

REPORT ON MACHINERY.

9434

No. 9434 Port of Glasgow Received at London Office THURS 24 OCT 1889
 No. in Survey held at Glasgow Date, first Survey 28th March 1889 Last Survey Oct 12th 1889
 Reg. Book. 806 on the S. S. "Clan Stuart" (Number of Visits 20) 1355
 Tons 2094
 Master Schofield Built at Glasgow By whom built A. McMullan & son When built 1849-2
 Engines made at Glasgow By whom made J. Rowan & son when made 1849
 " Triple " " A. Stephen & son " " " "
 Boilers made at Glasgow By whom made A. Stephen & son when made 1889-10m
 Registered Horse Power _____ Owners Cayzer Irvine & Co Port belonging to Glasgow

ENGINES, &c.—
 Description of Engines Now altered to Triple Expansion
 Diameter of Cylinders 22" 36" 59" Length of Stroke 42" No. of Rev. per minute _____ Point of Cut off, High Pressure variable Low Pressure 1/16"
 Diameter of Screw shaft 12" Diam. of Tunnel shaft _____ Diam. of Crank shaft journals 12 1/2" Diam. of Crank pin 12 1/2" size of Crank webs 8 3/4" x 16 1/2"
 Diameter of screw 16 1/2" Pitch of screw 1 1/2" 6" No. of blades 4 state whether moveable Yes total surface 62 1/2"
 No. of Feed pumps Two diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes
 Where do they pump from All Compartments
 No. of Donkey Engines Four Size of Pumps 8" 6" x 18" Weir's Where do they pump from Sea Bilge Hotwell
and Ballast Tanks - " 4 x 12"
 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 _____ Are they connected to condenser, or to circulating pump To circulating
 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 _____
 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 Bilge pipe to Lockhold How are they protected By wood 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 Oct 5th 1889
 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 (Single end) Whether Steel or Iron Steel
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 6th July 1889
 Description of superheating apparatus or steam chest none
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes
 No. of square feet of fire grate surface in each boiler 60 ft² Description of safety valves Direct Spring No. to each boiler Two
 Area of each valve 4" Are they fitted with easing gear Yes No. of safety valves to superheater _____ area of each valve _____
 Are they fitted with easing gear Yes Smallest distance between boilers and bunkers or woodwork _____ Diameter of boilers 15 1/2"
 Length of boilers 11' 9" description of riveting of shell long. seams Treble twisted circum. seams Treble Thickness of shell plates 1 1/16"
 Diameter of rivet holes 1 5/16" whether punched or drilled Drilled pitch of rivets 8 5/8" Lap of plating Straps 22" x 1 1/2"
 Per centage of strength of longitudinal joint 84 1/2% working pressure of shell by rules 160 lbs size of manholes in shell 16" x 12"
 Size of compensating rings Doubling plate fitted No. of Furnaces in each boiler Three
 Outside diameter 3' 10" length, top 8' 3" bottom _____ thickness of plates 1 3/32" description of joint Corrugated if rings are fitted _____
 Greatest length between rings _____ working pressure of furnace by the rules 160 lbs combustion chamber plating, thickness, sides 3/16" x 3/16" back 3/16" x 3/16" top 3/16"
 Pitch of stays to ditto, sides 7" x 4" back 4" x 4" top 4" x 4" stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 160 lbs
 Pitch of stays to ditto 15 1/4" x 15 1/4" how stays are secured By double nuts working pressure by rules 160 lbs diameter of stays at smallest part 2 5/8"
 Greatest pitch of stays 12" x 4" working pressure by rules 160 lbs Front plates at bottom, thickness 1 1/16" Back plates, thickness 1 1/16"
 plates, front 1 3/16" back 1 3/16" how stayed By tubes pitch of stays 7 1/2" x 11 1/8" width of water spaces about 4"
 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 _____

Lloyd's Register Foundation

CLS 158-0249

9434. g/s

DONKEY BOILER— Description *Round Vertical cross tubes*
 Made at *Paisley* by whom made *Bow & McLachlan* when made *1889* where fixed *On upper deck*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2361* fire grate area *25 ft²* description of safety
 valves *Direct Spring* No. of safety valves *Two* area of each *5"* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *4 1/2"* length *12' 6"* description of riveting *Double riveted lap*
 Thickness of shell plates *1/16"* diameter of rivet holes *1/8"* whether punched or drilled *Drilled* pitch of rivets *3/8"* lap of plating *4 5/8"*
 per centage of strength of joint *40%* thickness of crown plates *1/16"* stayed by *eight stays + 1 rickstay*
 Diameter of furnace, top *5' 6"* bottom *5' 11"* length of furnace *6' 3"* thickness of plates *1/16"* description of joint *Lap*
 Thickness of furnace crown plates *1/16"* stayed by *As above* working pressure of shell by rules *80 lbs*
 Working pressure of furnace by rules *80 lbs* diameter of uptake *21"* thickness of plates *1/16"* thickness of water tubes *1 1/2" dia 7/16"*

SPARE GEAR. State the articles supplied: *Piece of crank shaft and Propeller shaft*
with set of Propeller blades, 2 main bearing bolts top & bottom
connecting rod bolts set of coupling bolts, & set of valves for all the
pumps, assortment of bolts nuts &c

The foregoing is a correct description
 Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c) *These Engines have now*
been tripled by Messrs A. Stephen & Sons by fitting a
new H and L cylindrs and introducing a line, fits the
low pressure all the other parts of the Engines have been
disconnected and thoroughly overhauled. Sea cocks & valves
also Propeller overhauled in Dry Dock.

Howden's system of forced draught is adopted in
this case

The whole of the machinery and boilers have now
been tried under steam and are now in good order
and safe working condition and eligible in my
opinion to be noted in the Register Book & Lloyd's
M. C. 10/88

It is submitted that this vessel is eligible
to have N. B. 89 & L.M.C. 10.89 recorded
Engines tripled by N.A.
24.10.89

The amount of Entry Fee .. £ - : - : received by me,
 Special .. £ 10 : 10 : - 22/10/89
 Donkey Boiler Fee .. £ 2 : 2 : - 25/10/89
 Certificate (if required) .. £ - : - : 18
 To be sent as per margin.
 (Travelling Expenses, if any, £)

James Mathison
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRIDAY 25 1889**
 + NB 89 *cm 6 10/89*

Clyde District
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