

REPORT ON MACHINERY.

2973

Port of Southampton

No. 2973

Received at London Office MON 14 JULY 1890

No. in Survey held at Portsmouth

Date, first Survey 25 February 89 Last Survey 27 Nov 1889

Reg. Book.

(Number of Visits 18) 55.46

Tons wt. 12.55

on the steel steam tug vessel Hercules

Master *X* Built at Portsmouth By whom built Vosper & Co When built 1889

Engines made at Portsmouth By whom made Vosper & Co when made 1889

Boilers made at *d.* By whom made *d.* when made 1889

Registered Horse Power 37 Owners *Shaham Harbour Trustees* Port belonging to *Shaham*

ENGINES, &c.—

Description of Engines *Compound vertical inverted Cylinder Surface condensing*

Diameter of Cylinder *15' x 30* Length of Stroke *18"* No. of Rev. per minute *120* Point of Cut off, High Pressure *.86* Low Pressure *.66*

Diameter of Screw shaft *5 1/2"* Diam. of Tunnel shaft *5 7/16* Diam. of Crank shaft journals *5 1/2"* Diam. of Crank pin *5 1/2"* size of Crank webs *6 1/2" x 4 1/2"*

Diameter of screw *6' 1"* Pitch of screw *10' 0"* No. of blades *4* state whether moveable *no* total surface *17.9 feet*

No. of Feed pumps *one* diameter of ditto *4'* Stroke *3 1/2"* Can one be overhauled while the other is at work *X*

No. of Bilge pumps *one* diameter of ditto *4'* Stroke *3 1/2"* Can one be overhauled while the other is at work *X*

Where do they pump from *The three main compartments of the vessel*

No. of Donkey Engines *one* Size of Pumps *3 1/2" x 5" double acting* Where do they pump from *Shesha. bilge & hold*

and deliver to the bilge on deck & overboard

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 *3'* Are they connected to condenser, or to circulating pump *circulating pump*

How are the pumps worked *The air circulating by separate engine. The bilge pumped by ^{one} eccentric pump main shaft*

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 *X*

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 on launch ways 6th September 1889*

Is the screw shaft tunnel watertight *no tunnel and fitted with a sluice door* worked from *Access of union is placed around*

the shaft between bulk heads of the after compartment, with doors secured by bolts nut, in access to stern gland & in immediate bearing

BOILERS, &c.—

Number of Boilers *one* Description *circular, multitubular* Whether Steel or Iron *Steel* *Letter 7. 7. 89.*

Working Pressure *100 lbs* Tested by hydraulic pressure to *200 lbs* Date of test *14th October 1889*

Description of superheating apparatus or steam chest *none fitted*

Can each boiler be worked separately *X* Can the superheater be shut off and the boiler worked separately *X*

No. of square feet of fire grate surface in each boiler *29* Description of safety valves *Adams patent* No. to each boiler *two*

Area of each valve *4.91 sq. in.* Are they fitted with easing gear *yes* No. of safety valves to superheater *X* area of each valve *X*

Are they fitted with easing gear *X* Smallest distance between boilers and bunkers *woodwork 4'* Diameter of boilers *9' 0"*

Length of boilers *8' 6"* description of riveting of shell long. seams *double butt straps* circum. seams *double lap* Thickness of shell plates *37/64*

Diameter of rivet holes *13/16* whether punched or drilled *drilled* pitch of rivets *4 1/8"* Lap of plating *12 1/2" butt straps*

Per centage of strength of longitudinal joint *80* working pressure of shell by rules *107 lbs* size of manholes in shell *16" x 12"*

Size of compensating rings *5 1/2" x 3/4"* No. of Furnaces in each boiler *2*

Outside diameter *34"* length, top *6' 0"* bottom *8' 1"* thickness of plates *1/2"* description of joints *single butt strap double lap* if rings are fitted *no*

Greatest length between rings *working pressure of furnace by the rules 109 lbs* combustion chamber plating, thickness, sides *17/32* back *17/32* top *17/32*

