

REPORT ON MACHINERY.

63.

No. 63 Port of Middlebro. Received at London Office MON 19 MAY 1890
 No. in Survey held at Stockton. Date, first Survey 20th Dec^r 89 Last Survey 14th May 1890
 Reg. Book. Stockton. (Number of Visits 19.)
 on the Screw Steamer "Girdleness." Tons { Gross 1851.4
 Master Graham Built at Stockton By whom built Richardson, Duck & Co. When built 1890
 Engines made at Stockton By whom made Blair & Co. Limited when made 1890
 Boilers made at Stockton By whom made Blair & Co. Limited when made 1890
 Registered Horse Power 160 Owners Tarrar, Groves & Co. Port belonging to London.
 " " By Rule 184.4

MANUFACTURERS. " 15-8
ENGINES, &c.— (Triple expansion)
 Description of Engines Triple Expansion (3 Cylinders, Inverted, Direct Acting, Surface Condensing) No. of Cylinders Three
 Diam. of Cylinders 21" 34" - 56" Length of Stroke 36" Rev. per minute 60 Point of Cut off, High Pressure 1/2 Stroke Low Pressure 1/2 Stroke
 Diameter of Screw shaft 11 1/2" Diam. of Tunnel shaft 10 1/2" Diam. of Crank shaft journals 11" Diam. of Crank pin 11 1/2" size of Crank webs 18 1/2" x 6 1/2"
 Diameter of screw 15.0" Pitch of screw 15.0" No. of blades 4 state whether moveable No total surface 6 1/2 sq. feet
 No. of Feed pumps 2 diameter of ditto 2 3/4" Stroke 26" Can one be overhauled while the other is at work Yes.
 No. of Bilge pumps 2 diameter of ditto 3 1/2" Stroke 26" Can one be overhauled while the other is at work Yes.
 Where do they pump from Sea, Tanks, Engine Room Bilge, Tunnel and after peak.
 No. of Donkey Engines 2 Size of Pumps Feed (1" x 8") Ballast (3 1/2" x 9") Where do they pump from Feed - Sea Boilers, Hotwell & Tanks, Ballast - Sea Eng. Room Bilges, all Ballast tanks, Tunnel and after peak.
 Are all the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes
 No. of bilge injections 1 and sizes 6 1/2" Are they connected to condenser, or to circulating pump Circulating pump.
 How are the pumps worked By levers from piston rod crosshead of After Engine.
 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 accessible at all times Yes
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launching
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Top platform in Engine Room.

BOILERS, &c.—
 No. of Boilers Two Description Cylindrical Single End Material Steel. Letter (for record)
 Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 16th April 1890. N^o 1021.
 Description of superheating apparatus or steam chest None. Heating surface 2800 sq. feet.
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately ✓
 No. of square feet of fire grate surface in each boiler 30 sq. ft. Description of safety valves Spring No. to each boiler Two
 Area of each valve 4.9 sq. in. Are they fitted with easing gear Yes No. of safety valves to superheater — area of each valve —
 Are they fitted with easing gear ✓ Smallest distance between boilers and bunkers or woodwork 12" Diameter of boilers 12' 3 1/8"
 Length of boilers 10.0" description of riveting of shell long. seams 87.8 Sharp Treble circum. seams Lap Double Thickness of shell plates 1 3/32"
 Diameter of rivet holes 1 1/8" whether punched or drilled Drilled pitch of rivets 4 1/4" Lap of plating 1 3/32" circum. 6"
 Percentage of strength of longitudinal joint 84.4 working pressure of shell by rules 162 lbs. size of manholes in shell 16" x 12"
 Size of compensating rings 28" x 24" x 1 3/32" No. of Furnaces in each boiler 2 Description of Furnaces Corrugated
 Outside diameter 3' 4" length 6' 3" thickness of plates 3/64" description of joint Welded. if rings are fitted —
 Greatest length between rings — working pressure of furnace by the rules 168 lbs. combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"
 Pitch of stays to ditto, sides 1 1/2" x 1 1/2" back 1 1/2" x 1 1/2" top 1 1/2" x 1 1/2" If stays are fitted with nuts or riveted heads None working pressure of plating by rules 172 lbs.
 Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 172 lbs. end plates in steam space, thickness 1 5/32"
 Pitch of stays to ditto 1 1/4" x 16 3/4" how stays are secured Double nut & washers working pressure by rules 168 lbs. diameter of stays at smallest part 2 5/8" working pressure by rules 170 lbs. Front plates at bottom, thickness 1" Back plates, thickness 1"
 Greatest pitch of stays 12" working pressure by rules 174 lbs. Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 5/8" thickness of tube plates, front 1" back 7/8" how stayed Stay tubes pitch of stays 9 1/2" x 9" width of water spaces 5"
 Diameter of Superheater or Steam chest ✓ length ✓ thickness of plates ✓ description of longitudinal joint ✓ diam. of rivet holes ✓
 Pitch of rivets ✓ working pressure of shell by rules ✓ diameter of flue ✓ thickness of plates ✓ If stiffened with rings ✓
 Distance between rings ✓ working pressure by rules ✓ end plates of superheater, or steam chest; thickness ✓ how stayed ✓
 Superheater or steam chest; how connected to boiler ✓

