

REPORT ON MACHINERY.

Port of

Glasgow

Received at London Office

FRI. 27 JAN 1899

No. in Survey held at

Glasgow

Date, first Survey 16. Dec. 1897 Last Survey 20 January 1899

Reg. Book.

(Number of Visits 77)

on the

Seven Steamers "Motavian"

Tons { Gross 14572.78

Net 2902.57

When built 1899

Master A. Simpson

Built at

Glasgow

By whom built

R. Napier & Sons

Engines made at

Glasgow

By whom made

R. Napier & Sons

when made 1899

Boilers made at

do

By whom made

do

when made 1899

Registered Horse Power

Owners

George Thompson & Co.

Port belonging to

Aberdeen

Nom. Horse Power as per Section 28

643

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders 3

No. of Cranks 3

Diameter of Cylinders 30"-50"-90" Length of Stroke 54" Revolutions per minute 80 Diameter of Screw shaft as per rule 16.2

Diameter of Tunnel shaft as per rule 14.67 Diameter of Crank shaft journals 16.2 Diameter of Crank pin 17" Size of Crank webs 11.2 x 3.1

Diameter of screw 17.6" Pitch of screw 22.0" No. of blades 4 State whether moveable Yes Total surface 88 sq. ft.

No. of Feed pumps 2 Diameter of ditto 5.2" Stroke 26" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5.2" Stroke 26" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 Duplex Sizes of Pumps 9" x 6" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 @ 3.5" and 4 @ 3" In Holds, &c. 2 @ 3.5" and 2 @ 3" in Forward

Holds. 2 @ 3.5" dia. in upper holds

No. of bilge injections 2 sizes 6" Connected to condenser, or to circulating pump Pump Is a separate donkey suction fitted in Engine room & size Yes 3.5" dia.

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 Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Main Deck

BOILERS, &c.—

(Letter for record (40))

Total Heating Surface of Boilers 9026 sq. ft Is forced draft fitted Yes

No. and Description of Boilers Two large built Double ended Working Pressure 250 lbs Tested by hydraulic pressure to 400 lbs

Date of test 11.7.98 Can each boiler be worked separately Yes Area of fire grate in each boiler 115.5 sq. ft No. and Description of safety valves to

each boiler Two direct spring Area of each valve 17.7" Pressure to which they are adjusted 205 lbs Are they fitted

with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean diameter of boilers 14.7 1/2"

Length 19.6 Material of shell plates Steel Thickness 1 1/8" Description of riveting: circum. seams Lap 2 x 3 R. long. seams J. Butt 5 R. thick

Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" Lap of plates or width of butt straps 1-10"

Per centages of strength of longitudinal joint rivets 98.5 Working pressure of shell by rules 229 Size of manhole in shell 17" x 12 1/2"

Size of compensating ring 1/2" No. and Description of Furnaces in each boiler 6 Curries Material Steel Outside diameter 3.7 1/2"

Length of plain part top 1 1/2" Thickness of plates crown 3/8" Description of longitudinal joint welded No. of strengthening rings 1

Working pressure of furnace by the rules 214 Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 1/2" Top 5/8" Bottom 3/8"

Pitch of stays to ditto: Sides 7/8" x 7/8" Back 7/8" x 7/8" Top 7/8" x 7/8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 248

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 52.25 Working pressure by rules 194 End plates in steam space:

Material Steel Thickness 1 1/8" Pitch of stays 16 1/2" x 14 1/2" How are stays secured D. Nuts Working pressure by rules 272 Material of stays Steel

Diameter at smallest part 2.63 Area supported by each stay 229.5 Working pressure by rules 237 Material of Front plates at bottom Steel

Thickness 1/8" Material of Lower back plate Steel Thickness 1/8" Greatest pitch of stays 1/8" Working pressure of plate by rules 237

Diameter of tubes 2 1/2" Pitch of tubes 3 1/2" x 3 1/2" Material of tube plates Steel Thickness: Front 1/8" Back 1/16" Mean pitch of stays 8 1/2"

Pitch across wide water spaces 14" Working pressures by rules 237 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 11" x 7 1/2" x 2 Length as per rule 4' 2 3/8" Distance apart 7 1/2" Number and pitch of Stays in each 5 @ 7 1/2"

