

REPORT ON MACHINERY.

1952

8754 (N. 460)

Port of Middlesbrough - on - Tees

Received at London Office

22 MAR 1892

No. 642 (Mdt)

No. in Survey held at Stockton - on - Tees

Date, first Survey 30th Oct. 1891

Last Survey 4th March 1892

(Number of Visits 3)

Reg. Book.

on the Screw Steamer "Headlands"

Tons } Gross 2988
Not 1933

Master J. R. Holman Built at Hartlepool By whom built Furness, Wm & Co York When built 1892

Engines made at Stockton - on - Tees By whom made Blair & Co L^{td} when made 1892

Boilers made at Stockton - on - Tees By whom made Blair & Co L^{td} when made 1892

Registered Horse Power 250 Owners Hardy, Wilson & Co Port belonging to Hartlepool

Classification Rule HP 245

ENGINES, &c.—

Description of Engines Triple expansion, inverted, direct acting, 3 cranks No. of Cylinders Three
 Diam. of Cylinders 22 1/2 - 37 - 61 Length of Stroke 42 Rev. per minute 65 Point of Cut off, High Pressure .5 Low Pressure .5
 Diameter of Screw shaft 12 1/4 Diam. of Tunnel shaft 11 1/2 Diam. of Crank shaft journals 12 Diam. of Crank pin 12 1/2 size of Crank webs 19 1/2 x 8 1/2 Built
 Diameter of screw 16' 0" Pitch of screw 16' 0" No. of blades 4 state whether moveable no total surface 71 Sq. ft.
 No. of Feed pumps 2 diameter of ditto 3 1/2 Stroke 30 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 diameter of ditto 4 1/2 Stroke 30 Can one be overhauled while the other is at work Yes
 Where do they pump from Ballast tanks, Fore, main, after & Aftermost Holds, Engine room, Afterwell & peak
 No. of Donkey Engines Two Size of Pumps (4 x 8) (9 x 10) Where do they pump from Feed - Sea, Hotwell, Tanks & Boilers
Ballast - Sea thru Condenser, Tanks, all Holds, Engine room, after well and 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 One and sizes 7" Are they connected to condenser, or to circulating pump Circulating pump
 How are the pumps worked By levers from the cross head 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.
 Is the screw shaft tunnel watertight ✓ and fitted with a sluice door Yes worked from Top platform in Engine room.

BOILERS, &c.—

No. of Boilers Two Description by 1st class: single ended Material Steel Letter (for record) S
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 8th Feb 1892 (No 399)
 Description of superheating apparatus or steam chest None Heating surface 3740 Sq. ft.
 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 51 Sq. ft. Description of safety valves Direct spring No. to each boiler Two
 Area of each valve 7.06 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 14' 6 3/8"
 Length of boilers 10' 0" description of riveting of shell long. seams DR Sharp Ribble circum. seams Lap Double Thickness of shell plates 1 7/8"
 Diameter of rivet holes 1 1/8" 1 1/8" whether punched or drilled Drilled pitch of rivets 8 1/4" 4 1/2" Lap of plating 1 1/4" wide 6 1/2"
 Per centage of strength of longitudinal joint 84. 92.7. working pressure of shell by rules 164 lbs size of manholes in shell 16" x 12"
 Size of compensating rings 28" x 24" x 1 7/8" No. of Furnaces in each boiler 3 Description of Furnaces Corrugated
 Outside diameter 3' 8" length 6' 3" thickness of plates 1/2" description of joint Welded if rings are fitted ✓
 reatest length between rings ✓ working pressure of furnace by the rules 169 lbs combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"
 h of stays to ditto, sides 7/8" x 7/8" back 7/8" x 7/8" top 7/8" x 7/8" stays are fitted with nuts or riveted heads Nuts working pressure of plating by
 rules 182 lbs Diameter of stays at smallest part 1 3/16" iron working pressure of ditto by rules 143 lbs end plates in steam space, thickness 1 1/2"
 ch of stays to ditto 15" x 15" how stays are secured Double nuts & washers working pressure by rules 185 lbs diameter of stays at
 smallest part 2 3/8" working pressure by rules 144 lbs Front plates at bottom, thickness 1" Back plates, thickness 1"
 nch of stays 12" working pressure by rules 144 lbs Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 5/8" thickness of tube
 , front 1" back 1 1/8" how stayed Stay tubes pitch of stays 1 1/2" x 9 1/4" width of water spaces 1 1/4" + 5"
 meter 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 *Vertical with four cross water tubes*
 Made at *Stockton* by whom made *J. Ludron & Co Ltd* when made *25.11.91* where fixed *In Stockhold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *355* fire grate area *20 sq. ft* description of safety
 valves *Spring* No. of safety valves *one* area of each *8.3 sq. ft* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *6' 0"* length *12' 0"* description of riveting *Vertical Lap Double*
 Thickness of shell plates *3/32"* diameter of rivet holes *13/16"* whether punched or drilled *punched* pitch of rivets *2 3/4"* lap of plating *4 1/4"*
 per centage of strength of joint *70.4* thickness of crown plates *1/32"* stayed by *6 stays 1 5/8"* effective diameter
 Diameter of furnace, top *4' 9"* bottom *5' 4 1/2"* length of furnace *5' 7 1/2"* thickness of plates *1/32"* description of joint *Lap Single*
 Thickness of furnace crown plates *9/16"* stayed by *Same as shell crown plate* working pressure of shell by rules *85 lbs*
 Working pressure of furnace by rules *85 lbs* diameter of uptake *14"* thickness of plates *3/8"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *One propeller, a set of bolts & nuts for a
 connecting rod, main bearing, & shaft coupling, a set of L.P. piston
 springs. A set of valves for a feed, bilge, & circulating pump, Bolt
 nuts, & Iron assorted.*

The foregoing is a correct description,
Robt Blair & Co Ltd Manufacturers of Marine Engines & Boilers.
R. Blair

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

The Engines and Boilers of this vessel have been
 constructed under special survey and the materials
 and workmanship are good. The Engines when tried
 under steam worked satisfactorily, while the Marine
 Boilers on examination were found tight and sound.
 The Machinery throughout is now in good and
 efficient condition and will be eligible in my opinion
 to have the notation *L.M.C.S. 92*, marked in the Register
 Book when the following work has been completed:— The
 Cocks in the recess at the after end of the Tunnel to be taken
 off and non-return valves fitted, or the connection for
 pumping the after peak tank be dispensed with. The tunnel
 and Engine room Bulkhead doors to be completed and made
 watertight. The Donkey boiler to be secured in place the
 mountings to be fitted, and the safety valves etc. to be examined
 under steam. Spare gear in accordance with the Rules
 to be supplied.
 The above mentioned work has been completed in a satisfactory
 manner, non-return valves have been fitted in the places of
 the cocks in the recess at the after end of tunnel.

J. Stoddart
 14th March 1892
 It is submitted
 that this vessel is eligible
 for the notation
 THE RECORD + L.M.C.S.
 22 3 1892

MACHINERY CERTIFICATE
 WRITTEN.
 Certificate (if required) to be sent to
 The amount of Entry Fee .. £ 2: 0: 0 received by me,
 Special £ 32: 5: 0
 Donkey Boiler Fee £ : : :
 19.3.1892

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

(Travelling Expenses, if any, £)
 Committee's Minute

FRI 25 MAR 1892

TUES. 29 MAR 1892

+ L.M.C.S. 92

