

No. 12986

REPORT ON MACHINERY.

Port of Glasgow

Received MON in Office JUN 1894

No. in Survey held at Glasgow

Date, first Survey 12th Nov. 1889 Last Survey 25th May 1894

Reg. Book. 321. on the S. S. Dorset

(Number of Visits 17)
Gross Tons 2638
Net Tons 1636

Master L. Mackenzie Built at Sunderland By whom built J. L. Thomson & Son When built 1881

Engines made at Sunderland By whom made George Clark when made 1881

Boilers made at Glasgow By whom made James Howden & Co when made 1894

Registered Horse Power 300 Owners Marbeth Gray Port belonging to Glasgow

Nom. Horse Power as per Section 28

ENGINES, &c.— Description of Engines Compound No. of Cylinders

Diameter of Cylinders 37" x 76 Length of Stroke 48" Revolutions per minute Diameter of Screw shaft as per rule
as fitted 14"

Diameter of Tunnel shaft as per rule Diameter of Crank shaft journals 14" Diameter of Crank pin Size of Crank webs
as fitted

Diameter of screw Pitch of screw No. of blades State whether moveable Total surface

No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room In Holds, &c.

No. of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size

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

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers How are they protected

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

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

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

Is it fitted with a watertight door worked from

BOILERS, &c.— (Letter for record (r.)) Total Heating Surface of Boilers 3500

No. and Description of Boilers Two Multitubular Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs

Date of test 12/11/89 Can each boiler be worked separately Yes Area of fire grate in each boiler 59^{sq} No. and Description of safety valves to each boiler 2 direct spring Area of each valve 15.9^{sq} Pressure to which they are adjusted 80 lbs Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean diameter of boilers 14.6"

Length 11-2' Material of shell plates steel Thickness 25/32 Description of riveting: circum. seams d. riv. lap long. seams d. butt str.

Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 5 1/4" Lap of plates or width of butt straps 12"

Per centages of strength of longitudinal joint rivets 80. Working pressure of shell by rules 93 lbs Size of manhole in shell 12 x 16"

Size of compensating ring 7/8 dbl. pl. No. and Description of Furnaces in each boiler 3. Adamsons Material Steel Outside diameter 42"

Length of plain part top 33-11 1/2 Thickness of plates bottom 32-15/32 Description of longitudinal joint welded No. of strengthening rings 2.

Working pressure of furnace by the rules 116 lbs Combustion chamber plates: Material Steel Thickness: Sides 15/32 Back 15/32 Top 15/32 Bottom 15/32

Pitch of stays to ditto: Sides 9" Back 9 x 7 1/2" Top 9 x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 83 lbs

Material of stays iron Diameter at smallest part 1 3/8 Area supported by each stay 81^{sq} Working pressure by rules 93 lbs End plates in steam space:

Material steel Thickness 5/8 Pitch of stays 17 1/2" How are stays secured d. nuts Working pressure by rules 80 lbs Material of stays steel

Diameter at smallest part 2" Area supported by each stay 306.25^{sq} Working pressure by rules 80 lbs Material of Front plates at bottom steel

Thickness 5/8 Material of Lower back plate steel Thickness 5/8 Greatest pitch of stays 11 1/4" Working pressure of plate by rules 80 lbs

Diameter of tubes 3" Pitch of tubes 4 1/4" Material of tube plates steel Thickness: Front 1/16 Back 1/16 Mean pitch of stays 10 5/16

Pitch across wide water spaces 14 1/2" Working pressures by rules 81 lbs Girders to Chamber tops: Material iron Depth and thickness of girder at centre 5" x 1 1/2" Length as per rule 26 1/2" Distance apart 8" Number and pitch of Stays in each 2. 9 in

Working pressure by rules 89 lbs Superheater or Steam chest; how connected to boiler — 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 seen.

In c.

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Old DONKEY BOILER— Description *Vertical fitted with new steam space stays & exam^d over all parts*

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 *55 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____

Description of riveting long. seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ of rivets _____

Lap of plating _____ Per centage of strength of joint _____ Rivets _____ 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 _____

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:—

The foregoing is a correct description, Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The vessel has been put in dry dock (Govanok) propeller shaft drawn and found in good order. All sea connections overhauled and put in good order. — Cylinders opened up, liner fitted in the H.P. Cylinder reducing diameter by 3" new piston fitted to suit same. — L.P. Cyl^r, Slide Valves, piston & rods exam^d. Crank shaft exam^d and found in fair condition. All tunnel shafting exam^d. — Condenser Air feed, bilge, circulating and donkey pumps overhauled and exam^d.*

These boilers, now fitted, were commenced under the survey of the Liverpool Underwriters Surveyors, but, as the vessel was lost for which the boilers were intended, they were put aside. — In Nov. 1889 they were tested in my presence to 160 lbs and since then they have been under cover and when examined at the time of fitting on board they were found sound and free from any corrosion and under steam they were tight and satisfactory. The mountings and uptakes have been fitted now to suit the vessel.

This vessel's machinery is now in our opinion in good working order and eligible to the notation of: — L. M. G. 5,94 N. B. 94. —

Secretary & owner's letters re. new boilers attached also boiler tracing.

Certificate (if required) to be sent to *Glasgow*

The amount of Entry Fee. £ _____

Special £ 4 : " : : *29/5/94*

Donkey Boiler Fee 3 £ 10 : 10 : : *24/2/94*

Travelling Expenses (if any) £ : : : *29/5/94*

When applied for, *29/5/94*

When received, *29/5/94*

James Morrison Engineer Surveyor to Lloyd's Register of British & Foreign Ships

TUES. 27 AUG 1895

Committee's Minute TUES. 12 JUN 1894

MACHINERY CERTIFICATE WRITTEN.

Assigned *L M G 5,94 made N B 94 fitted 94*



FRI. 22 NOV 1895