

REPORT ON MACHINERY.

No. 6501

No. in Survey held at
Reg. Book.

West Hartlepool.

Date, first Survey 4th JanLast Survey 20th July 1884

(Number of Vistas 43)

1832.68

Tons 2809.06

on the Screw Steamer "Swansea".

Masters Hamilton Murrell Built at West Hartlepool By whom built William Gray & Co. When built 1884

Engines made at West Hartlepool By whom made Central Marine Engineer & Co. when made 1884

Boilers made at West Hartlepool By whom made Central Marine Engineer & Co. when made 1884

Registered Horse Power 280 Owners Hooper, Murrell & Williams Port belonging to London

ENGINES, &c.—

Description of Engines Triple expansion, Inverted Direct Acting, Surface condensing.
Diameter of Cylinders 24 1/2", 40", 65" Length of Stroke 42" No. of Rev. per minute 65 Point of Cut off, High Pressure 1/2 stroke Low Pressure 1/2 stroke

Diameter of Screw shaft 12 3/4" Diam. of Tunnel shaft 12" Diam. of Crank shaft journals 12 1/2" Diam. of Crank pin 12 1/2" size of Crank webs 7 1/2" x 20"

Diameter of screw 16 3/4" Pitch of screw Differential No. of blades 4 state whether moveable No total surface 80 sq. feet

No. of Feed pumps 2 diameter of ditto 3 1/4" Stroke 26" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 diameter of ditto 4" Stroke 26" Can one be overhauled while the other is at work Yes

Where do they pump from Sea, Engine Room Bilges and Tunnel.

No. of Donkey Engines Two Size of Pumps Ballast 9" x 9" Feed 4" x 7" Stroke 26" Where do they pump from Ballast—Engine Room Bilges, Sea and all tanks. Feed—Hotwell, Sea, Boilers, Engine Room Bilges Tunnel & 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" Are they connected to condenser, or to circulating pump 1 to circulating pump.

How are the pumps worked By Levers from the crosshead 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 16th July 1884

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from upper platform of Engine Room.

OILERS, &c.—

Number of Boilers Two Description cylindrical Multitubular, Double ended Whether Steel or Iron Steel

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 23rd June 1884

Description of superheating apparatus or steam chest None

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 65.25 Description of safety valves Spring No. to each boiler Two

Area of each valve 9.62 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 Yes Smallest distance between boilers and bunkers or woodwork 24" Diameter of boilers 12' 6"

Length of boilers 15' 6" description of riveting of shell long. seams Treble Double Butt straps circum. seams Treble, Lap. Thickness of shell plates 1 3/32"

Diameter of rivet holes long 1 1/8" cir 1 1/4" whether punched or drilled Drilled pitch of rivets long 4 1/8" cir 5" Lap of plating cir 8 5/8" Butt straps 16 3/4"

Per centage of strength of longitudinal joint 85.2 working pressure of shell by rules 161.6 lbs size of manholes in shell 16" x 12"

Size of compensating rings 7 1/4" x 1 1/8" Double riveted with 1 1/8" rivets No. of Furnaces in each boiler 4

Outside diameter 46 1/4" length, top 6' 1" bottom thickness of plates 19/32" description of joint welded corrugated if rings are fitted

Greatest length between rings working pressure of furnace by the rules 162.1 lbs combustion chamber plating, thickness, sides 5/8" back 5/8" top 5/8"

Pitch of stays to ditto, sides 8 5/8" x 8 1/2" back top 8 1/4" x 7 3/4" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 161.3 lbs Diameter of stays at smallest part 1.38" working pressure of ditto by rules 163.2 lbs end plates in steam space, thickness 3/32"

Pitch of stays to ditto 14 3/8" x 14 1/4" how stays are secured Double nuts working pressure by rules 162.7 lbs diameter of stays at smallest part 2.16" working pressure by rules 160.9 lbs Front plates at bottom, thickness 1/16" Back plates, thickness

Greatest pitch of stays working pressure by rules Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 1/2" thickness of tube plates, front 3/32" back 3/32" how stayed Stay tubes pitch of stays 9" x 9" width of water spaces 6"

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

DONKEY BOILERS

Description Vertical with four cross water tubes.

Made at West Hartlepool by whom made H. Gray & Co.

When made 1887 where fixed Stockholm

Working pressure 45 lbs tested by hydraulic pressure to 150 lbs No. of Certificate 1428 fire grate area 19 sq. feet. description of safety valves Spring

No. of safety valves 2 area of each 5.4 sq. in. fitted with easing gear Yes if steam from main boilers can enter the donkey boiler No

diameter of donkey boiler 6'0" length 13'0" description of riveting Long Lap double

Thickness of shell plates 9/16" diameter of rivet holes 13/16" whether punched or drilled punched pitch of rivets 2 7/8" lap of plating 4 1/4"

percentage of strength of joint 71.44 thickness of crown plates 9/16" stayed by Six stays 2" diameter

Diameter of furnace, top 4' 1/2" bottom 5' 2 1/2" length of furnace 5' 8 1/2" thickness of plates 9/16" description of joint Lap Single

Thickness of furnace crown plates 9/16" stayed by Same as shell crown working pressure of shell by rules 44.2

Working pressure of furnace by rules 45 lbs diameter of uptake 13" thickness of plates 3/8" thickness of water tubes 3/8"

SPARE GEAR. State the articles supplied:— 1 Spare Propellor, 2 Connecting Rod top End Bolts & Nuts, 2 Connecting Rod bottom End Bolts & Nuts, 2 Main Bearing Bolts & Nuts, 2 Feed check valves, 1 Set Feed pump valves, 1 Set Bilge pump valves, 2 Plates iron, 36 Bolts, Studs & Nuts assorted.

The foregoing is a correct description,

Per Pro CENTRAL MARINE ENGINEERING CO

Manufacturer.

Thomas Mudd.

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

Materials and Workmanship good.

The Engines and Boilers of this vessel have been constructed under Special Survey; after being fitted on board the Boilers were examined under steam and found tight, their Safety valves being then adjusted to retain a working pressure of 160 lbs per sq. inch. The Engines were tried and worked in a satisfactory manner.

The Machinery and Boilers are now in good order and safe working condition and eligible in my opinion to have the notification \times L. Ab. 6.7.87 recorded in the Society's Register Book.

The amount of Entry Fee .. £ 2 : 4 : 4 received by me,

Special £ 34 : " : "

Donkey Boiler Fee £ 2 : 2 : "

Certificate (if required) .. £ : : 26.7.1887

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

FRI JUL 29

JULY 1887

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

Wm Austin