

REPORT ON MACHINERY.

No. 28332.

Received at London Office WED. 1 DEC 1909

of writing Report *Nov. 19 09* When handed in at Local Office *29/11/10* of Port of *Glasgow*
 in Survey held at *Glasgow* Date, First Survey *27th July 10* Last Survey *25th Nov. 1909*
 eg. Book. on the *1/2 "LORD STALBRIDGE"* (Number of Visits *21*) Gross Tons *1909* Net Tons *1909*

aster Built at *Dublin* By whom built *Dublin Dockyard Co (No 68)* When built *1909*
 engines made at *Glasgow* By whom made *Ross & Duncan (No 812+813)* when made *1909*
 oilers made at *do* By whom made *do* (No 1266) when made *1909*
 egistered Horse Power *90* Owners *Shropshire Union Railway Canal Co* Port belonging to *Chester*
 om. Horse Power as per Section 28 *90* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *no*

GINES, &c.—Description of Engines *Twin Screw Compound* No. of Cylinders *4* No. of Cranks *4*
 ia. of Cylinders *2-14" + 2-30"* Length of Stroke *20"* Revs. per minute *✓* Dia. of Screw shaft *as per rule 6.35" as fitted 6.35"* Material of *iron* screw shaft *✓*
 the screw shaft fitted with a continuous liner the whole length of the stern tube *no* Is the after end of the liner made water tight
 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
 ners are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *2-8"*
 Dia. of Tunnel shaft *as per rule 5.61" as fitted 5.31/4"* Dia. of Crank shaft journals *as per rule 5.89" as fitted 6"* Dia. of Crank pin *6"* Size of Crank webs *4 x 11 1/2"* Dia. of thrust shaft under
 ollars *6"* Dia. of screw *6-9"* Pitch of Screw *10-0"* No. of Blades *4* State whether moceable *no* Total surface *17.3* *sq ft*

Vo. of Feed pumps *1* Diameter of ditto *2 1/4"* Stroke *10"* Can one be overhauled while the other is at work *no*
 Vo. of Bilge pumps *1* Diameter of ditto *2 1/4"* Stroke *10"* Can one be overhauled while the other is at work *no*
 Vo. of Donkey Engines *2* Sizes of Pumps *6 1/2 x 4 1/2 x 10" + 4 x 4 x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps
 n Engine Room *2-2" and 1-2" special* In Holds, &c. *1-2" forward + 1-2" aft* *✓*

Vo. of Bilge Injections *2* sizes *2 3/4"* Connected to condenser, or to circulating pump *pump* Is a separate Donkey Suction fitted in Engine room & size *yes 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 *none*
 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 *✓*
 What pipes are carried through the bunkers *none. See Dublin report* 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* [See Dublin report]
 Dates of examination of completion of fitting of Sea Connections *and* of Stern Tube *and* Screw shaft and Propeller *✓*

Is the Screw Shaft Tunnel watertight *none* Is it fitted with a watertight door *worked from*
 OILERS, &c.—(Letter for record *8*) Manufacturers of Steel *D. Colville & Lanarkshire S. Co*

Total Heating Surface of Boilers *1725* Is Forced Draft fitted *no* No. and Description of Boilers *one single ended*
 Working Pressure *120 lbs* Tested by hydraulic pressure to *240 lbs* Date of test *14.10.09* No. of Certificate *10151*

Can each boiler be worked separately *✓* Area of fire grate in each boiler *58.75* No. and Description of Safety Valves to
 each boiler *double spring loaded* Area of each valve *8.29* Pressure to which they are adjusted *125 lbs* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *2-6"* dia. of boilers *14-0"* Length *10-0"* Material of shell plates *steel*
 Thickness *7/8"* Range of tensile strength *28/32 tons* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *D. R.*

long. seams *T. R. B. S.* Diameter of rivet holes in long. seams *1"* Pitch of rivets *6 1/8"* Lap of plates *width of butt straps 15 3/4"*
 Per centages of strength of longitudinal joint *87.2%* Working pressure of shell by rules *130 lbs* Size of manhole in shell *12" x 16"*

Size of compensating ring *7" x 7 1/8"* No. and Description of Furnaces in each boiler *3 plain* Material *steel* Outside diameter *46"*
 Length of plain part *top 7 1/4" bottom 7"* Thickness of plates *crown 3 1/2" bottom 3 1/32"* Description of longitudinal joint *welded* No. of strengthening rings *one*

