

REPORT ON MACHINERY.

Port of *Glasgow*

Received at London **MON. FEB 5 1900**

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

Date, first Survey *19 August 1898* Last Survey *31 January 1900*
(Number of Visits *98*)

590 on the *S. S. Trent*

Tons { Gross *5343.46*
Net *3084.89*

Master *Monstankine* Built at *Glasgow* By whom built *R Napier & Sons* When built *1900*

Engines made at *Glasgow* By whom made *R Napier & Sons* when made *1900*

Boilers made at *do* By whom made *do* when made *1900*

Registered Horse Power Owners *Royal Mail S.P. Co* Port belonging to *London*

Nom. Hors. Power as per Section 28 *1050* Is Refrigerating Machinery fitted *Ships usually* Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*

Dia. of Cylinders *37.58-97* Length of Stroke *66"* Revs. per minute *70* Dia. of Screw shaft *as per rule 19"* Lgth. of stern bush *6-7"*
 Dia. of Tunnel shaft *as per rule 17.23"* Dia. of Crank shaft journals *as per rule 18.14"* Dia. of Crank pin *21"* Size of Crank webs *38x14 1/2"* Dia. of thrust shaft under collars *19 1/2"* Dia. of screw *20-0* Pitch of screw *27-0* No. of blades *4* State whether moceable *Yes* Total surface *120 f*

No. of Feed pumps *4* Diameter of ditto *10x13 1/2"* Stroke *26"* Wins. Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *6"* Stroke *36"* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *2* Sizes of Pumps *6x7 1/2x6 2 6x6x6* No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room *4 - 3 1/2"* Suctions In Holds, &c. *1 - 2 1/2", 7 - 3" 9 5 - 3 1/2"*

No. of bilge injections *1* sizes *9"* Connected to *condenser, or to circulating pump* Is a separate donkey suction fitted in Engine room & size *Yes - 4"*

Are all the bilge suction pipes fitted with roses *Yes* Are the roses in Engine room always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*

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 *None* How are they protected *—*

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *Yes*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock *19.9.99* Is the screw shaft tunnel watertight *Yes*

Is it fitted with a watertight door *Yes* worked from *Spar Deck level.*

BOILERS, &c.— (Letter for record (5)) Total Heating Surface of Boilers *15384 f* Is forced draft fitted *Howdens*

No. and Description of Boilers *Six S. E. Inult* Working Pressure *180* Tested by hydraulic pressure to *360 lbs*

Date of test *(21.4.99) (2) 8.5.99* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *58 f* No. and Description of safety valves to each boiler *(12.5.99) 2 Spring loaded* Area of each valve *4.62"* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *9"* Mean dia. of boilers *15-3"* Length *11-9"* Material of shell plates *slit*

Thickness *1 1/32"* Range of tensile strength *29/32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Butt* long. seams *Butt*

Diameter of rivet holes in long. seams *1 3/8"* Pitch of rivets *9 1/4"* Lap of plates or width of butt straps *1-8 3/4"*

Per centages of strength of longitudinal joint rivets *88.5* Working pressure of shell by rules *205 lbs* Size of manhole in shell *17" x 12 1/2"* plate *85.13*

Size of compensating ring *Inc nuts* No. and Description of Furnaces in each boiler *3 Howdens* Material *slit* Outside diameter *3.11 1/2"*

Length of plain part top *19"* Thickness of plates crown *19"* Description of longitudinal joint *welded* No. of strengthening rings *—* bottom *32"*

Working pressure of furnace by the rules *198* Combustion chamber plates: Material *slit* Thickness: Sides *9/16"* Back *9/16"* Top *9/16"* Bottom *1"*

Pitch of stays to ditto: Sides *8x7 1/2"* Back *(7 1/2 x 7 1/2) (7 1/2 x 7)* Top *7 3/4 x 7 3/4"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *182*

Material of stays *slit* Diameter at smallest part *1.41"* Area supported by each stay *.60"* Working pressure by rules *188* End plates in steam space: Material *slit* Thickness *1 3/16"* Pitch of stays *16 1/4 x 15 3/4"* How are stays secured *D. Nuts* Working pressure by rules *246* Material of stays *slit*

Diameter at smallest part *6.4"* Area supported by each stay *256"* Working pressure by rules *250* Material of Front plates at bottom *slit*

Thickness *13/16"* Material of Lower back plate *slit* Thickness *15/16"* Greatest pitch of stays *13"* Working pressure of plate by rules *333*

Diameter of tubes *2 1/2"* Pitch of tubes *3 3/4 x 3 3/4"* Material of tube plates *slit* Thickness: Front *13/16"* Back *3/4"* Mean pitch of stays *10 9/16"*

