

REPORT ON MACHINERY.

2973

Port of Southampton

No. 2973

No. in Survey held at Portsmouth

Reg. Book.

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

Received at London Office 14 JULY 1890

(Number of Visits 18) 55.46

Tons net 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 Southampton Harbour Trustees Port belonging to Southampton

ENGINES, &c.—

Description of Engines Compound vertical inverted cylinder Surface condensing

Diameter of Cylinder 15' 7 3/4 Length of Stroke 18" No. of Rev. per minute 120 Point of Cut off, High Pressure 1/6 Low Pressure 1/6

Diameter of Screw shaft 5 1/2" Diam. of Tunnel shaft 5 1/6" 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 sq. 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 *Thesea. bilge & hold water*

and deliver to the boiler on deck & on board

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 *to circulating pump.*

How are the pumps worked *The air circulating by separate engine. The bilge pump by separate pump from 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 *on launchways 6th September 1889*

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

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

BOILERS, &c.—

Number of Boilers one Description circular, multitubular Whether Steel or Iron *Steel* *Letter 7. 2. 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. ft. 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 *on deckwork 4'* Diameter of boilers 9' 0"

Length of boilers 8' 6" description of riveting of shell long. seams *double butt straps* circum. seams *double rivet laps* 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 1/4" 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 rivet* if rings are fitted *no*

Greatest length between rings *no* 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 1/8 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 1/8 working pressure of ditto by rules 100 lbs end plates in steam space, thickness 23/32 *Large washers under*

Pitch of stays to ditto 13 1/2 x 14 how stays are secured *double nut & large washers not riveted* working pressure by rules 100 lbs diameter of stays at

smallest part 2.3 & 4 ft. area working pressure by rules 113 lbs Front plates at bottom, thickness 23/32 Back plates, thickness 23/32

Greatest pitch of stays 8 1/2 x 9 x 9 1/4 working pressure by rules 100 lbs Diameter of tubes 3" pitch of tubes 4" x 3 1/8" thickness of tube

plates, front 23/32 back 5/8 how stayed *stay* subpitch of stays *as drawn* width of water spaces 1" x 1 1/8"

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

Distances 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 cylindrical

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 _____ description of safety
 valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers can
 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 _____ lap of plating _____
 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 _____ working pressure of shell by rules _____
 Thickness of furnace crown plates _____ stayed by _____ thickness of plates _____ thickness of water tubes _____
 Working pressure of furnace by rules _____ diameter of uptake _____

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,

Vosper & Co

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.

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. Showing that the attention of builders was drawn to a small leak, requires a grummet under the nut of a screw stay in back plates. They were asked 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

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

Machinery Certificate
written.

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

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Foundation