

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 16th August 1889 Last Survey 22nd July 1890.
 Reg. Book. on the Paddle Steamer "Manna" (Number of Visits 86) 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~~ 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~~ shaft 14" 4 1/2" Pitch of screw — No. of blades 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 & hotwell 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 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" x 1 3/8" working pressure of ditto by rules 100 lbs end plates in steam space, thickness 1 3/16"
 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" bars working pressure by rules 106 lbs. Front plates at bottom, thickness 1 3/16" Back plates, thickness 1 3/16"
 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 1 3/16" 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 —

DONKEY BOILER— Description

Made at Birkenhead by whom made Cochran's Patent 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 & gunet 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 on board in a satis-
 factory manner and in my opinion eligible to the
 notation of: + 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 record of the
 + L.M.C. in the book. to be afterwards expunged
 and a notation made of Sailing Ship (Pro Temp)

The amount of Entry Fee .. £ 1 : 0 : 0 received by

Special .. £ 13 : 10 : 0

Donkey Boiler Fee .. £ 0 : 0 : 0

Certificate (if required) .. £ 0 : 0 : 0

To be sent as per margin.

(Travelling Expenses, if any, £ ..)

Committee's Minute

TUES 29 JULY 1890

TUES. 2 JUN 1891

John Sanderson

Engineer Surveyor to Lloyd's Register of British & Foreign Ships

Glasgow.

+ L.M.C. 7/90
Afterwards recd & the expunged and notation made of "Sailing Ship"