Rpt. 4.

No. 17024

REPORT ON MACHINERY.

Port of Glasgow

Received at London Office WED. 24 MAY 1899 18

No. in Reg. Book. Survey held at Glasgow Date, first Survey 8th February 1898 Last Survey 20th May 1899 (Number of Visits 57)

on the S S Canadia. Tons Gross 4314 Net 2789.

Master C E Troensegaard Built at Dumbarton By whom built A McMillan & Son Ld When built 1898

Engines made at Glasgow By whom made David Rowan & Co when made 1899.

Boilers made at Glasgow By whom made David Rowan & Co when made 1899.

Registered Horse Power Owners Heckscher & Sons Port belonging to Copenhagen.

Nom. Horse Power as per Section 28 326 Is Refrigerating Machinery fitted No Is Electric Light fitted No

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

Dia. of Cylinders 25, 41 & 67" Length of Stroke 48 Revs. per minute 66 Dia. of Screw shaft as per rule 13.3" as fitted 13 3/4" Lgth. of stern bush 56 1/2"

Dia. of Tunnel shaft as per rule 12" as fitted 12 1/2" Dia. of Crank shaft journals as per rule [illegible] as fitted 13 1/4" Dia. of Crank pin 13 5/8" Size of Crank webs 25"×8 3/4" Dia. of thrust shaft under collars 13 3/4" Dia. of screw 17'-0" Pitch of screw 11'-10 1/2" to 19'-0" No. of blades 4 State whether moveable No Total surface 89 ft.

No. of Feed pumps 2 Diameter of ditto 3 3/4" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Three Sizes of Pumps (8×5×8)(9×10×12)(5 1/4×3 1/2×5") No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Four, 3 1/2" diam.r In Holds, &c. One 3 1/2 Port, one 3 1/2 Starboard in No 1, 2, & 3, one 3" in No 4, and one 3" in tunnel well.

No. of bilge injections one sizes 5" Connected ~~to condenser,~~ to circulating pump — Is a separate donkey suction fitted in Engine room & size Yes. 3 1/2"

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 Valves and cocks

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 & tank Pipes to 1 & 2 holds How are they protected Wood boxing.

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 15th May 99 Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Top engine room platform.

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 4882 ft Is forced draft fitted No

No. and Description of Boilers Two, Single Ended Working Pressure 180 lbs Tested by hydraulic pressure to 360

Date of test 27/4/99 Can each boiler be worked separately Yes Area of fire grate in each boiler 72 ft No. and Description of safety valves to each boiler Two direct spring Area of each valve 11.80 □" 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 4 feet. Mean dia. of boilers 16'-0" Length 11'-6" Material of shell plates Steel

Thickness 15/16" Range of tensile strength 28/32 Are they welded or flanged Neither Descrip. of riveting: cir. seams Double R Lap long. seams Treble R Butt.

Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 7/8" ~~Lap of plates on~~ width of butt straps 19 1/4"

Per centages of strength of longitudinal joint rivets 86.5 plate 85.2 Working pressure of shell by rules 185 lbs Size of manhole in end 16"×12"

Size of compensating ring Flanged No. and Description of Furnaces in each boiler Three, Morison Material Steel Outside diameter 52 1/2"

Length of plain part top 4" bottom 32" Thickness of plates crown 19/32" bottom 19/32" Description of longitudinal joint Welded No. of strengthening rings None

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32" Back 9/16" Top 5/8" Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/2"×7 1/2" Back 8"×7 1/2" Top 8"×9" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 182

Material of stays Steel ~~Diameter~~ area at smallest part 1.47 2.08 □" Area supported by each stay 72 64 □" Working pressure by rules 184 End plates in steam space:

Material Steel Thickness 1 1/8" Pitch of stays 19"×17" How are stays secured Double nuts & washers Working pressure by rules 184 Material of stays Steel

~~Diameter~~ area at smallest part 6.20 □" Area supported by each stay 322 □" Working pressure by rules 192 Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate 11/16" Steel Thickness 11/16" Greatest pitch of stays 13 1/2" Working pressure of plate with 11/16 Double ^ by rules 308

Diameter of tubes 3" Pitch of tubes 4 1/4" Material of tube plates Steel Thickness: Front 11/16" Back 3/4" Mean pitch of stays 8 1/2"

Pitch across wide water spaces 12" Working pressures by rules 194 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 9"×2 1/4" Length as per rule 36" Distance apart 9" Number and pitch of Stays in each Three, 8"

Working pressure by rules 184 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

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GLS184-012

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DONKEY BOILER— No. Description See attached report.

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers enter the donkey boiler Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets

Lap of plating Per centage of strength of joint Rivets Plates Thickness of shell crown plates Radius of do. No. of Stays to do.

Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint Thickness of furnace crown plates. Stayed by Working pressure of shell by rules

Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied :— As required by the rules. also, one propeller shaft, one propeller, top + bottom end brasses, one air, and one circulating pump rod, eccentric straps, valve spindle + guide shoe.

The foregoing is a correct description,

David Rowan & Co Manufacturer.

per pro

Dates of Survey while building — During progress of work in shops — 1898:- Feb. 8. Mar. 20 ... July. 5. 13. Oct. 22. Nov. 14. 18. 25. 30. Dec. 2. 7. 16. 20. 27. 1899 Jan. 12. 18. 26. 30. 31. Feb. 4.

During erection on board vessel — 11. 14. 20. 22. Mar. 1. 8. 6. 10. 13. 15. 17. 20. 21. 22. 25. 26. 27. 29. May. 3. 4. 5. 6. 8. 9. 10. 11. 12. 13. 15. 18. 20.

Total No. of visits 57

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " " Yes.

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

The machinery of this vessel has been built under special survey. The material and workmanship being of good quality, it has been securely fitted on board and a satisfactory full speed trial run.

In my opinion the machinery of this vessel is now eligible for record of ✠ L M C. 5-99 (in red) in register book.

The plans of main and donkey boilers and two forging reports now forwarded.

Glasgow

Certificate (if required) to be sent.

(The Surveyors are requested to write on or below the space for Committee's Minutes)

It is submitted that this vessel is eligible for THE RECORD. ✠ L.M.C. 5.99.

A.C.H.

24.5.99

24.5.99

The amount of Entry Fee .. £ 3 : : When applied for, 23/5/1899

Special .. .. .. £ 36 : 6 : : 26/5/99

Donkey Boiler Fee .. .. £ : : When received, 25/5/99

Travelling Expenses (if any) £ : :

FRI. 26 MAY 1899

MACHINERY CERTIFICATE WRITTEN.

George Murdoch.

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

Committee's Minute

Assigned + L.M.C. 5.99

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