DONKEY BOILER— Description *Casus Patent*

Made at *Gateshead* by whom made *Clarke, Chapman & Co* when made *15.1.90* where fixed *In Stockton*.
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2096* fire grate area *18 sq feet* description of safety
 valves *Spring* No. of safety valves *one* area of each *11 sq in* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *6' 0"* length *13' 0"* description of riveting *Long⁶ Lap Double*
 Thickness of shell plates *1/16"* diameter of rivet holes *1/8"* whether punched or drilled *Drilled* pitch of rivets *3 3/16"* lap of plating *4 1/4"*
 per centage of strength of joint *1/2* thickness of crown plates *1/16"* stayed by *Six stays 1 3/8" diameter*
 Diameter of furnace, top *2' 8"* bottom *5' 1"* length of furnace *4' 0"* thickness of plates *1/16"* description of joint *Lap Single*
 Thickness of furnace crown plates *1/16"* stayed by *Same as shell crown plates* working pressure of shell by rules *94 lbs*
 Working pressure of furnace by rules *98 lbs* diameter of uptake *11 1/2"* thickness of plates *1/16"* thickness of water tubes *1/16"*

SPARE GEAR. State the articles supplied:— *1 Propellor, 2 Main Bearing Bolt nuts, 2 Bank
 pin Bolt nuts, 2 Crosshead Bolt nuts, 1 Set coupling Bolt nuts 1/2 set
 Air pump valves, 1 Set Feed & Relief pump valves, 1 Set Piston Springs, Ban
 lon ass? Bolt nut ass?*

The foregoing is a correct description,

Robt Blair & Co Ltd
4/4 Blair

Manufacturers of Marine Engines & Boilers

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

*The Materials and Workmanship throughout
 are of the best description.*

*The Engines and Boilers of this vessel have been
 constructed under special survey, when fitted on board the
 engines were tried and worked satisfactorily, while the main
 Boilers with full steam on, were examined and found tight, and
 their safety valves are adjusted to carry working pressures of
 160 lbs per sq inch.*

*The whole Machinery is now in Good and
 efficient condition, and eligible in my opinion
 to have the notation *L.M.C 5,90* marked in the
 Society's Register Book.*

*It is submitted that this vessel is
 eligible to have *L.M.C. 5-90* recorded
 W.A.
 19.5.90*

The amount of Entry Fee .. £ 2 : - : - received by me,

Special .. £ 28 : 2 : -

Donkey Boiler Fee .. £ : : -

Certificate (if required) .. £ : : - 15.5.1890

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

FRI 23 MAY 1890

+ L.M.C 5/90

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



Lloyd's Register
 Foundation