REPORT ON MACHINERY.

194

Port of Middlesbro'-on-Tees Received at London Office THURS 2 OCT 1890 18

No. 194

No. in Reg. Book. Survey held at Stockton-on-Tees Date, first Survey 18th June Last Survey 19th Sept 1890 (Number of Visits 27)

on the Screw Steamer "Tynehead". Tons Gross 2258.4 Net 1461.8

Master Carr. Built at Stockton By whom built Romner ston 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 200. Owners G. Furness. Port belonging to London.

Manufacturers HP 160.
Rule HP 201

ENGINES, &c.—

Description of Engines Triple expansion, Inverted, Direct acting No. of Cylinders Three.

Diam. of Cylinders 21" - 35" - 57" Length of Stroke 39". Rev. per minute 60 Point of Cut off, High Pressure ½ Low Pressure ½

Diameter of Screw shaft 11¾" Diam. of Tunnel shaft 11". Diam. of Crank shaft journals 11½" Diam. of Crank pin 12" size of Crank webs 19" x 3⅜".

Diameter of screw 15'. 0". Pitch of screw 15'. 0". No. of blades 4 state whether moveable No. total surface 61 Sq: feet.

No. of Feed pumps 2 diameter of ditto 2¾" Stroke 28" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 diameter of ditto 4" Stroke 28" Can one be overhauled while the other is at work Yes.

Where do they pump from Forehold, Engine Room, after well, Tanks & sea.

No. of Donkey Engines 2 Size of Pumps 14" x 9" (both Double acting) (14½" x 9") Where do they pump from Feed – sea, Tanks & Hotwell. Ballast – all tanks, Engine Room, Forehold, after well & sea.

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". Are they connected to condenser, or to circulating pump Circulating pump.

How are the pumps worked By levers from the Crosshead of the 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 New Vessel. before Launching.

Is the screw shaft tunnel watertight ✓ and fitted with a sluice door Yes worked from Top platform of Engine room.

BOILERS, &c.—

No. of Boilers Two Description Cyld^r Multitubular Surface Material Steel Letter (for record) S.

Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 12th August 1890 (No. 1096.)

Description of superheating apparatus or steam chest None. Heating Surface 2990 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 32.5 Sq: ft. Description of safety valves Direct Spring No. to each boiler Two

Area of each valve 4.9 Sq: ins: 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'. 9¾".

Length of boilers 10'. 0" description of riveting of shell long. seams D^ble Straps Treble circum. seams Lap. Double Thickness of shell plates 1 3/16".

Diameter of rivet holes Long: 1 3/16" Cir: 1¼" whether punched or drilled Drilled pitch of rivets Long: 7¼". Cir: 4½". Lap of plating D^ble Straps 1'. 4⅜". wide Cir: 6".

Per centage of strength of longitudinal joint 83.6 working pressure of shell by rules 164.8 lbs. size of manholes in shell 16" x 12".

Size of compensating rings 28" x 24" x 1 3/16" No. of Furnaces in each boiler 2 Description of Furnaces Corrugated.

Outside diameter 3'. 10". length 6'. 3". thickness of plates 12/32" description of joint Welded. if rings are fitted ✓

Greatest length between rings ✓ working pressure of furnace by the rules 163 lbs. combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16".

Pitch of stays to ditto, sides 7½" x 7½" back 7½" x 7½" top 7½" x 7½" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 148 lbs. Diameter of stays at Screwed ends smallest part 1 7/16" Iron working pressure of ditto by rules 148 lbs. end plates in steam space, thickness 1 5/32"

Pitch of stays to ditto 13½" x 14" how stays are secured Double Nuts working pressure by rules 161.2 lbs: diameter of stays at smallest part 2 5/8" working pressure by rules 166 lbs: Front plates at bottom, thickness 1" Back plates, thickness 1"

Greatest pitch of stays 12" working pressure by rules 177 lbs. Diameter of tubes 3¼" pitch of tubes 4 5/8" x 4 5/8" thickness of tube plates, front 1" back ⅝" how stayed Stay tubes pitch of stays 9¼" x 9¼" width of water spaces 1 3/8" & 15".

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 ✓

MDB740/274

Steel
DONKEY BOILER— Description Vertical with 5 Cross water tubes.

Made at Stockton by whom made Riley Bros. when made 9.8.90 where fixed In stokehold.
Working pressure 80 lbs tested by hydraulic pressure to 160 lbs No. of Certificate 1095. fire grate area 23.5 Sq. ft. description of safety valves Spring. No. of safety valves one area of each 12.5 Sq ins if fitted with easing gear Yes. if steam from main boilers can enter the donkey boiler No. diameter of donkey boiler 6'.6". length 13'.6". description of riveting Long.l Lap Double.
Thickness of shell plates 13/32" diameter of rivet holes 13/16" whether punched or drilled Punch. pitch of rivets 2 7/8" lap of plating 4 1/4"
per centage of strength of joint 71.7. thickness of crown plates 13/32" stayed by Six stays 1½" Eff. dia.r
Diameter of furnace, top 4'.10 1/8." bottom 5'.7½". length of furnace 8'.5". thickness of plates 5/8". description of joint Lap Single.
Thickness of furnace crown plates ½". stayed by Same as shell crown plate working pressure of shell by rules 80 lbs
Working pressure of furnace by rules 84 lbs. diameter of uptake 16". thickness of plates 7/16". thickness of water tubes 3/8".

SPARE GEAR. State the articles supplied :— 1 Propeller, 1 Set Coupling Bolts Nuts, 2 Main Bearing Bolts & Nuts, 2 Crank pin Bolts Nuts, 2 Cross head Bolts Nuts. 1 Set Piston Springs, 1 Set Feed & Bilge pump valves, Iron asst Sizes. Bolts & Nuts

The foregoing is a correct description,
Rob Blair Nos. 2 & 4 Blair Manufacturers of Main Engines & Boilers.

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

The Materials and Workmanship are of the best description.

The Engines and Boilers have been constructed under Special Survey: When fitted on board the vessel the Engines were tried and worked satisfactorily, and the Main Boilers were on examination found light and the Safety valves are adjusted to carry a working pressure of 160 lbs per sq. inch.

The whole Machinery is now in good and efficient condition and eligible in my opinion to have the record ✠ L.M.C. 9.90 marked in the Society's Register Book.

It is submitted that this Vessel is eligible to have ✠ L.M.C. 9-90 recorded. W.A. 2-10-90

Machinery Certificate Written.

The amount of Entry Fee .. £ 2 : - : - received by me,
Special .. .. .. £ 30 : 1 : -
Donkey Boiler Fee .. .. £ : :
Certificate (if required) .. £ : : 1.10.1890
To be sent as per margin.
(Travelling Expenses, if any, £)

F.H.D

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

Committee's Minute FRI 3 OCT 1890
✠ LMC 9.90

R. E. TAYLOR & SON, STEAM PRINTERS, 19 OLD STREET, GOSWELL ROAD, LONDON, E.C.