

REPORT ON MACHINERY.

No. *8228*

No. in Survey held at *Greenock*
Reg. Book.

Date, first Survey *6th January*

Last Survey *7th July* 18*82*

(Received in London Office *20th 7/1882*)

on the *S. S. "Scotdale"*

Tons *1349.84*
1017.73

Master *C. Houston*

Built at *Greenock*

When built *1882*

Engines made at *Greenock*

By whom made *R. Steele & Co.* when made *1882*

Boilers made at *"*

By whom made *"* when made *1882*

Registered Horse Power *165*

Owners *Robt. Mac Miller & Co.*

Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting*
Diameter of Cylinders *32 & 60* Length of Stroke *42* No. of Rev. per minute *68* Point of Cut off, High Pressure *2.7* Low Pressure *2.3*
Diameter of Screw shaft *11 1/4* Diameter of Tunnel shaft *10 1/4* Diameter of Crank shaft journals *11 1/4* Diameter of Crank pin *11 1/4* size of Crank webs *12 1/4 x 8*
Diameter of screw *15.9* Pitch of screw *16.6 to 18.6* No. of blades *4* state whether moveable *yes* total surface *60 sq feet*
No. of Feed pumps *Two* diameter of ditto *4 1/2* Stroke *21* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *Two* diameter of ditto *4 1/2* Stroke *21* Can one be overhauled while the other is at work *yes*
Where do they pump from *Engine Room & Cargo Holds*
No. of Donkey Engines *Two* Size of Pumps *5 1/2 x 9 & 4 Cent.* Where do they pump from *Donkey pumps from Sea. Hot well & Bilges Centrifugal from Sea & Ballast 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 *6"* Are they connected to condenser, or to circulating pump *to 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 *above*
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 & Ballast Tank pipes* How are they protected *wood casement.*
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 1st June.*
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *E. R. top platform.*

BOILERS, &c.—

Number of Boilers *Two* Description *Round Horizontal Multitubular (all Steel except tubes & stays)*
Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs per sq. in.* Date of test *24.5.82.*
Description of superheating apparatus or steam chest *Round 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 *60 sq feet* Description of safety valves *Direct spring*
No. to each boiler *Two* area of each valve *15.9 sq"* 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 *6 1/2"*
Diameter of boilers *13.0* Length of boilers *10.7* description of riveting of shell long. seams *double riveted* circum. seams *double*
Thickness of shell plates *7/16"* diameter of rivet holes *15/16"* whether punched or drilled *punched* pitch of rivets *3 1/2"*
Gap of plating *13 1/2 Straps* per centage of strength of longitudinal joint *73* working pressure of shell by rules *80 lbs.*
Size of manholes in shell *12 1/2 x 16"* size of compensating rings *7 x 7 1/8"*
No. of Furnaces in each boiler *Three* outside diameter *42 3/4"* length, top *7.3* bottom *9.6*
Thickness of plates *7/16"* description of joint *double butt strap* if rings are fitted *yes* greatest length between rings *4.0 to 4.5 feet*
Working pressure of furnace by the rules *81 lbs*
Combustion chamber plating, thickness, sides *7/16"* back *7/16"* top *7/16"*
Pitch of stays to ditto sides *8 x 8"* back *8 x 7 3/8"* top *7 x 7 1/2"*
Are stays fitted with nuts or riveted heads *Nuts inside & out* working pressure of plating by rules *84 lbs*
Diameter of stays at smallest part *1 1/8 & 1 1/4"* working pressure of ditto by rules *92 lbs*
End plates in steam space, thickness *7/16"* pitch of stays to ditto *14 x 14"* how stays are secured *double nuts*
Working pressure by rules *86 lbs* diameter of stays at smallest part *2 3/8"* L between *3 x 3 x 7/16"* working pressure by rules *138 lbs*
Front plates at bottom, thickness *5/8"* Back plates, thickness *9/16 & 5/8"* greatest pitch of stays *13 1/2 with* working pressure by rules

Diameter of tubes $3\frac{3}{4}$ " pitch of tubes 5×5 " thickness of tube plates, front $\frac{1}{16}$ " back $\frac{1}{16}$ "
 How stayed *Stay Tubes* pitch of stays 10×10 " width of water spaces $6\frac{1}{2}$ "
 Diameter of Superheater or Steam chest 36 " length 7.0 "
 Thickness of plates $\frac{3}{8}$ " description of longitudinal joint *lap double* diameter of rivet holes $\frac{3}{4}$ " pitch of rivet $\frac{1}{2}$ "
 Working pressure of shell by rules 145 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 $\frac{1}{2}$ " How stayed *one bar stay*
 Superheater or steam chest; how connected to boiler *by neck piece*

DONKEY BOILER— Description *Round upright (Steel)*
 Made at *Greenock* By whom made *R. Steele & Co* when made *1882*
 Where fixed *in Atchale* working pressure *70 lbs* Tested by hydraulic pressure to *140 lbs* No. of Certificate *108*
 Fire grate area *16 sq feet* Description of safety valves *Direct spring* No. of safety valves *one* area of each *8.3 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 *Height 18.6*" description of riveting *double & single*
 thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $\frac{13}{16}$ " whether punched or drilled *punched*
 pitch of rivets $2\frac{1}{2}$ " lap of plating 5 " per centage of strength of joint *67*
 thickness of crown plates $\frac{1}{2}$ " stayed by *Four 1 7/8 bar stays*
 Diameter of furnace, top 4.1 " bottom 4.10 " length of furnace 6.9 "
 thickness of plates $\frac{1}{2}$ " description of joint *Lap single*
 thickness of furnace crown plates $\frac{1}{2}$ " stayed by *Four 1 7/8 bar stays*
 Working pressure of shell by rules *95 lbs* working pressure of furnace by rules *80 lbs*
 diameter of uptake 18 " thickness of plates $\frac{1}{2}$ " thickness of water tubes $\frac{7}{16}$ " *Three tubes 9" diam.*

The foregoing is a correct description,

R. Steele & Co. Glasgow Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines & Boilers have been*
Specially surveyed by me during Construction. the Quality of workmanship
is good, & the Machinery & Boilers are now in good order and safe working
Condition, and are in my opinion eligible to be noted in the Register
† LLOYD'S M.C. 7.82.

The amount of Entry Fee .. £ 3 : : , received by me,

July 1st Special £ 24. 15. 0

Certificate (if required) .. £ *Gratis 18th July 1882*

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

Friday, 21st July, 1882.

R. Steele & Co.

Andrew L. McInnes
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Clyde District.