

# REPORT ON MACHINERY.

No. 13097.

Port of WEST HARTLEPOOL.

Received at London Office MON. 22 OCT. 1906

No. in Survey held at West Hartlepool Date, first Survey 18<sup>th</sup> May, 06 Last Survey 17<sup>th</sup> October, 1906

Reg. Book. Suppl. on the Steel Steamer "Veraston" (Number of Visits 56) Tons {Gross 1825.36 Net 1154.95 When built 1906

Master J. W. Weeks Built at West Hartlepool By whom built W Gray & Co Ltd

Engines made at West Hartlepool By whom made Central Marine & Works when made 1906

Boilers made at West Hartlepool By whom made Central Marine & Works when made 1906

Registered Horse Power \_\_\_\_\_ Owners Marchiston S.S. Co. Ltd (W. Scott & Co) Port belonging to West Hartlepool

nom. Horse Power as per Section 28 167 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Compound No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 20.3 1/2. 53 Length of Stroke 36 Revs. per minute 65 Dia. of Screw shaft 11.64 Material of Steel

the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tight

the propeller boss Yes If the liner is in more than one length are the joints burned No If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive No If two

boilers are fitted, is the shaft lapped or protected between the liners No Length of stern bush 48

Dia. of Tunnel shaft 9.46 Dia. of Crank shaft journals 9.94 Dia. of Crank pin 10.1/2 Size of Crank webs 11.64 Dia. of thrust shaft under

bars 10.1/2 Dia. of screw 1.1/2 Pitch of Screw 13.9 No. of Blades 4 State whether moveable No Total surface 63.47

No. of Feed pumps Two Diameter of ditto 2 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 3 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 8" x 8" & 1 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Two 2 1/2" one 3" In Holds, &c. Four 2 1/2" Steam 3"

No. of Bilge Injections Five Connected to condenser, or to circulating pump Five Is a separate Donkey Suction fitted in Engine room & size Yes 3"

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 Yes

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 they protected No

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

Dates of examination of completion of fitting of Sea Connections 13/9/06 of Stern Tube 4/10/06 Screw shaft and Propeller 4/10/06

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top Staircase

MANIFOLDERS, &c.—(Letter for record S) Manufacturers of Steel

Total Heating Surface of Boilers 2495 Is Forced Draft fitted No No. and Description of Boilers Two Single Ended

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 14/9/06 No. of Certificate 3076

Can each boiler be worked separately Yes Area of fire grate in each boiler 32.6 sq ft No. and Description of Safety Valves to

each boiler Two Spring Area of each valve 7.07 sq in Pressure to which they are adjusted 160 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean dia. of boilers 12.5 Length 10.0 Material of shell plates Steel

Thickness 3/16" Range of tensile strength 32-50 Are the shell plates welded or flanged Both Descrip. of riveting: cir. seams No

Longitudinal seams Welded Diameter of rivet holes in long. seams 1" Pitch of rivets 7/16" Lap of plates or width of butt straps 15"

Percentages of strength of longitudinal joint rivets 85-87% Working pressure of shell by rules 164 lbs Size of manhole in shell 16" x 12"

Plate 85.8% No. and Description of Furnaces in each boiler Two Plain Material Steel Outside diameter 45"

Length of plain part 72.5 Thickness of plates 1 1/2" Description of longitudinal joint Welded No. of strengthening rings None

Working pressure of furnace by the rules 169 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 13/16"

Thickness of stays to ditto: Sides 5/16" x 8 1/2" Back 5/16" x 8 1/2" Top 5/16" x 8 1/2" If stays are fitted with nuts or riveted heads None Working pressure by rules 163 lbs

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 54.2 sq ft Working pressure by rules 192 lbs End plates in steam space:

Material Steel Thickness 1" Pitch of stays 17" x 16" How are stays secured Welded Working pressure by rules 164 lbs Material of stays Steel

Diameter at smallest part 2 1/2" Area supported by each stay 17" x 16" Working pressure by rules 167 lbs Material of Front plates at bottom Steel

Thickness 15/16" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 16" Working pressure of plate by rules 160 lbs

Diameter of tubes 3 1/2" Pitch of tubes 24 1/2" Material of tube plates Steel Thickness: Front 15/16" Back 12/16" Mean pitch of stays 9"

