

REPORT ON MACHINERY.

Port of Glasgow

Received at London Office

TUES. MAR 19 1907

No. in Survey held at Glasgow

Date, first Survey 12 Dec 04 Last Survey March 8 1907

Reg. Book.

(Number of Visits)

84 on the J J Bankdale

Master W Hamilton & Co Built at Port Glasgow By whom built W Hamilton & Co Tons Gross 1907 Net 1907 When built 1907

Engines made at Glasgow By whom made David Rowan & Co (H20) when made 1907

Boilers made at do By whom made do when made 1907

Registered Horse Power W Just & Co (Ings) Owners W Just & Co (Ings) Port belonging to Liverpool

Nom. Horse Power as per Section 28 387 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 25 1/2 - 42 - 70 Length of Stroke 45 Revs. per minute 14 1/2 Dia. of Screw shaft 14 1/2 Material of screw shaft Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned — If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4-10

Dia. of Tunnel shaft 12 1/2 Dia. of Crank shaft journals 13 1/2 Dia. of Crank pin 14 1/2 Size of Crank webs 8 1/2 Dia. of thrust shaft under collars 14 1/4 Dia. of screw 17-3 Pitch of Screw 18-3 No. of Blades 4 State whether moceable No Total surface 96

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 3 Sizes of Pumps 9x2x10, 6x6x4, 5x4x3 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4-3 1/2 In Holds, &c. 2-3 1/2 each hold

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump Yes 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 —

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 Always

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 For 2 suction How are they protected Wood covering

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

Dates of examination of completion of fitting of Sea Connections 9 of Stern Tube 9 Screw shaft and Propeller See R. Rpt.

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top grating

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel The Clyde Bridge Steel Co Ltd

Total Heating Surface of Boilers 5106 Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 30/11/06 No. of Certificate 8396

Can each boiler be worked separately Yes Area of fire grate in each boiler 60.5 No. and Description of Safety Valves to each boiler 2 Spring Area of each valve 9.6 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork Abt. 14" Mean dia. of boilers 15.3 Length 11-9 Material of shell plates Steel

Thickness 1 1/2 Range of tensile strength 28 1/2 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D. R. L. long. seams A. B. S. Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 8 1/16 Lap of plates or width of butt straps 19 1/4

Per centages of strength of longitudinal joint 93.7 Working pressure of shell by rules 180 lb Size of manhole in shell 16x12

Size of compensating ring 2.9x2.5 No. and Description of Furnaces in each boiler 3 Fours Material Steel Outside diameter 4-0 1/4

Length of plain part — Thickness of plates — Description of longitudinal joint weld No. of strengthening rings —

Working pressure of furnace by the rules 208 Combustion chamber plates: Material Steel Thickness: Sides 3 1/32 Back 3 1/32 Top 3 1/32 Bottom 3 1/4

Pitch of stays to ditto: Sides 8 1/2 x 8 1/2 Back 10 x 8 Top 8 1/2 x 9 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 184 lb

Material of stays Steel Diameter at smallest part 2.07 Area supported by each stay 81 Working pressure by rules 204 End plates in steam space: Material Steel Thickness 1 1/32 Pitch of stays 19 1/2 x 16 1/4 How are stays secured D. R. L. Working pressure by rules 180 Material of stays Steel Diameter at smallest part 6.41 Area supported by each stay 325 Working pressure by rules 197 Material of Front plates at bottom Steel Thickness 7/8 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 14 3/4 Working pressure of plate by rules 188

Diameter of tubes 2 1/2 Pitch of tubes 3 1/4 x 3 5/8 Material of tube plates Steel Thickness: Front 1 Back 7/8 Mean pitch of stays 9

Pitch across wide water spaces 13 3/4 Working pressures by rules 190 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 3/4 x 7 1/2 Length as per rule 33 Distance apart 9 1/2 Number and pitch of stays in each 3-8 1/2

Working pressure by rules 220 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 —

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description *Multitubular See Rpt. 5.*
 Made at *Glasgow* By whom made *David Rowan & Co.* When made _____ Where fixed _____
 Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety Valves _____
 No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____
 If fitted with easing gear _____ If steam from main boilers can 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 _____
 Working pressure of shell by rules _____ 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 _____
 Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *Propeller, tail shaft, set and pump valves, set circulating pump valves, for top and brasses, for bottom end brasses, top half eccentric strap, etc, & the bolts etc required by the Rules.*

The foregoing is a correct description,

David Rowan & Co. Manufacturer.

Dates of Survey while building
 During progress of work in shops— 1907: Dec 12, 15, 1905: Jan 9, 16, 23, Feb 9, 16, Mar 1, 2, 9, 11, 21, Apr 6, 13, 27, May 5, 17, 29, Jun 12, 16, 29, Jul 12, Aug 1, 11, Oct 4, 19.
 During erection on board vessel— Nov 16, Dec 7, 11, 18, 28, 29, 1906: Jan 4, 19, Feb 6, 9, Mar 5, 12, 16, Apr 9, 21, 29, May 21, Jun 22, Sep 2, 5, Oct 25, 29, 31, 1907: Nov. 2, 9, 12, 20, Dec. 13, 20, 30, 1907, Jan. 11, 14, 16, 21, 25, Feb. 20, 28, Mar. 2, 9,
 Total No. of visits *69*

Is the approved plan of main boiler forwarded herewith *same as "donkey" "S.S. Banda"*

Dates of Examination of principal parts—Cylinders *2/9/06 etc* Slides *2/9/06 etc* Covers *2/9/06 etc* Pistons *2/9/06 etc* Rods *2/9/06 etc*
 Connecting rods *2/9/06 etc* Crank shaft *7/10/06 etc* Thrust shaft *7/10/06 etc* Tunnel shafts *7/10/06 etc* Screw shafts *9/11/05 etc* Propeller *20/12/06*
 Stern tube *20/12/06* Steam pipes tested *29/11/06, 26/2/07* Engine and boiler seatings *20/2/07* Engines holding down bolts *28/2/07*
 Completion of pumping arrangements *2/3/07* Boilers fixed *2/3/07* Engines tried under steam *2nd 8th 1907*
 Main boiler safety valves adjusted *2/3/07* Thickness of adjusting washers *D.S. 14/32 P. 17/32 P. 5 14/32 P. 13/32*
 Material of Crank shaft *Iron* Identification Mark on Do. *(HGS)* Material of Thrust shaft *Steel* Identification Mark on Do. *(HGS)*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *(HGS)* Material of Screw shafts *Steel* Identification Marks on Do. *(HGS)*
 Material of Steam Pipes *Copper* Test pressure *360 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been seawisely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible to have notation L.M.C. 3.07 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. 3.07.*
 F.D.
 ELEC LIGHT.

20/3/07

The amount of Entry Fee... £ *3* : :
 Special ... £ *39* : *7* :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 Glasgow 1 MAR 1907

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

Committee's Minute
 Assigned *L.M.C. 3.07*



Certificate (if required) to be sent to

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