Pitch of stays to ditto, sides *9 1/4" x 7 1/2"* back *9' x 8 7/8"* top *9' x 7 1/2"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *100 lbs*

Diameter of stays at smallest part *1 1/4" x 1 1/16"* working pressure of ditto by rules *100 lbs* end plates in steam space, thickness *23/32* *Large washers under stays. but not under end plates.* diameter of stays at smallest part *2.3 & 4/16* area. working pressure by rules *113 lbs* Front plates at bottom, thickness *23/32* Back plates, thickness *23/32*

Greatest pitch of stays *8 2/4" x 9 1/4"* working pressure by rules *100 lbs* Diameter of tubes *3'* pitch of tubes *4' x 3 1/16"* thickness of tube plates, front *23/32* back *5/8"* how stayed *stay* subpitch of stays *per drawing* width of water spaces *1' x 1 1/16"*

Diameter of Superheater or Steam chest *length* thickness of plates *description of longitudinal joint* diam. of rivet holes

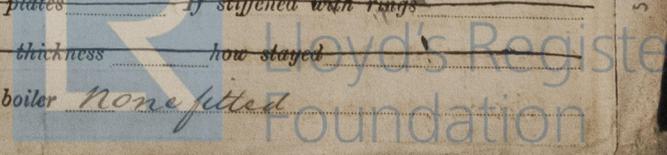
pitch of rivets *working pressure of shell by rules* diameter of flue *thickness of plates* If stiffened with rings

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 *None fitted*

Description of furnaces Plain Cylinder

500898-0298



DONKEY BOILER—

Description *No donkey boiler in this vessel*

Made at	by whom made	when made	where fixed
Working pressure	tested by hydraulic pressure to	No. of Certificate	fire grate area
valves	No. of safety valves	area of each	if fitted with easing gear
enter the donkey boiler	diameter of donkey boiler	length	description of riveting
Thickness of shell plates	diameter of rivet holes	whether punched or drilled	pitch of rivets
per centage of strength of joint	thickness of crown plates	stayed by	description of joint
Diameter of furnace, top	bottom	length of furnace	thickness of plates
Thickness of furnace crown plates	stayed by		working pressure of shell by rules
Working pressure of furnace by rules	diameter of uptake	thickness of plates	thickness of water tubes

SPARE GEAR. State the articles supplied:— *2 top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts, Bolts for one coupling, 1 set feed & bilge pump valves, 1 set piston springs, 3 dozen assorted bolts & nuts, 6 boiler tubes.*

The foregoing is a correct description,
Vorputh Manufacturer.

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

The Boiler and machinery of this vessel have been constructed under Special Survey & approved designs, & in accordance with the rules. They are, in my opinion, in safe working condition and the case is respectfully submitted as eligible for certification L.M.C. II. 89 in the Register Book of the Society.

J. B. Stevens
 Southampton 10th July 1890.

After the expiration of the time named in the contract for maintenance of vessel & machinery, some small leaks were found in the boiler shell, mainly owing, in my opinion, to want of proper care & management after construction. The vessel was brought round to Portsmouth, the boiler caulked, and examined by me with steam at full pressure on the 1st inst. It was then, in my opinion, in good & serviceable condition. It being that the attention of builders was drawn to a small leak, requiring a grummet under the nut of a screw stay in back plates. They undertook to make this perfect, & now report it as having been done (renutted). No addition or alteration to the recommendation as to classing made above, is warranted.

It is submitted that this vessel is eligible to have + L.M.C. II. 89 recorded.

M.H.S.
 14. 7. 90

Large blue ink signature or stamp, possibly 'Lloyd's' or similar.

The amount of Entry Fee .. £ 1 : 0 : 0 received by me,
 Special .. £ 8 : 0 : 0
 Donkey Boiler Fee .. £ " : " : "
 Certificate (if required) .. £ " : " : " 9/7/1890
To be sent as per margin.

(Travelling Expenses, if any, £ 3. 12. 3)

Committee's Minute

TUES 15 JULY 1890

+ L.M.C. II. 89

J. B. Stevens
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Machinery Certificate written.

