

# REPORT ON MACHINERY.

Port of *Glasgow* in *Spain*.

No. *43962*

RI. 17 OCT 1902

No. in Survey held at *Glasgow* Date, first Survey Last Survey 19  
 g. Book. (Number of Visits)  
 on the *B.S. of H. Abastaint No. 1368*  
 Master *J. Williams* Built at *Aberdeen* By whom built *J. Guthrie Sons & Co.* When built 1902  
 Description of engines made at *Aberdeen* By whom made *Clyde Mitchell & Co. Ltd* when made 1902  
 Silers made at *South Shields* By whom made *J. J. Cunningham and Co.* when made 31.7.02  
 Registered Horse Power 71 Owners *Alex Gray & Adam Mainland* Port belonging to *Aberdeen*  
 m. Horse Power as per Section 28 84 Is Refrigerating Machinery fitted *No* Is Electric Light fitted *No*

GINES, &c.—Description of Engines  
 No. of Cylinders No. of Cranks  
 Length of Stroke Revs. per minute Dia. of Screw shaft as per rule as fitted Lgth. of stern bush  
 Dia. of Crank shaft journals as per rule as fitted Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under  
 Dia. of screw Pitch of screw No. of blades State whether moveable Total surface  
 Diameter of ditto Stroke Can one be overhauled while the other is at work  
 Diameter of ditto Stroke Can one be overhauled while the other is at work  
 Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room In Holds, &c.

of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size  
 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  
 all connections with the sea direct on the skin of the ship Are they Valves or Cocks  
 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  
 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  
 at pipes are carried through the bunkers How are they protected  
 all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times  
 the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges  
 on were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight  
 fitted with a watertight door worked from

TERS, &c.— (Letter for record) Total Heating Surface of Boiler *1446* Is forced draft fitted *No*  
 and Description of Boilers *One. Cyl. by alt. single end. Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb.*  
 of test *31.7.02* Can each boiler be worked separately ☒ Area of fire grate in each boiler *50* No. and Description of safety valves to  
 boiler *Two direct spring loaded* Area of each valve *5.93 sq. in.* Pressure to which they are adjusted *185* Are they fitted with easing gear *yes*  
 least distance between boilers or uptakes and bunkers or woodwork *9* Mean dia. of boilers *12'-10"* Length *10'-0"* Material of shell plates *S.*  
 thickness *1 1/2"* Range of tensile strength *27/32* Are they welded or flanged ☒ Descrip. of riveting: cir. seams *Lap. D. R.* long. seams *Butt. T. R.*  
 diameter of rivet holes in long. seams *1 1/4"* Pitch of rivets *4 1/2"* Lap of plates or width of butt straps *17 1/2"*  
 percentages of strength of longitudinal joint rivets *88.0* plate *88.0* Working pressure of shell by rules *180 lb.* Size of manhole in shell *16" x 12"*  
 of compensating ring *7 1/2" x 1 1/2"* No. and Description of Furnaces in each boiler *3. Plain* Material *S.* Outside diameter *39"*  
 of plain part top *6'-5"* bottom *6'-5"* Thickness of plates crown *27/32* bottom *27/32* Description of longitudinal joint *D. Butt straps* No. of strengthening rings *One T.*  
 working pressure of furnace by the rules *180 lb.* Combustion chamber plates: Material *S.* Thickness: Sides *1 1/16"* Back *27/32* Top *1 1/16"* Bottom *27/32*  
 of stays to ditto: Sides *9 1/2" x 9"* Back *9 1/2" x 8 1/2"* Top *9" x 8"* If stays are fitted with nuts or riveted heads *yes* Working pressure by rules *183 lb.*  
 material of stays *I.* Diameter at smallest part *1 3/16"* Area supported by each stay *81"* Working pressure by rules *220 lb.* End plates in steam space:  
 material *S.* Thickness *1 1/16"* Pitch of stays *17" x 17"* How are stays secured *D.N. & W.* Working pressure by rules *185 lb.* Material of stays *S.*  
 diameter at smallest part *2 3/16"* Area supported by each stay *289"* Working pressure by rules *192 lb.* Material of Front plates at bottom *S.*  
 thickness *27/32* Material of Lower back plate *S.* Thickness *27/32* Greatest pitch of stays *15" x 8 1/2"* Working pressure of plate by rules *188 lb.*  
 diameter of tubes *3 1/2"* Pitch of tubes *4 1/4" x 4 7/8"* Material of tube plates *S.* Thickness: Front *27/32* Back *27/32* Mean pitch of stays *11 3/4"*  
 across wide water spaces *14 1/4"* Working pressures by rules *189 lb.* Girders to Chamber tops: Material *S.* Depth and  
 thickness of girder at centre *6" x 2 1/16"* Length as per rule *28"* Distance apart *8"* Number and pitch of Stays in each *2 @ 9"*  
 working pressure by rules *182 lb.* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked  
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet  
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 fitted 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



**DONKEY BOILER**— No. Description When made Where fixed

Made at By whom made

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 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 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

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,

*W. S. Cunningham* Manufacturer. *Main Boiler.*

Dates During progress of work in shops— 1902. *Mch. 26. Apr. 5. 1902. May. 19. 27. 29. June. 4. 7. 10. 16. 21. July. 28. 29. 30.*

of Survey During erection on board vessel —

while building Total No. of visits *20*

Is the approved plan of main boiler forwarded herewith *yes.*

“ “ “ donkey “ “ “

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

Material of screw shaft Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the after end of the liner made water tight in the propeller boss 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

*This boiler has been constructed under special survey, the materials and workmanship are good.*

*On completion it was subjected to an hydraulic test of 360 lbs. per sq. in. and was tight and satisfactory at that pressure.*

The amount of Entry Fee. £ : :  
Special . . . . £ : :  
Donkey Boiler Fee . . . £ *4 16* : :  
Travelling Expenses (if any) £ : :

Committee's Minute

Assigned

When applied for,  
*14 AUG 1902*

When received,  
*Paid at NWC.  
Sec's letter to Abn.  
dated 22.8.02.*

*W. Lane.*

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

TUES. 4 NOV 1902

TUES. 27 JAN 1903

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Foundation