

REPORT ON MACHINERY.

Port of *West Hartlepool*

THURS. 30 JUL 1891

Received at London Office

18

No. *857*

No. in Survey held at *West Hartlepool* Date, first Survey *24th Dec 1890* Last Survey *24th July 1891*

Reg. Book.

(Number of Visits *1*)

on the *new steamer*

SILVIA

Tons { Gross *1228.65*
Net *771.52*
When built *1891*

Master *Andrew* Built at *West Hartlepool* By whom built *R. Irvine & Co*

Engines made at *West Hartlepool* By whom made *Central Marine Eng Works* when made *1891*

Boilers made at *West Hartlepool* By whom made *Central Marine Eng Works* when made *1891*

Registered Horse Power *98* Owners *J. Sutcliffe Esq.* Port belonging to *Grimsby*

ENGINES, &c.—

Description of Engines *Triple Expansion, Inverted, Direct Acting, Surface Condens* No. of Cylinders *3 (3 cranks)*
Diam. of Cylinders *16 1/2 - 26 - 44* Length of Stroke *33* Rev. per minute *65* Point of Cut off, High Pressure *5.5* Low Pressure *5.5*
Diameter of Screw shaft *8 1/2* Diam. of Tunnel shaft *8 1/2* Diam. of Crank shaft journals *8 1/2* Diam. of Crank pin *8 1/2* size of Crank webs *11 1/8 x 5 1/8*
Diameter of screw *12 - 3* Pitch of screw *Differential* No. of blades *4* state whether moveable *No* total surface *44 1/2 sq ft*

No. of Feed pumps *2* diameter of ditto *2 1/2* Stroke *20* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* diameter of ditto *3* Stroke *20* Can one be overhauled while the other is at work *Yes*

Where do they pump from *Fore and Aft Holds, Engine Room, Lunnel, After Peak and Fore Peak.*

No. of Donkey Engines *2* Size of Pumps *2 1/2 dia x 4 stroke duplex* Where do they pump from *Feed Tanks, Hotwell & 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 *One* and sizes *4 dia* Are they connected to condenser, or to circulating pump *To circulating pump.*

How are the pumps worked *Leveris 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 *below*

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*

How are the pipes 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 *7th July 1891*

Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Upper Platform*

BOILERS, &c.—

No. of Boilers *One* Description *Mult, Cyl, single End* Material *Steel (Liber-Iron)* Letter (for record) *S*

Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *18.5.91* No *2208*

Description of superheating apparatus or steam chest *Total Heating Surface in Boiler 1600 sq feet.*

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

No. of square feet of fire grate surface in each boiler *36* Description of safety valves *Spring direct* No. to each boiler *2*

Area of each valve *7.07 sq"* 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 *about 18"* Diameter of boilers *13 - 9"*

Length of boilers *10 - 0'* description of riveting of shell long. seams *DBS Treble* circum. seams *Ends Placed* Thickness of shell plates *13/16*

Diameter of rivet holes *13/32 - 13/8* whether punched or drilled *drilled* pitch of rivets *Long 8 1/2 in 5 1/2* Lap of plating *DBS 18 1/2 Lap 9 1/2*

Percentage of strength of longitudinal joint *85.66%* working pressure of shell by rules *160.2 lbs* size of manholes in *16 x 12*

No. of compensating rings *26 x 26 x 7/8* No. of Furnaces in each boiler *3* Description of Furnaces *Brown's patent Ribbed*

Outside diameter *37 1/2* length *6 - 9'* thickness of plates *7/32* description of joint *welded* if rings are fitted *No*

Greatest length between rings *✓* working pressure of furnace by the rules *170.1* combustion chamber plating, thickness, sides *7/8* back *7/8* top *7/8*

Thickness of stays to ditto, sides *8 7/8 x 8* back *8 7/8 x 8 1/2* top *7/2* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *161.3*

Diameter of stays at smallest part *1.3827* working pressure of ditto by rules *161.3* end plates in steam space, thickness *1 1/16*

Thickness of stays to ditto *15 7/8 x 15 7/8* how stays are secured *Double Nuts* working pressure by rules *160.5 lbs* diameter of stays at smallest part *2.41*

Working pressure by rules *162.9 lbs* Front plates at bottom, thickness *3/4* Back plates, thickness *29/32*

Greatest pitch of stays *12 1/2* working pressure by rules *161.4 lbs* Diameter of tubes *3 1/4 x 4* 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 *✓*

Thickness 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 *Steel, Vertical, Cyl, with 3 cross tubes*
Made at *Stockton* by whom made *Riley Bros* when made *1869* where fixed *Whole*
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *275* fire grate area *✓* description of safety
valves *Spring direct* No. of safety valves *one* area of each *12.04* if fitted with easing gear *yes* if steam from main boilers can
enter the donkey boiler *No* diameter of donkey boiler *12 - 0* description of riveting *Vertical lap double*
Thickness of shell plates *13/32* diameter of rivet holes *3/16* whether punched or drilled *punched* pitch of rivets *2 1/16* lap of plating *4 1/4*
per centage of strength of joint *71 1/2* thickness of crown plates *7/32* stayed by *6 stays 1 1/2 off dia*
Diameter of furnace, top *4 - 10* bottom *5 - 5* length of furnace *4 - 11* thickness of plates *11/32* description of joint *Lap single*
Thickness of furnace crown plates *7/32* stayed by *same as shell crown* working pressure of shell by rules *3 1/2*
Working pressure of furnace by rules *84 lbs* diameter of uptake *15* thickness of plates *7/16* thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *One Propeller, One set Main Bearing Bolts*
One set Connecting Rod Bolts (top & bottom), One set Coupling Bolts
One set Feed and Bilge Pump Valves, One set H.P. Piston Springs
Bolts & nuts assorted, 6 Bars Iron assorted.

The foregoing is a correct description,

For THE CENTRAL MARINE ENGINE WORKS.

Manufacturers

of main Engines & Makers only. *Thomas Mudd*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Main Steam Pipes have*
been tested to 320 lbs per sq inch by hydraulic pressure & found
tight & sound.

The Engines & Boilers have been constructed under
Special Survey, of a good quality of workmanship
they have tried under steam and safety valves
adjusted & found to work well, and, are
my opinion, eligible to have *L.M.C. 7.91.*
in the Register of this Society.

The amount of Entry Fee *£ 2 : 0 : 0* received by me,

Special £

Donkey Boiler Fee £

Certificate (if required) £

To be sent as per margin.
(Travelling Expenses, if any, £)

Committee's Minute

FEB 31 JUL 1891

+ L.M.C. 7/91

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