Distance across wide water spaces 14 1/2" Working pressures by rules 166 lbs Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 8 1/2" x 11" Length as per rule 29 1/2" Distance apart 8 1/2" Number and pitch of stays in each Two 8" P 5 1/2"

Working pressure by rules 170 lbs Superheater or Steam chest; how connected to boiler \_\_\_\_\_ 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

Pitch of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Diameter of flue \_\_\_\_\_ Material of flue plates \_\_\_\_\_ Thickness \_\_\_\_\_

Strengthened 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 \_\_\_\_\_

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Lloyd's Register Foundation

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *See Report attached hereto*

No. *One* Description *Blaker Patent*  
 Made at *Darlington* By whom made *Blaker Boiler Works Co* When made *1906* Where fixed *Atchafale*  
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb* Date of test *29/9/06* No. of Certificates *779* Fire grate area *28 1/4 sq ft* Description of Stays  
 Valves *Spring* No. of Safety Valves *Two* Area of each *7.07 sq in* Pressure to which they are adjusted *80 lb* Date of adjustment *16/10/06*  
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_  
 Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_  
 Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_  
 Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:—*Two top end bolts. Two bottom end bolts. Two main beam bolts. One cut coupling bolt. One cut lead pump valve. One cut bridge pump valve. One cut check valve. 15 pressure piston springs. Piston pins. Bolt nuts.*

FOR THE CENTRAL MARINE ENGINE WORKS  
 (100, Gray & Co. St.)  
*[Signature]*  
 The foregoing is a correct description,  
 MANAGER. Manufacturer.

Dates of Survey  
 During progress of work in shops— *1906. May. 18. 20. June. 7. 9. 11. 12. 13. 25. 26. 29. July. 3. 4. 7. 9. 10. 13. 16. 17. 18. 19. 20. 25. 26. 27. 30. 31. Aug. 1. 2. 13. 14.*  
 During erection on board vessel— *20. Sept. 5. 6. 7. 11. 12. 13. 14. 17. 18. 19. 20. 25. 26. 28. Oct. 1. 3. 4. 5. 10. 16. 17.*  
 Total No. of visits *56* Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *25/9/06* Slides *25/9/06* Covers *25/9/06* Pistons *17/9/06* Rods *14/9/06*  
 Connecting rods *14/9/06* Crank shaft *2/9/06* Thrust shaft *2/9/06* Tunnel shafts *3/10/06* Screw shaft *11/9/06* Propeller *2/9/06*  
 Stern tube *19/9/06* Steam pipes tested *19/9/06 3/10/06* Engine and boiler seatings *4/10/06* Engines holding down bolts *3/10/06*  
 Completion of pumping arrangements *5/10/06* Boilers fixed *10/10/06* Engines tried under steam *5/10/06*  
 Main boiler safety valves adjusted *5/10/06* Thickness of adjusting washers *Standard SS 19/16 SP 1 1/16 PP 1 1/16 PS 1 1/16*  
 Material of Crank shaft *Steel* Identification Mark on Do. *4428* Material of Thrust shaft *Steel* Identification Mark on Do. *4428*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *4428* Material of Screw shafts *Steel* Identification Marks on Do. *4428*  
 Material of Steam Pipes *Copper* Test pressure *450 lb*

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

*West Hartlepool*  
 The machinery and boilers of this steamer have been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification + L.M.C. 10.06. in the Register Book.

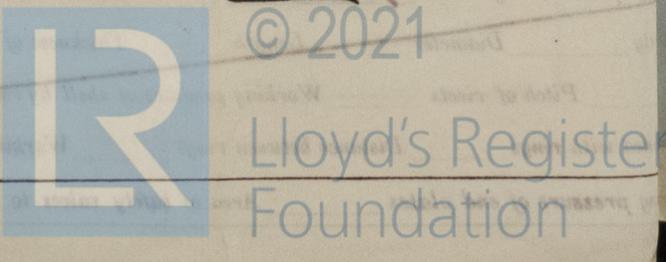
It is submitted that this vessel is eligible for THE RECORD L.M.C. 10.06.

*[Signature]*  
 22.10.06

The amount of Entry Fee. . . £ *2* : :  
 Special . . . . . £ *25* : :  
 Donkey Boiler Fee . . . . . £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, *20.10.06*  
 When received, *23.10.06*

*[Signature]*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute  
 Assigned  
 TUES. 23 OCT 1906  
*[Signature]*



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.