

REPORT ON MACHINERY.

7774

Greenock
No. 9251
Glasgow 7/2/87

Received at London Office JAN 17 1887

No. in Survey held at *Greenock Bowling* Date, first Survey *8th June, 1886* Last Survey *14th Jan., 1887*
Reg. Book. on the *S.S. "Marmion"* (Number of Visits *23*) Tons *444.42*
Master Built at *Bowling* By whom built *Scott & Co.* When built *1886*
Engines made at *Ayr* By whom made *J & J. Young* when made *1886*
Boilers made at *Do* By whom made *Do* when made *1886*
Registered Horse Power *140* Owners *M^r Watt* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting. Triple Expansion.*
Diameter of Cylinders *20.32 & 53* Length of Stroke *36* No. of Rev. per minute *75* Point of Cut off, High Pressure *2 3/4* Intermediate *2 1/2* Low Pressure *2 1/2*
Diameter of Screw shaft *10 1/2* Diam. of Tunnel shafts *9 3/8* Diam. of Crank shaft journals *10* Diam. of Crank pins *10* size of Crank webs *17 x 7*
Diameter of screws *12.6* Pitch of screw *19.0* No. of blades *Four* state whether moveable *no* total surface *48 1/2 square feet*
No. of Feed pumps *Two* diameter of ditto *3 1/2* Stroke *18* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *Two* diameter of ditto *3 1/2* Stroke *18* Can one be overhauled while the other is at work *yes*
Where do they pump from *Engine room. Cargo Holds, & after end of tunnel.*
No. of Donkey Engines *One* Size of Pumps *6" x 10" stroke* Where do they pump from *Sea. Bilges. Ballast tanks & Hot well*
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 *4"* Are they connected to condenser, or to circulating pump *Circulating pump.*
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 *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 *Bilge & tank pipes* How are they protected *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 *on ship before vessel was launched & at Ayr.*
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Engine room top platform.*

BOILERS, &c.—

Number of Boilers *Two* Description *Round Horizontal Multitubular* Whether Steel or Iron *Steel.*
Working Pressure *150 lbs* Tested by hydraulic pressure to *300 lbs per sq. in.* Date of test *20th November 1886.*
Description of superheating apparatus or steam chest *Horizontal Receiver.*
Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no Superheater.*
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 *7.06 sq. in.* 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 *9" from Coals in the saloon bunkers.* Diameter of boilers *11' 3"*
Length of boilers *10' 6"* description of riveting of shell long. seams *Double butt straps and drilled* circum. seams *Double* Thickness of shell plates *1 3/32 full*
Diameter of rivet holes *1 1/8 full* whether punched or drilled *punched and drilled* pitch of rivets *5 1/2 full* Lap of plating *18" straps*
Per centage of strength of longitudinal joint *78.7* working pressure of shell by rules *156 lbs* size of manholes in shell *15 1/2 x 11 1/2*
Size of compensating rings *6 1/2 broad x 1 1/2 thick* No. of Furnaces in each boiler *Two* if rings are fitted *bottoms*
Outside diameter *42"* length, top *7' 1"* bottom *9' 9"* thickness of plates *1 3/32* description of joint *Welded*
Greatest length between rings *—* working pressure of furnace by the rules *154 lbs* combustion chamber plating, thickness, sides *9/16* back *9/16* top *9/16*
Pitch of stays to ditto, sides *8" x 8"* back *8" x 8"* top *8" x 8"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *151 1/2* Diameter of stays at smallest part *1 1/4* working pressure of ditto by rules *153 1/2* end plates in steam space, thickness *3/32 full*
Pitch of stays to ditto *14" x 14"* how stays are secured *Double nuts & washers riveted.* working pressure by rules *150 lbs* diameter of stays at smallest part *2 1/16* top row *1 1/16* working pressure by rules *150 lbs* Front plates at bottom, thickness *4/16* doubling plate *5/8 & 1/2 thick* Back plates, thickness *5/8 & 1/2 thick*
Greatest pitch of stays *10 3/4* working pressure by rules *330 lbs* Diameter of tubes *3 1/2* pitch of tubes *4 5/8 x 4 5/8* thickness of tube plates, front *3/4 & 1/2 doubling plate back 3/4 full* how stayed *Stay to tubes* pitch of stays *9 1/4 x 9 1/4* width of water spaces *6 to 7 inches*
Diameter of Superheater or Steam chest *35"* length *5' 0"* thickness of plates *9/16* description of longitudinal joint *Lap double* diam. of rivet holes *1 1/8*
Pitch of rivets *3"* working pressure of shell by rules *237 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 *5/8* how stayed *Four 2" steel stays*
Superheater or steam chest; how connected to boiler *By iron neck 1 1/2" thick*

7774 g/s.

DONKEY BOILER— Description *Round Vertical Steel*
 Made at *Agar* by whom made *J. S. Young* when made *1886* where fixed *Stokehold*
 Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *238* fire grate area *about 10 1/2 sq feet* description of safety
 valves *Direct spring* No. of safety valves *one* area of each *7.06 sq* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *5' 6"* length *11' 0"* description of riveting *vertical double. Cilt single*
 Thickness of shell plates *3/8"* diameter of rivet holes *1 3/16"* whether punched or drilled *punched & annealed* pitch of rivets *vertical 2 1/2"* lap of plating *4"*
 per centage of strength of joint *71* thickness of crown plates *1/2"* stayed by *Six 2" bar stays. Steel*
 Diameter of furnace, top *4' 10"* bottom *5' 1"* length of furnace *5' 3"* thickness of plates *1/2"* description of joint *Lap double riveted*
 Thickness of furnace crown plates *1/2"* stayed by *as above* working pressure of shell by rules *73 lbs*
 Working pressure of furnace by rules *70 lbs* diameter of ^{iron} uptake *14" x 3/8"* thickness of plates *3/8"* thickness of water tubes *3/8" iron*.

SPARE GEAR. State the articles supplied:— *2 Main bearing bolts. 2 Connecting rod top end bolts & nuts. 2 Connecting rod bottom end bolts & nuts. a set of Coupling bolts. 1 set of feed & bilge pump valves. 4 junk ring studs & nuts. 4 tubes for main boilers & one stopper rod. a number of wood stoppers. 6 Condenser tubes. a quantity of bolts. nuts & iron assorted.*

The foregoing is a correct description,

J. S. Young Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers have been specially surveyed during construction. workmanship of good quality. shafts examined when being rough turned & found satisfactory. The engines & Boilers are satisfactorily fitted on board, and tested under full steam. they are now in good order & safe working condition and are in my opinion eligible to be noted in the Register Book L.M.C. 1,87.*

This submitted that this vessel is eligible to have the notification + sm 61 87 recorded

17/1/87

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,
 Special £ 21 : 0 : 0
 Donkey Boiler Fee £ ✓ :
 Certificate (if required) .. £ gratis 14/1/1887
 To be sent as per margin.

(Travelling Expenses, if any, £ 8 : 5 : 0.)

Committee's Minute

TUESDAY 18 JAN 1887

+ L. M. B.

C. L. Heron
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.