

REPORT ON MACHINERY.

8300

No. 8300 Port of West Hartlepool Received at London Office TUE 3 FEB 91
 No. in Survey held at West Hartlepool Date, first Survey 25th July 1890 Last Survey 26th January 1891
 Reg. Book. _____ (Number of Visits 61)
 on the Screw Steamer "HEIGHINGTON" Tons { Gross 2800.09
 Net 1827.39
 Master Wilson Built at West Hartlepool By whom built W Gray & Co When built 1890
 Engines made at West Hartlepool By whom made Central Marine Eng Coy when made 1891
 Boilers made at West Hartlepool By whom made Central Marine Eng Coy when made 1891
 Registered Horse Power 220 Owners Hudson Shipping Co Lim Port belonging to West Hartlepool
2 239

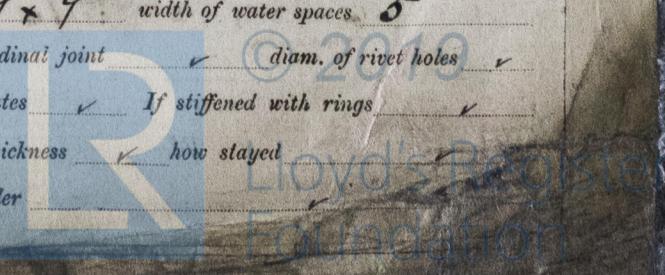
ENGINES, &c.—

Description of Engines Inverted Triple Expansion Direct acting Surface Condensing No. of Cylinders 3 (3 Cranks)
 Diam. of Cylinders 23" - 36 1/2" - 62" Length of Stroke 39" Rev. per minute 65 Point of Cut off, High Pressure 5.5 Low Pressure 5.5
 Diameter of Screw shaft 1 1/4" Diam. of Tunnel shaft 10 3/4" Diam. of Crank shaft journals 1 1/4" Diam. of Crank pin 1 1/4" size of Crank webs 16" x 7"
 Diameter of screw 15" - 6" Pitch of screw Differential No. of blades 4 state whether moveable No total surface 74 sq feet
 No. of Feed pumps 2 diameter of ditto 3" Stroke 30" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 diameter of ditto 3 1/2" Stroke 30" Can one be overhauled while the other is at work Yes
 Where do they pump from Fore, Main & After Holds (P.S.) Engine Room (P.S.C), Tunnel & After Peak
 No. of Donkey Engines 2 Size of Pumps Feed - 5 dia x 3 1/2 stroke duplex Where do they pump from Feed - Sea, Hotwell & Tanks & Boilers
Ballast - Bilges, sea and All 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 2 and sizes 5" dia Are they connected to condenser, or to circulating pump Yes to circulating pump.
 How are the pumps worked Lewis from After Crosshead.
 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 in a level
 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 14th January 1891
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper Platform