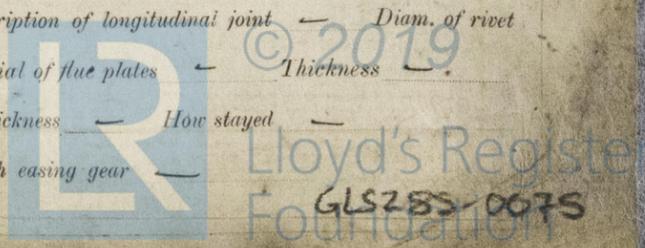
Pitch across wide water spaces *1-2 1/2"* Working pressures by rules *181 lbs* Girders to Chamber tops: Material *slit* Depth and thickness of girder at centre *(9x3 3/4) 2* Length as per rule *2-9"* Distance apart *7 3/4"* Number and pitch of Stays in each *3-7 3/4"*

Working pressure by rules *186* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately *—* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivet holes *—* Pitch of rivets *—* Working pressure of shell by rules *—* Diameter of flue *—* Material of flue plates *—* Thickness *—*

If stiffened with rings *—* Distance between rings *—* Working pressure by rules *—* End plates: Thickness *—* How stayed *—*

Working pressure of end plates *—* Area of safety valves to superheater *—* Are they fitted with easing gear *—*

If not, state whether, and when, one will be sent? Is a Report also sent on the Heat of the Ship?



DONKEY BOILER— No. 1 Description *Cylindrical return tube.*
 Made at *Glasgow* By whom made *R Napier & Sons* When made *1900* Where fixed *Stockholm*
 Working pressure *180* tested by hydraulic pressure to *360* No. of Certificate *4879* Fire grate area *40* Description of safety valves *Spring loaded*
 No. of safety valves *2* Area of each *3.97* Pressure to which they are adjusted *185* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *12.9* Length *9.6* Material of shell plates *Steel* Thickness *1.5* Range of tensile strength *29/32* Descrip. of riveting long. seams *Butt 5 rivets* Dia. of rivet holes *1.2* Whether punched or drilled *drilled* Pitch of rivets *8.5*
 Rivets *92.86* Thickness of shell crown plates *—* Radius of do. *—* No. of Stays to do. *—*
 Plates *85.29* Dia. of stays. *—* Diameter of furnace *Top 3.11 1/2 Bottom 4.0* Length of furnace *6.1 1/2* Thickness of furnace plates *9/16* Description of joint *welded* Thickness of furnace crown plates *—* Stayed by *—* Working pressure of shell by rules *208*
 Working pressure of furnace by rules *199* Diameter of uptake *—* Thickness of uptake plates *—* Thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *As required by the Rules. Also:— 1/3 crank shaft, propeller shaft with bushes, one each HP, IP & LP pistons complete, sets packing rings for HP & IP piston valves, 1 propeller blade, 2 eccentric shafts & one pulley, air pump bucket with rod & valves complete, etc.*
 The foregoing is a correct description,

R. NAPIER & SONS, Limited.

Manufacturer.

John McAnultin.

Dates of Survey while building
 During progress of work in shops— 1898:— *Apr. 19. Sep. 19. 20. 22. 24. 29. Oct. 5. 12. Nov. 9. 14. 17. 21. 25. Dec. 2. 8. 10. 13. 14. 15. 19. 28. Jan. 17. 23. 26. 28. 31. Feb. 3. 10. 13. 15. 16. 20.*
 During erection on board vessel— *Mar. 1. 9. 15. 20. 22. 31. Apr. 6. 8. 10. 11. 17. 19. 21. 24. 27. 28. May 4. 8. 12. 15. 25. 26. 29. 31. Jun 2. 3. 5. 6. 8. 14. 16. 19. 20. 30. Jul. 3. 25. 28. Aug. 1. 3. 10. 17. 31. Sep. 7. 9. 18. 19. 20. 21. Oct. 2. 6. 24. 31. Nov. 14. 28. Dec. 4. 13. 15. 14. 28*
 Total No. of visits *QB. 1900: Jan. 10. 12. 13. 17. 19. 24. 31* Is the approved plan of main boiler forwarded herewith *No*
 " " " donkey " " " *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The engines & boilers of this vessel have been constructed under Special Survey, the workmanship & materials are good & they have been satisfactorily tried under steam.

*This vessel is in my opinion eligible to have notation * L.M.C. 1.00 in the Register Book.*

The plan of the Main Boilers was forwarded with Glasgow Report n^o: 17425 on the S^t Tagus.

It is submitted that this vessel is eligible for THE RECORD. *LMC1.00 FD Ebe. light.

CM.
5.2.00

RL
6.2.00

The amount of Entry Fee.. £ 3 : : : When applied for,
 Special £ 72.10 : : : 2/21/1900
 Donkey Boiler Fee £ : : : 8/21/00
 Travelling Expenses (if any) £ : : : 18.00

H Gardner Smith
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 6 FEB 1900

Assigned

+LMC1.00

MACHINERY CERTIFICATE WRITTEN.



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Lloyd's Register Foundation

Glasgow

Certificate (if required) to be sent to

(The Signatures are requested not to write on or below the space for Committee's Minute.)