - : - *24/12/1884*  
To be sent as per margin.  
(Travelling Expenses, if any, £ - 8/-)  
Committee's Minute

TUESDAY 30 DEC 1884

*James Morrison*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Clyde District*