BOILERS, &c.—

No. of Boilers Two Description Cyl. Multitubular single ended Material Steel (Lakes-Iron) Letter (for record) S
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 5/12/90 No. 2167
 Description of superheating apparatus or steam chest Total Heating Surface in Two Boilers 3580 sq feet
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes
 No. of square feet of fire grate surface in each boiler 43 3/4" Description of safety valves Spring loaded No. to each boiler 2
 Area of each valve 7.07" Are they fitted with easing gear Yes No. of safety valves to superheater _____ area of each valve _____
 Are they fitted with easing gear Yes Smallest distance between boilers and bunkers about 18" Diameter of boilers 14" - 3"
 Length of boilers 10 - 0" description of riveting of shell long. seams I.B.S. treble circum. shell end flanged Thickness of shell plates 1 1/4"
 Diameter of rivet holes long 1 1/2" Cu 1 3/8" whether punched or drilled drilled pitch of rivets long 8" Cu 5 1/2" Lap of plating I.B.S. 18 3/8" Cu 9 1/2" Lap
 Percentage of strength of longitudinal joint 84.375% working pressure of shell by rules 160.36 lbs size of manholes in shell 16" x 12"
 Size of compensating rings 24" x 24" x 7/8" No. of Furnaces in each boiler 3 Description of Furnaces Brown's patent ribbed
 Outside diameter 40 1/2" length 6 - 7" thickness of plates 1/2" description of joint welded if rings are fitted No
 Greatest length between rings _____ working pressure of furnace by the rules 171.8 combustion chamber plating, thickness, sides 7/8" back 7/8" top 7/8"
 Pitch of stays to ditto, sides 8 7/8" x 8 7/8" back 8 7/8" x 8 7/8" top 8 1/2" PART I If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 161.3 Diameter of stays at smallest part 1.3837" working pressure of ditto by rules 161.0 end plates in steam space, thickness 1 1/16"
 Pitch of stays to ditto 15 3/8" x 15 1/4" how stays are secured Double Nuts working pressure by rules 160.5 lbs diameter of stays at smallest part 2.4117" working pressure by rules 169.8 lbs Front plates at bottom, thickness 3/4" Back plates, thickness 29/32"
 Greatest pitch of stays 1/2" working pressure by rules 161.4 lbs Diameter of tubes 3 1/4" External pitch of tubes 4 1/2" x 4 1/2" thickness of tube plates, front 3/32" back 23/32" how stayed Stay tubes pitch of stays 9" 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 _____

If Report is not sent on the Hull of the Ship



2 DONKEY BOILERS Description *Steel, Vertical, Cyl with 3 Cross water tubes.*
 Made at *West Hartlepool* by whom made *W Gray & Co* TESTED when made *24/11/90* where fixed *Stokehole*
 Working pressure *75 lbs* tested by hydraulic pressure to *150 lbs* No. of Certificate *2166* fire grate area description of safe
 valves *Spring loaded* No. of safety valves *one* area of each *7669* if fitted with easing gear *yes* if steam from main boiler
 enter the donkey boiler *No* diameter of donkey boiler *5'-6"* length *11'-0"* description of riveting *double Riv Lap*
 Thickness of shell plates *3/8"* diameter of rivet holes *13/16"* whether punched or drilled *punched* pitch of rivets *2 3/4"* lap of plating *4 1/2"*
 per centage of strength of joint *70.4%* thickness of crown plates *7/16"* stayed by *6 stays, 1 1/2 Effective Diameter*
 Diameter of furnace, top *4'-4"* bottom *4'-10"* length of furnace *5'-0"* thickness of plates *17/32"* description of joint *Single Riv Lap*
 Thickness of furnace crown plates *17/32"* stayed by *same as shell crown* working pressure of shell by rules *80 lbs*
 Working pressure of furnace by rules *77 lbs* diameter of uptake *14"* thickness of plates *3/8"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *One Propellor 1 set Main bearing Bolts, 1 set of Connecting Rod Bolts (top & bottom), 1 set Coupling Bolts, one set Feed & Bilge pump Valves, one set 4 P Piston Springs, one safety Valve Spring, Bolts & Nuts assorted, Lion assorted*
 The foregoing is a correct description,

FOR THE CENTRAL MARINE ENGINE WORKS,
 (W. Gray & Co. Ltd.)

Manufacturers of Main Engines & Boilers.

Thomas Mudd.

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

*A Uren's Evaporator has been fitted on board.
 The Main & Branch steam pipes have been tested by hydraulic pressure to 320 lbs per sq inch and found tight and sound.
 The Engines and Boilers of this Vessel have been constructed under special survey, of a good quality of workmanship, they have been tried under steam and the safety valves adjusted and found to work well and are now, in my opinion, eligible to have
 + L.M.C. 191 Recorded in the Register of the Society.*

W. Gray

It is submitted that this vessel is eligible to have + L.M.C. 1-91 recorded.

*N.A.
 4-2-91*

The amount of Entry Fee .. £ *2 : 0 : 0* received by me,
 Special £ *31 : 19 : 0*
 Donkey Boiler Fee £ *2 : 2 :*
 Certificate (if required) .. £ *Gratis* 2-2-1891.
 To be sent as per margin.
 (Travelling Expenses, if any, £)

Thomas R. Blackie
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

L.M.C. 1/91

