

# REPORT ON MACHINERY.

No. 25289

Port of Glasgow

Received at London Office TUES. 21 MAY 1907

No. in Survey held at Glasgow Date, first Survey 7 Dec 05 Last Survey 8 May 1907

Reg. Book. 153 on the S.S. "Strathdee" (Number of Visits)

Master Port Glasgow Built at Port Glasgow By whom built R. Duncan & Co. Ltd When built 1907

Engines made at Glasgow By whom made David Rowan & Co. when made 1907

Boilers made at do By whom made do when made 1907

Registered Horse Power Owners Burrell & Son (Engin) Port belonging to Glasgow

Nom. Horse Power as per Section 28 366 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 25"-41"-68" Length of Stroke 48" Revs. per minute as per rule 142 Dia. of Screw shaft as fitted 14 5/8" 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 as per rule 12'-68" Dia. of Crank shaft journals as per rule 13'-32" Dia. of Crank pin 13 5/8" Size of Crank webs 8 1/2" Dia. of thrust shaft under collars 14 1/4" Dia. of screw 17'-6" Pitch of Screw 17'-9" No. of Blades 4 State whether moveable no Total surface 93 #  
 No. of Feed pumps 2 Diameter of ditto 3 1/2" 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 9x12x10, 8x5x8, 5 1/4x13 1/2x5 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 6" 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 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 For Suctions 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 8 Screw shaft and Propeller exam'd at Port  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top grating

**BOILERS, &c.**—(Letter for record 15) Manufacturers of Steel The Clyde Bridge Steel & Plate  
 Total Heating Surface of Boilers 5868 Is Forced Draft fitted no No. and Description of Boilers 3 Single Ended  
 Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 20/3/07 No. of Certificate 8864  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 55 # No. and Description of Safety Valves to each boiler 2 Spring Area of each valve 5.94" 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 stokehold Mean dia. of boilers 14'-0" Length 11'-0" Material of shell plates steel  
 Thickness 1 3/16" Range of tensile strength 28.2-31.7 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D. R. L. long. seams D. B. S. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 19 1/4"  
 Per centages of strength of longitudinal joint rivets 83 Working pressure of shell by rules 188 lb Size of manhole in shell 16x12"  
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Dighton Material steel Outside diameter 3'-8 1/2"  
 Length of plain part top Thickness of plates bottom 1 7/32" Description of longitudinal joint weld No. of strengthening rings —  
 Working pressure of furnace by the rules 185 Combustion chamber plates: Material steel Thickness: Sides 7/8" Back 7/8" Top 7/8" Bottom 7/8"  
 Pitch of stays to ditto: Sides 7 7/8" Back 7 7/8" Top 7 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 212 lb  
 Material of stays steel Diameter at smallest part 1.48" Area supported by each stay 62" Working pressure by rules 190 End plates in steam space: Material steel Thickness 1 1/4" Pitch of stays 18x18" How are stays secured D. nuts Working pressure by rules 216 lb Material of stays steel  
 Diameter at smallest part 7.59" Area supported by each stay 324" Working pressure by rules 216 Material of Front plates at bottom steel  
 Thickness 7/8" Material of Lower back plate steel Thickness 1 3/16" Greatest pitch of stays 13 1/4" Working pressure of plate by rules 193  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 7/8" Back 27/32" Mean pitch of stays 9"  
 Pitch across wide water spaces 13 1/4" Working pressures by rules 180 lb Girders to Chamber tops: Material steel Depth and thickness of girder at centre (8 1/2" x 7 1/2") Length as per rule 30" Distance apart 8 1/4" Number and pitch of stays in each 3-7 1/2"  
 Working pressure by rules 200 lb 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

W1100-0078

VERTICAL DONKEY BOILER— Manufacturers of Steel *None*

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ 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 shaft, propeller, set of piston rings, set of air & circulating pump valves, etc., & the bolts & nuts required by the rules.*

The foregoing is a correct description,  
*for David Rowan & Co. Manufacturer.*

Dates of Survey while building

During progress of work in shops—	1905 Dec 7 16 21 28 1906 Jan 12 19 Feb 6 8 11 13 Mar 5 9 12 14 16 Apr 12 21 27 May 21 31 June 1 5 6 13 18 25 31
	During erection on board vessel—
	1907 Aug 1 11 14 Sep 5 Oct 18 24 31 Nov 2 13 20 Dec 13 20 30 1907 Jan 14 16 21 24 Feb 7 21 Mar 12 16 26 27 28 Apr 28 12 26 May 6 8

Total No. of visits *59*

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *None*

Dates of Examination of principal parts—

Cylinders *11/2/07* Slides *11/2/07* Covers *11/2/07* Pistons *11/2/07* Rods *11/2/07*

Connecting rods *11/2/07* Crank shaft *3/7/06* Thrust shaft *28/7/06* Tunnel shafts *28/7/06* Screw shaft *5/6/06* Propeller *13/3/07*

Stern tube *13/3/07* Steam pipes tested *26/3/4/07* Engine and boiler seatings *26/4/07* Engines holding down bolts *26/4/07*

Completion of pumping arrangements *6/5/07* Boilers fixed *6/5/07* Engines tried under steam *8/5/07*

Main boiler safety valves adjusted *2/5/07* Thickness of adjusting washers *P. P. 5/16 S. 5/16 C. P. 5/16 S. 5/16 L. P. 5/16 S. 5/16*

Material of Crank shaft *slut* Identification Mark on Do. *(H.G.S.)* Material of Thrust shaft *slut* Identification Mark on Do. *(H.G.S.)*

Material of Tunnel shafts *slut* Identification Marks on Do. *(H.G.S.)* Material of Screw shafts *Iron* Identification Marks on Do. *(H.G.S.)*

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 securely fitted on board & satisfactorily tried under steam.*

*This vessel is in my opinion eligible for notation \*LMC 5, 07 (in red) in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. +LMC 5.07

*J.P.R.*

*23/5/07*

The amount of Entry Fee.. £ *3* : : When applied for, *20 MAY 1907*

Special .. .. £ *88.6* : : *1907*

Donkey Boiler Fee .. .. £ : : When received, *22/5/07*

Travelling Expenses (if any) £ : : *1907*

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

Committee's Minute *Glasgow 20 MAY 1907*

Assigned *L. M. C. 5-07*

Certificate (if required) to be sent to \_\_\_\_\_

If not, state whether, and when, one will be sent?

