

REPORT ON MACHINERY.

No. 6413

Port of *Dundee*

Received at London Office JUL. 30 AUG 1898

No. in Survey held at *Dundee* Date, first Survey *15th February* Last Survey *24th August 1898*
 Reg. Book. on the *Steel Screw Steamer "Gnat"* (Number of Vents *32*)
 Master *Dundee* Built at *Dundee* By whom built *Dundee M.S. Co Lim^d* Tons ^{Gross} *79.19* _{Net} *1.22* When built *1898*
 Engines made at *Dundee* By whom made *Messrs Whyte & Main* when made *1898*
 Boilers made at *Dundee* By whom made *Messrs Whyte & Main* when made *1898*
 Registered Horse Power Owners *J. Constant* Port belonging to *London*
 Nom. Horse Power as per Section 28 *53*

ENGINES, &c.— Description of Engines *Inverted direct acting Compound* No. of Cylinders *two*
 Diameter of Cylinders *15" - 32"* Length of Stroke *24"* Revolutions per minute *130* Diameter of Screw shaft *as per rule 6.44*
 Diameter of Tunnel shaft *as per rule 6.11* Diameter of Crank shaft journals *6 1/2* Diameter of Crank pin *6 1/2* Size of Crank webs *12 1/2" x 4 1/4"*
 Diameter of screw *7' - 6"* Pitch of screw *11' - 0"* No. of blades *3* State whether moveable *no* Total surface *19.5*
 No. of Feed pumps *1* Diameter of ditto *2 3/8* Stroke *12* Can one be overhauled while the other is at work
 No. of Bilge pumps *1* Diameter of ditto *2 3/8* Stroke *12* Can one be overhauled while the other is at work
 No. of Donkey Engines *one* Sizes of Pumps *4 3/4" x 3" x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Two 2" diam* In Holds, &c. *Fore hold one 2" diam; aft hold one 2" diam*
 No. of bilge injections *1* sizes *3"* Connected to condenser, or to circulating pump *yes* 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 *yes*
 What pipes are carried through the bunkers *none* 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*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *not in dry dock* Is the screw shaft tunnel watertight *none*
 Is it fitted with a watertight door worked from

OILERS, &c.— (Letter for record *(S)*) Total Heating Surface of Boilers *940*
 No. and Description of Boilers *One cylindrical single ended* Working Pressure *130* Tested by hydraulic pressure to *260*
 Date of test *5/8/98* Can each boiler be worked separately Area of fire grate in each boiler *39 sq ft* No. and Description of safety valves to each boiler *Two Spring* Area of each valve *7.07* Pressure to which they are adjusted *135 lbs* Are they fitted with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or ^{woodwork on B.H in forecastle} *36"* Mean diameter of boilers *11' - 0 3/4*
 Length *10' - 0"* Material of shell plates *steel* Thickness *2 5/32* Description of riveting: circum. seams *Lap Double* long. seams *D. B. - Flat Riv* 5 Ribs per pitch
 Diameter of rivet holes in long. seams *27/32* Pitch of rivets *5 3/32* Lap of plates or width of butt straps *19"*
 Percentages of strength of longitudinal joint plate *85.9* Working pressure of shell by rules *135 lbs* Size of manhole in shell *16" x 12"*
 Size of compensating ring *McC Neil's* No. and Description of Furnaces in each boiler *2 - Plain* Material *steel* Outside diameter *41.3"*
 Length of plain part ^{top} *82"* _{bottom} *84"* Thickness of plates ^{crown} *2 1/32* _{bottom} *3/32* Description of longitudinal joint *D. Butt - Sing Riv* No. of strengthening rings *3 1/2 x 3 1/2 x 1/2* angle
 Working pressure of furnace by the rules *136* Combustion chamber plates: Material *steel* Thickness: Sides *17/32* Back *17/32* Top *17/32* Bottom *4/16*
 Pitch of stays to ditto: Sides *8" x 8"* Back *8" x 7 1/2"* Top *8" x 8"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *135*
 Material of stays *steel* Diameter at smallest part *1 1/4"* Area supported by each stay *64 sq in* Working pressure by rules *155* End plates in steam space: Material *steel* Thickness *27/32* Pitch of stays *16"* How are stays secured *D. Nuts & 6 x 7/8" washers* Working pressure by rules *132* Material of stays *steel*
 Diameter at smallest part *2.18* Area supported by each stay *256* Working pressure by rules *131* Material of Front plates at bottom *steel*
 Thickness *13/16* Material of Lower back plate *steel* Thickness *3/4* Greatest pitch of stays *12"* Working pressure of plate by rules *140*
 Diameter of tubes *3 1/2* Pitch of tubes *4 3/4"* Material of tube plates *steel* Thickness: Front *13/16* Back *4/16* Mean pitch of stays *10 1/4"*
 Pitch across wide water spaces *13 1/2* Working pressures by rules *130 lbs* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *7" x 1 1/4"* Length as per rule *26"* Distance apart *8"* Number and pitch of Stays in each *2 = 8"*
 Working pressure by rules *144* 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
 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



DONKEY BOILER— Description

Made at _____ By whom made _____ When made _____ Where fixed _____
 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 _____
 Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long. seams _____ Diameter 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:— *2 iron rods top and bottom nuts, 2 bottom end bolts & nuts, 2 main bearing bolts and nuts, six coupling bolts & nuts, one set of feed & bilge pump valves, assorted iron, bolts & nuts, one propeller.*

The foregoing is a correct description,

Manufacturer.

W. H. G. Macer

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under special survey and in accordance with the approved plans and Secretary's letters and in general conformity with the Rules. The materials and workmanship are sound and good. The Boiler has been tested by hydraulic pressure also examined under steam and found tight and sound in every respect.*

*The machinery is now in a good and safe working condition and renders the vessel eligible in my opinion to have the notation of **LMC-998** in the Register Book*

It is submitted that this vessel is eligible for **THE RECORD. + L.M.C. 998**

W. H. G. Macer
30/8/98

The Surveyors are requested not to insert any notes in the space for Committee's Minute.

Certificate (if required) to be sent to *Dundee office*

The amount of Entry Fee.	£ 1 : 0 : 0	When applied for,	
Special	£ 8 : 0 : 018.....	
Donkey Boiler Fee	£ :	When received,	
Travelling Expenses (if any)	£ :18.....	

W. H. G. Macer
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI, 2 SEP 1898

MACHINERY CERTIFICATE WRITTEN.

Assigned

+ L.M.C. 998



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