

REPORT ON MACHINERY.

RECEIVED 30th MAR. 82

(Received at London Office)

No. 5654 Date, first Survey 20.12.81 Last Survey 28.5.82
 No. in Reg. Book 1483.36 Tons 1000.02
 Survey held at Bombastou
 on the Screw Steamer "Manapouri"
 Master Thomas Logan Built at Bombastou When built 1881.2
 Engines made at Bombastou By whom made Denny & Co. when made 1881.2
 Boilers made at do. By whom made do. when made 1881.2
 Registered Horse Power 300 Owners Union Exp. New Zealand Port belonging to Bunedin

ENGINES, &c.—

Description of Engines Compound direct acting
 Diameter of Cylinders 41" 7/16" Length of Stroke 48" No. of Rev. per minute 45 Point of Cut off, High Pressure 1/10 Low Pressure 1/10
 Diameter of Screw shaft 12 3/4" Diameter of Tunnel shaft 11 3/4" Diameter of Crank shaft journals 13" Diameter of Crank pin 15" size of Crank webs 8 1/4" x 16 1/4"
 Diameter of screw 14' 6" Pitch of screw 20' 6" No. of blades 4 state whether moveable yes total surface 56' 4"
 No. of Feed pumps two diameter of ditto 4 1/2" Stroke 24 1/4" Can one be overhauled while the other is at work yes
 No. of Bilge pumps two diameter of ditto 4 1/2" Stroke 24 1/4" Can one be overhauled while the other is at work yes
 Where do they pump from All compartments.
 No. of Donkey Engines one. Size of Pumps 8 Cyl. 4 pump, 9 Cyl. 1 pump here do they pump from Sea, Hotwell, Main bilge
pipes 7 in addition from Engine room bilge separately.
 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" Are they connected to condenser, or to circulating pump Circulating
 How are the pumps worked By eccentrics on Crankshaft.
 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 below
 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 for 7 main hold suction How are they protected wood & iron casing
 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 before launching.
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from upper deck.

BOILERS, &c.—

Number of Boilers two Description Cylindrical double ended multitubular
 Working Pressure 40 lbs. Tested by hydraulic pressure to 140 lbs Date of test 9.12.81
 Description of superheating apparatus or steam chest Horizontal
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no.
 No. of square feet of fire grate surface in each boiler 111 Description of safety valves direct spring
 No. to each boiler two area of each valve 28.270" 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 8"
 Diameter of boilers 15' 2 1/2" Length of boilers 15' 11 1/2" description of riveting of shell long. seams treble circum. seams double
 Thickness of shell plates 1 7/16" diameter of rivet holes 1 3/16" whether punched or drilled drilled pitch of rivets 3 3/4" C. 4 1/2" long.
 Lay of plating C. 5 1/4" h. 8 3/4" per centage of strength of longitudinal joint 43.6. working pressure of shell by rules 45 lbs.
 Size of manholes in shell 14' x 13" size of compensating rings 32" x 30" x 7/8"
 No. of Furnaces in each boiler two outside diameter 3' 2" length, top 6' 0" bottom 4' 10"
 Thickness of plates 1/2" description of joint double butt if rings are fitted Two greatest length between rings 6' 6"
 Working pressure of furnace by the rules 80 lbs.
 Combustion chamber plating, thickness, sides 1/2" back through top 1/2"
 Pitch of stays to ditto sides 9' x 8" back " top Indian 3' 10" x 7' 1" pitch 9' x 8"
 If stays are fitted with nuts or riveted heads nuts. working pressure of plating by rules 95 lbs.
 Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 91 lbs.
 End plates in steam space, thickness 1 3/16" pitch of stays to ditto 15' x 14" how stays are secured D. Nuts & Washers
 Working pressure by rules 93 lbs. diameter of stays at smallest part 2 1/4" working pressure by rules 82 lbs.
 Front plates at bottom, thickness 1 3/16" Steel Back plates, thickness " greatest pitch of stays " working pressure by rules "

Form No. 8—(10/80) 2000.

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GLS146-0317

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Diameter of tubes 3" pitch of tubes 4 1/2" thickness of tube plates, front 1/16" back 1/16"
 How stayed Stay tubes pitch of stays 12 3/4" width of water spaces 6"
 Diameter of Superheater or Steam chest 36 1/4" length 21'0"
 Thickness of plates 1/2" description of longitudinal joint lap. diameter of rivet holes 7/8" pitch of rivets 3 1/4"
 Working pressure of shell by rules 144 lbs. Diameter of flue 11" thickness of plates "
 If stiffened with rings " distance between rings " Working pressure by rules "
 End plates of superheater, or steam chest; thickness 1/2" Steel How stayed No stays, dished 2'6" radius
 Superheater or steam chest; how connected to boiler Flanged smooth. riveted.

DONKEY BOILER— Description Vertical, with internal cone & cross-tubes of steel
 Made at Kumbarton By whom made Denny & Co. when made 1882
 Where fixed Upper deck working pressure 40 lbs. Tested by hydraulic pressure to 140 lbs. No. of Certificate 42.
 Fire grate area 13.5 sq. ft. Description of safety valves direct spring No. of safety valves one area of each 7.668
 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No.
 Diameter of donkey boiler 5'6 1/4" length Height 11'2 1/4" description of riveting double & single
 thickness of shell plates 3/8" diameter of rivet holes 13/16" whether punched or drilled drilled
 pitch of rivets 3 1/4" lap of plating 4 1/4" per centage of strength of joint 75
 thickness of crown plates 1/2" stayed by 4 rod stays 2 5/8" dia
 Diameter of furnace, top 4'2 1/2" bottom 4'6 1/2" length of furnace "
 thickness of plates 7/16" description of joint Single riveted lap joint.
 thickness of furnace crown plates 7/16" stayed by 4 rod stays 2 5/8" dia.
 Working pressure of shell by rules 94 lbs. working pressure of furnace by rules 40 lbs.
 diameter of uptake 16" thickness of plates 3/16" thickness of water tubes 1/8"

The foregoing is a correct description,
 Denny & Co. Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. The workmanship on the above Engines & Boilers is good. and they are now in safe working condition, and are in my opinion eligible to be noted in the Register Book. Lloyd's M.C.

It is submitted that this vessel is eligible to have the notification of this inc recorded
 M 30/3/82

[Large blue ink scribble]

The amount of Entry Fee £ 3 : 0 : 0 received by me.
 Special .. £ 35 : 0 : 0
 Certificate (if required) .. £ 0 : 0 : 0 28th March 1882
 To be sent as per margin. £ 38 : 0 : 0
 (Travelling Expenses, if any, £)

[Signature]
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute Friday, March, 31st, 1882