

REPORT ON MACHINERY.

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No. 43 Port of Middlesbro'
 No. in Survey held at Middlesbro' and West H'pool Date, first Survey 25th Oct. 1889 Last Survey 12th May 1890
 Reg. Book. 2 (Number of Visits 48)
 on the Screw Steamer Yumuri
 Master Ruse Built at Middlesbro' By whom built Lee Raylton Dixon & Co When built 1890
 Engines made at Middlesbro' By whom made Kestgarth English when made 1890
 Boilers made at West Hartlepool By whom made Cochran Marine Engine Works when made 1890
 Registered Horse Power 120 Owners H. G. Pettersen Port belonging to Bergen
 Tons { Gross 843.6
 Net 534.27

ENGINES, &c.—

(Triple expansion)
 Description of Engines Triple Expansion (3 cranks) Inverted, sundering, surface condensing No. of Cylinders Three
 Diam. of Cylinders 14¹/₂ - 29 - 47 Length of Stroke 33 Rev. per minute 92 Point of Cut off, High Pressure 1/₄ Low Pressure 1/₆
 Diameter of Screw shaft 9 Diam. of Tunnel shaft 8¹/₂ Diam. of Crank shaft journals 9 Diam. of Crank pin 9 size of Crank webs 16¹/₂ x 6¹/₂
 Diameter of screw 11¹/₆ Pitch of screw 15¹/₆ & 14¹/₆ No. of blades 4 state whether moveable No total surface 40 sq. feet
 No. of Feed pumps 2 diameter of ditto 2 Stroke 21 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 diameter of ditto 3 Stroke 21 Can one be overhauled while the other is at work Yes
 Where do they pump from Engine Room, Bilges, After Well and after peak
 No. of Donkey Engines Two Size of Pumps 4" x 2¹/₂ x 4" 6" x 6" x 12" Where do they pump from Feed - B.R. Bilges, After Well & Peak
Howell, Bilge & Ballast - B.R. Bilges and all Ballast tanks
 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 4" Are they connected to condenser, or to circulating pump Circulating pump
 How are the pumps worked By lever from the piston rod crosshead of the Intermediate 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 3rd May 1890
 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 One Description Single End by Cochrane Material Steel Letter (for record)
 Working Pressure 160 lbs Tested by hydraulic pressure to 330 lbs Date of test 18th February 1890 (No. 2046)
 Description of superheating apparatus or steam chest None Heating surface 1950 Sq. feet
 Can each boiler be worked separately ✓ Can the superheater be shut off and the boiler worked separately ✓
 No. of square feet of fire grate surface in each boiler 708 sq. feet Description of safety valves Spring No. to each boiler Two
 Area of each valve 406 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 10" Diameter of boilers 14¹/₆
 Length of boilers 10¹/₄ description of riveting of shell long. seams as Treble circum. seams Lap Double Thickness of shell plates 1¹/₆
 Diameter of rivet holes 1¹/₄ whether punched or drilled Drilled pitch of rivets 5¹/₂" 4¹/₂" Lap of plating 1¹/₂" 6"
 Per centage of strength of longitudinal joint 83.8% working pressure of shell by rules 164.3 lbs size of manholes in shell 16" x 12"
 Size of compensating rings 28¹/₂ x 24¹/₂ x 1¹/₂ No. of Furnaces in each boiler Three Description of Furnaces Corrugated
 Outside diameter 45" length 7 feet thickness of plates 3¹/₄" description of joint Welded if rings are fitted ✓
 Greatest length between rings ✓ working pressure of furnace by the rules 161 lbs combustion chamber plating, thickness, sides 9¹/₆" back 9¹/₆" top 5¹/₈"
 Pitch of stays to ditto, sides 7¹/₂ x 7¹/₂ back 7¹/₂ x 7¹/₂ top 8" x 8" If stays are fitted with nuts or riveted heads Sub working pressure of plating by rules 161 lbs Diameter of stays at smallest part 1¹/₄" working pressure of ditto by rules 163 lbs end plates in steam space, thickness 1"
 Pitch of stays to ditto 14¹/₂ x 14¹/₂ how stays are secured Double Sub working pressure by rules 140 lbs diameter of stays at smallest part 2¹/₄" working pressure by rules 140 lbs Front plates at bottom, thickness 1¹/₆" Back plates, thickness 3¹/₄"
 Greatest pitch of stays 10" working pressure by rules 142.8 lbs Diameter of tubes 3¹/₂" pitch of tubes 4¹/₂ x 4¹/₂ thickness of tube plates, front 3¹/₄" back 2¹/₈" how stayed Stayed pitch of stays 9¹/₂ x 9¹/₂ width of water spaces 5¹/₄"
 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 ✓

Steel
DONKEY BOILER— Description *Vertical, by 18"*, with four cross water tubes.
Made at *Stockton* by whom made *Riley Bros.* when made *4.2.90* where fixed *In Storehold*
Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *2064* fire grate area *14.4 sq ft.* description of safety
valves *Spring* safety valves *one* area of each *9.62 sq ft* fitted with easing gear *Yes*. if steam from main boilers can
enter the donkey boiler *No* er of donkey boiler *5'6"* length *11'0"* description of riveting *Long Double riv Lap*
Thickness of shell plates *3/8"* diame rivet holes *1/16"* whether punched or drilled *punch* pitch of rivets *2'16"* lap of plating *4'4"*
per centage of strength of joint *71* ickness of crown plates *3/8"* stayed by *Five stays 1 1/2" diameter*
Diameter of furnace, top *4'5"* bottom *4'11 1/4"* length of furnace *4'6"* thickness of plates *1/2"* description of joint *Lap Single*
Thickness of furnace crown plates *1/2"* stayed by *Cameas shell crown plate* working pressure of shell by rules *80 lb*
Working pressure of furnace by rules *90 lb* diameter of uptake *13"* thickness of plates *3/16"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Propeller, Propeller shaft, 2 each Connecting
Rod top & bottom 1/2 bolts nuts, 2 main Bearing Bolt nuts, 1 set Pist
Belp pump valves, 1 set Piston springs, 1/2 Crank Shaft, Iron ass. Size
Bolt nuts ass. 1 set Coupling Bolt*

The foregoing is a correct description,

Wm. H. Lush & Co Manufacturers of main Engines—

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

*The Materials and Workmanship are of good quality
The Engines and Boilers have been constructed under
Special Survey; when fitted on board the vessel the former were
tried and worked satisfactorily, while the main Boilers with
steam up was found tight and its safety valves are adjusted
to carry a working pressure of 160 lb per sq in.*

*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.*

M.L.
23.5.90

The amount of Entry Fee .. £ *2 : 11 : 4* received by me,

Special .. £ *19 : 4 : "*

Donkey Boiler Fee .. £ : :

Certificate (if required) .. £ : : *22.5.1890*

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

TUES 27 MAY 1890

+ L.M.C. 5/90

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Lloyd's Register
Foundation