

REPORT ON MACHINERY.

Port of West Hartlepool

Received at London Office

No. in Survey held at Hartlepool

Date, first Survey 20th March Last Survey 14th Sep 1893

MON. 18 SEP. 1893

Reg. Book.

on the Screw Steamer Appomattox

(Number of Visits 52)

Master Maxwell Built at Hartlepool By whom built Sumner Wilby & Co Tons { Gross 2874.60 Net 1821.46 When built 1893

Engines made at Hartlepool By whom made Messrs. Richardson & Sons when made 1893

Boilers made at Hartlepool By whom made Messrs. Richardson & Sons when made 1893

Registered Horse Power 412 Owners Chesapeake & Ohio Steamship Co Port belonging to West Hartlepool

Nom. Horse Power as per Section 28 412

ENGINES, &c. — Description of Engines Inverted, Triple Expansion, 3 Cranks No. of Cylinders 3

Diameter of Cylinders 28", 44", 72" Length of Stroke 48" Revolutions per minute 68 Diameter of Screw shaft as per rule 13.01

Diameter of Tunnel shaft as fitted 12.35 Diameter of Crank shaft journals 13 1/2" Diameter of Crank pin 14" Size of Crank webs 2 1/2" x 9"

Diameter of screw 14.6" Pitch of screw 16.6 to 19.6" No. of blades 4 State whether moveable yes Total surface 86.1 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3 1/2" 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

No. of Donkey Engines 3 Sizes of Pumps (10x9)(4 1/2x10)(2 1/2x4) No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four Two 3 1/2" dia, Two 3" dia, In Holds, &c. Five, One for hold 3 1/2" dia.

One 3 1/2" dia. main hold, One 3 1/2" dia After hold, One 3 1/2" dia Aftermast hold, 1-2" dia. tunnel hold

No. of bilge injections one size 7 1/2" Connected to condenser, or to circulating pump yes Is a separate donkey suction fitted in Engine room & size yes, 3 1/2" dia.

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible no sluices

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 and all boiler mountings accessible at all times yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock 11.7.93 Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from top platform of Engine room

BOILERS, &c. — (Letter for record (8)) Total Heating Surface of Boilers 6981 sq. ft.

No. and Description of Boilers Two, Cylindrical, Double Ended Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs.

Date of test 15.7.93 Can each boiler be worked separately yes Area of fire grate in each boiler 93.75 sq. ft. No. and Description of safety valves to each boiler Two, Spring Area of each valve 12.56 sq. in. Pressure to which they are adjusted 165 lbs. Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers 15" Mean diameter of boilers 14.6"

Length 15.9" Material of shell plates Steel Thickness 1 1/2" Description of riveting: circum. seams Double lap long. seams double butt straps

Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 12 or 7 1/4", 2 in 3 1/2" Lap of plates or width of butt straps 10 1/2"

Per centages of strength of longitudinal joint rivets 84.1 Working pressure of shell by rules 161 lbs. Size of manhole in shell 16 3/4" x 13"

Size of compensating ring 2.6 x 2.3 x 1 1/2" No. and Description of Furnaces in each boiler 6, Morrison's Material Steel under 26 tons Outside diameter 3.7 3/4"

Length of plain part top 4" bottom 7" Thickness of plates crown and bottom 9/16" Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 160 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 13/16"

Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8 1/4" x 8 1/2" Top 8 1/4" x 8 1/2" if stays are fitted with nuts or riveted heads nuts Working pressure by rules 176 lbs.

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 74.37 Working pressure by rules 159.6 lbs. End plates in steam space:

Material Steel Thickness 1 1/16" Pitch of stays 18" x 18" How are stays secured Double nuts Working pressure by rules 165 lbs. Material of stays steel

Diameter at smallest part 2 3/4" Area supported by each stay 324 sq. in. Working pressure by rules 165 lbs. Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate — Thickness — Greatest pitch of stays — Working pressure of plate by rules —

Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 15/16" Back 3/4" Mean pitch of stays 9" x 8 3/4"

Pitch across wide water spaces 14 1/2" Working pressures by rules 160 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10" x 1 3/4" Length as per rule 39" Distance apart 8 3/4" Number and pitch of Stays in each 3 — 8 1/2"

Working pressure by rules 166 lbs. Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —

If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —

Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

112. L.R.P.H. 5,000. - Port



HPL371-0018

DONKEY BOILER— Description *Cylindrical, multitubular, single ended.*
 Made at *Catehead* By whom made *Clarke, Chapman & Co.* When made *28.6.93* Where fixed *In stokehold*
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb*. No. of Certificates *4118* Fire grate area *30.99* Description of safety valves *Spring*
 No. of safety valves *one* Area of each *14.19* Pressure to which they are adjusted *85 lb*. If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *9.0* Length *9.0* Material of shell plates *steel* Thickness *7/16*
 Description of riveting long seams *Double end lap* Diameter of rivet holes *1* Whether punched or drilled *drilled* Pitch of rivets *3 3/8*
 Lap of plating *4 1/16* Per centage of strength of joint Rivets *70* Thickness of shell *end* plates *5/8 x 7/16* doubling Radius of do. — No. of Stays to do. *6*
 Dia. of stays. *1 5/8* Diameter of furnace Top *2.9* Bottom — Length of furnace *6.0* Thickness of furnace plates *7/16* Description of joint *single end butt* Thickness of furnace *end* plates *3/2 x 7/16* Stayed by *18 stays 8 x 7/2 pitch* Working pressure of shell by rules *83 lb*
 Working pressure of furnace by rules *86 lb*. Diameter of *water* tubes *3* Thickness of *water* tubes plates *5/8* Thickness of *water* tubes *10 B. 4. G.*

SPARE GEAR. State the articles supplied:— *2 Propeller blades, a set of bolts & nuts for a connecting rod, main bearing, & shaft coupling. a set of feed & bilge pump valves, 2 sets of piston springs, bolts, nuts & iron ass. Air and circulating pump buckets and rods, 12 air pump valves, 4 circulating pump valves, 50 condenser tubes, 6 boiler tubes.*

The foregoing is a correct description,
 RICHARDSON & SONS, Manufacturer. of Engines & main Boilers
J. B. Norton

General Remarks (State quality of workmanship, opinions as to class, &c.)
Main steam pipes tested by hydraulic pressure to 320 lb per square inch and found tight.
The engines and boilers of this vessel have been constructed under Special Survey and of a good quality of workmanship they have been tried under steam the safety valves adjusted and found to work well and are now in safe and efficient working condition and, in my opinion, eligible to have L.M.C. 9.93. recorded in the Register of this Society.
The Electric Lighting Installation of this vessel has been fitted by Messrs. Clarke Chapman & Co. Ltd. and their Report on the same is appended. The engine and dynamo are fitted on the lower platform and near the after bulkhead of the engine-room on the port side of the vessel.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9.93 -

Arch
 18/9/93 -

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

MACHINERY CERTIFICATE

Certificate (if required) to be sent to WRITER.
 The amount of Entry Fee.. £ 3 : 0 : When applied for,
 Special £ 40 : 12 : 16.9.93
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : : 18.9.93
 19.9.93

Committee's Minute TUES. 19 SEP 1893
 Assigned + L.M.C. 9.93

