

REPORT ON MACHINERY.

No. 21318

Port of *Glasgow*

TUES. 24 NOV 1903

Received at London Office

No. in Survey held at *Govan*
Reg. Book.Date, first Survey *23rd Sept 02* Last Survey *16th Nov 1903*(Number of Visits *60*)on the *SS. Armadale Castle* Tons { Gross *12970*
Net *1264*Master *J. Robinson* Built at *Govan* By whom built *Fairfield S.B. & Co. Ltd* When built *1903*Engines made at *Govan* By whom made *Fairfield S.B. & Co. Ltd* when made *1903*Boilers made at *do* By whom made *do* when made *1903*Registered Horse Power Owners *Univ. Castle Ship S. S. Co. Ltd* Port belonging to *Glasgow*Nom. Horse Power as per Section 28 *2212* Is Refrigerating Machinery fitted *yes* Is Electric Light fitted *yes*ENGINES, &c.—Description of Engines *Quadruple Expansion* No. of Cylinders *Eight* No. of Cranks *8*Dia. of Cylinders *32, 46, 66 1/2, 96* Length of Stroke *60* Revs. per minute *80* Dia. of Screw shaft *18.3* as per rule *19* Material of screw shaft *Steel*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 tightin the propeller boss *yes* If the liner is in more than one length are the joints burned *yes* If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *yes*liners are fitted, is the shaft lapped or protected between the liners *yes* Length of stern bush *6-6* If two *3-0*Dia. of Tunnel shaft *17.1* as per rule *17.95* Dia. of Crank shaft journals *17.95* as fitted *19* Dia. of Crank pin *19* Size of Crank webs *36 x 13 1/2* Dia. of thrust shaft undercollars *18 3/4* Dia. of screw *19-0* Pitch of screw *26-6* No. of blades *3* State whether moveable *yes* Total surface *92 sq ft*No. of Feed pumps *4* Diameter of ditto *12* Stroke *26* Can one be overhauled while the other is at work *yes*No. of Bilge pumps *four* Diameter of ditto *6* Stroke *30* Can one be overhauled while the other is at work *yes*No. of Donkey Engines *one* Sizes of Pumps *12 x 12 x 14* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *water spec. and mech spec. tunnel, 11, 3 1/2* in Holds, &c. *no. 3 1/2 in no 1, two 3 1/2 in*No. of bilge injections *2* sizes *18* Connected to condenser, or to circulating pump *pump* Is a separate donkey suction fitted in Engine room & size *yes, 8"*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 *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 *none* How are they protected *yes*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 *before launch* Is the screw shaft tunnel watertight *yes*Is it fitted with a watertight door *yes* worked from *top platform in engine room*BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *4000 sq ft* Is forced draft fitted *no*No. and Description of Boilers *6 D. Ends and 4 Single Ends* Working Pressure *220 lb* Tested by hydraulic pressure to *440 lb*Date of *23/9/03* *2/10/03* *8/10/03* Can each boiler be worked separately *yes* Area of fire grate in each boiler *DE 121.8* No. and Description of safety valves toeach boiler *two, direct spring* Area of each valve *DE 10.3* Pressure to which they are adjusted *22.5 lb* Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers or woodwork *8"* Mean dia. of boilers *DE 14.2* Length *DE 20-0* Material of shell plates *Steel*Thick *DE 1 1/2* Range of tensile strength *SE 31 1/2* Are they welded or flanged *no* Descrip. of riveting: cir. seams *DE 21 1/2* Double Butt *5 rivets*Diameter of rivet holes in long. seams *DE 1 1/2* Pitch of rivets *10"* Lap of plates or width of butt strap *DE 2 1/2*Per centages of strength of longitudinal joint *SE 1 1/2* Working pressure of shell by rules *DE 254 lb* Size of manhole in *16" x 12"*Size of compensating ring *flanges* No. and Description of Furnaces in each boiler *DE 4* Material *Steel* Outside diameter *DE 45 1/2*Length of plain part *top* Thickness of plates *bottom* *11 1/16"* Description of longitudinal joint *Welded* No. of strengthening rings *DE 19 1/2*Working pressure of furnace by the rules *DE 250* Combustion chamber plates: Material *Steel* Thickness: Sides *DE 1 1/2* Back *SE 7/8* Top *DE 1 1/2* Bottom *DE 1 1/2*Pitch of stays to ditto: Sides *DE 7 1/2* Back *SE 7 1/2* Area supported by each stay *DE 550* Working pressure by rules *DE 224* End plates in steam space:Material of stays *Steel* at smallest part *DE 1 1/2* How are stays secured *nuts outside* Working pressure by rules *DE 310* Material of stays *Steel*Thick *DE 5 1/4* at smallest part *DE 5 1/4* supported by each stay *DE 225* Working pressure by rules *DE 257* Material of front plates at bottom *Steel*Thickness *13/16* Material of Lower back plate *Steel* Thickness *11/16* Greatest pitch of stays *12 1/2"* Working pressure of plate by rules *340*Diameter of tubes *2 3/4* Pitch of tubes *4"* Material of tube plates *Steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *9"*Pitch across wide water spaces *13 3/4* Working pressures by rules *DE 227 lb* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at cent *DE 8 1/4* Length as per rule *DE 30* Distance apart *SE 11 1/2* Number and pitch of Stays in each *SE 7 1/2*Working pressure by rules *220 lb* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler workedseparately *yes* 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

Lloyd's Register
Foundation

SPARE GEAR. State the articles supplied: Two top & two bottom end bolts & nuts. 2 main bearing bolt and nuts, one set of coupling bolts & nuts. 1 set of feed & bilge pump valves, a quantity of assorted bolts & nuts & iron bars of various sizes, circulating pump valve, Eccentric straps, air pump rod, bucket & head valves, slide valve spindle, pump plunger, top and bottom end brasses &c.

ENGINEERING CO., LIMITED

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

The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality. It has been securely fitted on board and a full speed trial run which was in every way satisfactory. (Speed 19 knots).

The machinery of this vessel is now in my opinion eligible for record of ^{U.S.} L.M.C. 11-03 (in red) in register book.

6 plans of stop valves, steam pipes &c.

24. 11. 03

24. 44. 9.

MACHINERY CERTIFICATE
WRITTEN 25-11-62

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