Working pressure by rules Centre Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet

holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

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

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

GLS183-0060

Lloyd's Register
Foundation

16720 glos

DONKEY BOILER— Description *One cyl. boiler single ended*
Made at *Glasgow* By whom made *R. Kaper & Sons* When made *Spot deck*
Working pressure *96 lbs* Tested by hydraulic pressure to *180 lbs* No. of Certificate *4709* Fire grate area *29 1/2* Description of safety valves *Two direct spring*
No. of safety valves *2* Area of each *5.9* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *9.6* Length *9.6* Material of shell plates *Steel* Thickness *7/16*
Description of riveting long. seams *Double punched lap* Diameter of rivet holes *3/8* Whether punched or drilled *Drilled* Pitch of rivets *3 1/4*
Lap of plating *6 1/2* Per centage of strength of joint *72.2* Rivets *72.2* Thickness of shell *7/16* plates *7/16* Radius of do. *✓* No. of Stays to do. *✓*
Dia. of stays *✓* Diameter of furnace *2.9* Bottom *✓* Length of furnace *7.0* Thickness of furnace plates *1/2* Description of joint *Welded* Thickness of furnace crown plates *✓* Stayed by *✓* Working pressure of shell by rules *91 lbs*
Working pressure of furnace by rules *96 lbs* Diameter of uptake *✓* Thickness of uptake plates *✓* Thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *One propeller shaft, 1/2 crank shaft, two propeller blades (bronze), one Thomson's patent shaft coupling, eight coupling bolts & nuts, one piston rod common to the three cylinders, one set of Rambottom rings for each piston, and all the usual spare gear.*

The foregoing is a correct description,
R. Kaper Manufacturer.

Dates of Survey while building
During progress of work in shops— *1897. Dec. 16. 18. 25. Feb. 17. 19. Mar. 15. 16. 19. 30. Apr. 2. 9. 18. 19. May 13. 15. 17. 20. 23. 26. 30. June 2. 9. 13. 15. 17. 20. 23. 26. 30. July 4. 5. 8. 11. 12. Aug. 1. 3. 5. 6. 8. 10. 15. 19. 24. 26. 29. 30. Sep. 2. 8. 13. 17. 20. 22. 27. 29. Oct. 5. 11. 13. 21. 27. Nov. 1. 5. 14. 18. 22. 25. 27. Dec. 2. 5. 12. 27. 1899 Jan. 10. 11. 12. 13. 16. 20.*
Total No. of visits *277*

General Remarks (State quality of workmanship, opinions as to class, &c.)
ENGINES—Length of stern bush *5.9* Diameter of crank shaft journals *as per rule 15.45* Diameter of thrust shaft under collars *16 1/4*
BOILERS—Range of tensile strength *29-32* Are they welded or flanged *✓* DONKEY BOILERS—No. *1* Range of tensile strength *27-30*
Is the approved plan of main boiler forwarded herewith *yes* Is the approved plan of donkey boiler forwarded herewith *yes*

The machinery of this vessel has been constructed under Special Survey, & is of good materials & workmanship. It has been carefully fitted on board, & satisfactorily tested under steam.
One of Hooper's 120000 cub. feet duplex dry air Refrigerating machines has been fitted on board, for refrigerating the holds & cargo, for description of installation see accompanying report.
The electric lighting installation has been fitted by Messrs Glanville Hamilton, Glasgow.
The machinery of this vessel is eligible, in my opinion, to be classed, & to have record of *+LMC 1-99* in the Register Book (see letter to Secretary re circulating pump valve chamber door, attached hereto)

Approved plan of main steam pipes & report on cast steel main steam pipes forwarded herewith.

The amount of Entry Fee... £ 3 : :
Special ... £ 52 : 3 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, *19/11/99*
When received, *20/11/99*

Committee's Minute
Assigned

W. H. Cullen
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
It is submitted that this vessel is eligible for THE RECORD. L.M.C. 1.99. F.D. Electric Light
Lloyd's Register
2.2.99
MACHINERY CERTIFICATE
WRITTEN. 2.2.99

Glasgow
Certificate (if required) to be sent to
(The Surveyors are requested not to write on or below the space for Committee's Minute.)