Working pressure of furnace by the rules *133 lbs* Combustion chamber plates: Material *steel* Thickness: Sides *9/16"* Back *9/16"* Top *9/16"* Bottom *19/32"*
 Pitch of stays to ditto: Sides *8 1/2" x 9 1/2"* Back *9" x 9"* Top *9 1/2" x 9"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *135 lbs*

Material of stays *steel* Diameter at smallest part *1 1/4"* Area supported by each stay *81"* Working pressure by rules *122 lbs* End plates in steam space:
 Material *steel* Thickness *31/32"* Pitch of stays *20" x 17 1/2"* How are stays secured *D. H. wash* Working pressure by rules *176 lbs* Material of stays *steel*

Diameter at smallest part *4.91"* Area supported by each stay *358"* Working pressure by rules *146* Material of Front plates at bottom *steel*
 Thickness *1/16"* Material of Lower back plate *steel* Thickness *1/16"* Greatest pitch of stays *13 3/4" x 9"* Working pressure of plate by rules *121 lbs*

Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2" + 4 5/8"* Material of tube plates *steel* Thickness: Front *11/16"* Back *21/32"* Mean pitch of stays *10 13/32"*
 Pitch across wide water spaces *14"* Working pressures by rules *114 2/3 lbs* Girders to Chamber tops: Material *iron* Depth and

thickness of girder at centre *6 1/2" x 1 3/4"* Length as per rule *30" x 1/32"* Distance apart *8"* Number and pitch of stays in each *2 @ 9 1/2"*
 Working pressure by rules *127 lbs* 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 _____
 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:— Two connecting rod top end & 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of coupling bolts, 1 set each of feed & bilge pump valves, a quantity of assorted bolts & nuts, & iron of various sizes. 1 set air pump valves, 1 set H.P. piston springs.

The foregoing is a correct description,
 Ross Duncan p. Manufacturer.

Dates of Survey while building { During progress of work in shops 1909. July 27. Aug 29. 17. 26. Sep 1. 3. 7. 10. 15. 21. Oct 7. 11. 13. 18. }
 { During erection on board vessel - - - Nov 1. 3. 6. 9. 11. 12. 13. 19. 25. }
 Total No. of visits 24. Is the approved plan of main boiler forwarded herewith yls.

Dates of Examination of principal parts—Cylinders 26. 8. 09. Slides 26. 8. 09. Covers 1. 9. 09. Pistons 1. 9. 09. Rods 15. 9. 09.
 Connecting rods 15. 9. 09. Crank shaft 17. 8. 09. Thrust shaft 7. 9. 09. Tunnel shafts 7. 9. 09. Screw shaft 7. 10. 09. Propeller 7. 10. 09.
 Stern tube 7. 10. 09. Steam pipes tested 13. 11. 09. Engine and boiler seatings 1. 11. 09. Engines holding down bolts 3. 11. 09.
 Completion of pumping arrangements 12. 11. 09. Boilers fixed 12. 11. 09. Engines tried under steam 25. 11. 09.
 Main boiler safety valves adjusted 19. 11. 09. Thickness of adjusting washers Both 5/16 bare
 Material of Crank shaft iron Identification Mark on Do. 8/2-13. Material of Thrust shaft iron Identification Mark on Do. 8/2-13.
 Material of Tunnel shafts iron Identification Marks on Do. 8/2-13. Material of Screw shafts iron Identification Marks on Do. 8/2-13.
 Material of Steam Pipes Copper Test pressure 240 lb.

General Remarks (State quality of workmanship, opinions as to class, &c.) The workmanship & materials are good. The engines & boiler have been built under special survey, fitted on board, & satisfactorily tried under steam, & in my opinion are eligible for the notation + L.M.C. 11. 09.

Glasgow.

It is submitted that this vessel is fit to receive the notation + L.M.C. 11. 09.

JRM 4/12/09

The amount of Entry Fee. £ 1 : - : When applied for. 29/11/1909
 Special £ 13 10 : :
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : :
 When received 11/12/09

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

Committee's Minute GLASGOW 30 NOV. 1909

Assigned + LMC 11. 09 subject to classification of hull

FRI. 3 DEC 1909

+ LMC 11. 09 Lloyd's Register Foundation