

REPORT ON MACHINERY.

9996

No. 9996 Port of Glasgow Received at London Office THURS 24 JULY 1890
 No. in Survey held at Paisley Date, first Survey 16 August 1889 Last Survey 22nd July 1890.
 Reg. Book. on the Paddle Steamer "Mara" (Number of Visits 60) Tons ^{Gross} 196 _{Net} 51
 Master Built at Paisley By whom built Heming & Ferguson When built 1890.
 Engines made at Paisley By whom made Heming & Ferguson when made 1890.
 Boilers made at Paisley By whom made Heming & Ferguson when made 1890.
 Registered Horse Power 90. Owners Timaru Harbour Board Port belonging to Dunedin

ENGINES, &c.—

Description of Engines Compound diagonal (two sets) No. of Cylinders four
 Diam. of Cylinders 18" & 36" Length of Stroke 36" Rev. per minute 40 Point of Cut off, High Pressure var Low Pressure var.
 Diameter of ~~screw~~ ^{wheel} shaft 9" Diam. of Tunnel shaft — Diam. of Crank shaft journals — Diam. of Crank pin 9" size of Crank webs 7 x 10"
 Diameter of ~~screw~~ ^{wheel} 14-4 1/2" Pitch of screw — No. of ~~blades~~ ^{flats} 8. state whether moveable yes total surface 6'-6" x 2'-4"
 No. of Feed pumps Two diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two diameter of ditto 3" Stroke 18" 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 4" x 2 3/4" x 6" Where do they pump from Sea, bilges & forewell
heads.
 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 3" Are they connected to condenser or to circulating pump yes
 How are the pumps worked by levers.
 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 about
 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 stocks before launching
 Is the screw shaft tunnel watertight — and fitted with a sluice door — worked from —

BOILERS, &c.—

No. of Boilers One Description Multitubular Material Steel Letter (for record) S.
 Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs. Date of test 30th April 1890
 Description of superheating apparatus or steam chest none
 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 60 Description of safety valves direct spring No. to each boiler two
 Area of each valve 11.04" 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~~ 15 Diameter of boilers 13'-6"
 Length of boilers 10'-0" description of riveting of shell long. seams d. butt str. circum. seams d. riv lap Thickness of shell plates 7/8"
 Diameter of rivet holes 1 3/16" whether punched or drilled drilled pitch of rivets 4 3/4" Lap of plating 12" butt str.
 Percentage of strength of longitudinal joint 75.5 working pressure of shell by rules 105 lbs size of manholes in shell 12" x 16"
 Size of compensating rings Forged ring No. of Furnaces in each boiler 3. Description of Furnaces plain
 Outside diameter 43" length 7'-0" thickness of plates 9/16" description of joint butt str. if rings are fitted no
 Greatest length between rings — working pressure of furnace by the rules 100 lbs combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"
 Pitch of stays to ditto, sides 8 3/4" back 8 1/2" top 8 3/4" If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 101 lbs
 Diameter of stays at smallest part 1 1/2" working pressure of ditto by rules 100 lbs end plates in steam space, thickness 13/16"
 Pitch of stays to ditto 17" x 15" how stays are secured d. nuts working pressure by rules 100 lbs diameter of stays at smallest part 2 1/4"
 Greatest pitch of stays — working pressure by rules — Diameter of tubes 3 1/2" pitch of tubes 4 3/4" thickness of tube plates, front 13/16" back 3/4" how stayed Stubs pitch of stays 9 1/2" x 14 1/4" width of water spaces 6"
 Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —
 Pitch of rivets — working pressure of shell by rules — 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 — how stayed —
 Superheater or steam chest; how connected to boiler —

9996 lbs.

DONKEY BOILER— Description *Cochran's Patent*
 Made at *Birkenhead* by whom made *Cochrane & Co* when made *1890* where fixed *stoke hold*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *2787* fire grate area *12 ft²* description of safety
 valves *direct spring* No. of safety valves *one* area of each *7* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *5'-0"* length *9'-6"* description of riveting *double*
 Thickness of shell plates *3/8"* diameter of rivet holes *13/16"* whether punched or drilled *drill* pitch of rivets *2 7/16"* lap of plating *4 5/8"*
 per centage of strength of joint *70 lbs* thickness of crown plates *3/8"* stayed by *dished & gunnet stays*
 Diameter of furnace, top — bottom *3'-6"* length of furnace — thickness of plates *9/16"* description of joint *lap*
 Thickness of furnace crown plates *9/16"* stayed by *uptake & dished* working pressure of shell by rules *100 lbs*
 Working pressure of furnace by rules *100 lbs* diameter of uptake *14"* thickness of plates *1/2"* thickness of water tubes *pl 2 1/2"*

SPARE GEAR. State the articles supplied:— *12 floats and feathering gear for*
for four floats. Condenser tubes. Top and bottom end
bolts. Feed & bilge pump valves — Bolts nuts
iron assorted —

The foregoing is a correct description,
Fleming & Ferguson Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The above mentioned*
engines and boilers have been built under special
survey and are now completed onboard in a satis-
factory manner and in my opinion eligible to the
notation of: T.L.M.C. 7.90.

The machinery having been tried
under steam and safety valves adjusted, the paddle
wheels and mountings have been disconnected
and it is intended to sail the vessel out to her
destination. —

It is submitted that this vessel
is eligible to have a machinery certificate
granted + of L.M.C. 7.90 recorded, the date of
the certificate to be that of the trial of the
machinery under steam. The records of the
+ L.M.C. in the book to be after main engine
and a notation made of Sailing Ship (Pro Temp)

C. W. L.

The amount of Entry Fee .. £ *1 : 0 : 0* received *by*
 Special .. £ *13 : 10 : 0*
 Donkey Boiler Fee .. £ .. : .. :
 Certificate (if required) .. £ .. : .. :
 To be sent as per margin. *29/7/90*

John Sanderson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute **TUES 29 JULY 1890** **TUES. 2 JUN 1891**
Glasgow.
Afterwards record to be exchanged and notation made of "Sailing Ship"