

## REPORT ON MACHINERY.

Hpl. No. 12626

Port of WEST HARTLEPOOL

Received at London Office JUL 8 1905

No. in Survey held at West Hartlepool Date, first Survey 28<sup>th</sup> March 05 Last Survey 23<sup>rd</sup> May 1905  
 Reg. Book. Main boiler for Lochrane House No. 342 S.S. Citrus Number of Visits 141.36  
 on the Main boiler for Lochrane House No. 342 S.S. Citrus Tons { Gross  
 Net  
 Master Calby Built at Calby By whom built Lochrane & Son When built 1905  
 Engines made at Grimsby By whom made Central Marine & Work when made 1905  
 Boilers made at West Hartlepool By whom made Central Marine & Work when made 1905  
 Registered Horse Power 71 Owners Central Marine & Work Port belonging to Central Marine & Work  
 Nom. Horse Power as per Section 28 71 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

## ENGINES, &amp;c.—Description of Engines

No. of Cylinders 2 No. of Cranks 2  
 Dia. of Cylinders 14 1/2 Length of Stroke 18 Revs. per minute 110 Dia. of Screw shaft 4 1/2 as per rule 4 1/2 Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner made water tight in the propeller boss  
 If the liner is in more than one length are the joints burned 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  
 If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush  
 Dia. of Tunnel shaft 4 1/2 as per rule 4 1/2 Dia. of Crank shaft journals 4 1/2 as per rule 4 1/2 Dia. of Crank pin 4 1/2 Size of Crank webs 4 1/2 Dia. of thrust shaft under collars 4 1/2  
 Dia. of screw 4 1/2 Pitch of screw 4 1/2 No. of blades 4 1/2 State whether moveable 4 1/2 Total surface 4 1/2  
 No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 4 1/2 Can one be overhauled while the other is at work 4 1/2  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 4 1/2 Can one be overhauled while the other is at work 4 1/2  
 No. of Donkey Engines 2 Sizes of Pumps 4 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps 4 1/2  
 In Engine Room 4 1/2 In Holds, &c. 4 1/2

No. of bilge injections 2 sizes 4 1/2 Connected to condenser, or to circulating pump 4 1/2 Is a separate donkey suction fitted in Engine room & size 4 1/2  
 Are all the bilge suction pipes fitted with roses 4 1/2 Are the roses in Engine room always accessible 4 1/2 Are the sluices on Engine room bulkheads always accessible 4 1/2  
 Are all connections with the sea direct on the skin of the ship 4 1/2 Are they Valves or Cocks 4 1/2  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates 4 1/2 Are the discharge pipes above or below the deep water line 4 1/2  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel 4 1/2 Are the blow off cocks fitted with a spigot and brass covering plate 4 1/2  
 What pipes are carried through the bunkers 4 1/2 How are they protected 4 1/2  
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times 4 1/2  
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges 4 1/2  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock 4 1/2 Is the screw shaft tunnel watertight 4 1/2  
 Is it fitted with a watertight door 4 1/2 worked from 4 1/2

## BOILERS, &amp;c.—

(Letter for record S)Total Heating Surface of Boilers 114892 Is forced draft fitted 4 1/2

No. and Description of Boilers One Cylindrical Working Pressure 185 lb Tested by hydraulic pressure to 270 lb  
 Date of test 22/5/05 Can each boiler be worked separately 4 1/2 Area of fire grate in each boiler 32 1/2 No. and Description of safety valves to each boiler 2 Spring loaded Area of each valve 3.982 Pressure to which they are adjusted 190 lb Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 4 1/2 Mean dia. of boilers 12'0" Length 10'2" Material of shell plates Steel  
 Thickness 1 1/2" Range of tensile strength 27,200 Are they welded or flanged both Descrip. of riveting: cir. seams 4 1/2 long. seams all chip seam  
 Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 7 7/16" Lap of plates or width of butt straps 16 1/2"  
 Per centages of strength of longitudinal joint 85 Working pressure of shell by rules 186 lb Size of manhole in shell 16" x 12"  
 Size of compensating ring 32-28" x 1 1/2" No. and Description of Furnaces in each boiler Two Plain Material Steel Outside diameter 44 1/2"  
 Length of plain part 5'9" Thickness of plates 1 1/2" Description of longitudinal joint welded No. of strengthening rings 4  
 Working pressure of furnace by the rules 189 lb Combustion chamber plates: Material Steel Thickness: Sides 1 1/2" Back 1 1/2" Top 1 1/2" Bottom 1 1/2"  
 Pitch of stays to ditto: Sides 9 1/2" x 9" Back 9 1/2" x 9" Top 9 1/2" x 9" If stays are fitted with nuts or riveted heads Yes Working pressure by rules 191 lb  
 Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 9 1/2" x 9" Working pressure by rules 221 lb End plates in steam space: 4 1/2  
 Material Steel Thickness 1 1/2" Pitch of stays 17" x 15 1/2" How are stays secured all nut Working pressure by rules 191 lb Material of stays Steel  
 Diameter at smallest part 2 1/2" Area supported by each stay 17" x 15 1/2" Working pressure by rules 192 lb Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 10 1/2" Greatest pitch of stays 14" Working pressure of plate by rules 185 lb  
 Diameter of tubes 3 1/2" Pitch of tubes 14 1/2" Material of tube plates Steel Thickness: Front 1" Back 1 1/2" Mean pitch of stays 9"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 189 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 1 1/2" Length as per rule 31 5/8" Distance apart 84" Number and pitch of Stays in each 4 1/2  
 Working pressure by rules 196 lb Superheater or Steam chest; how connected to boiler 4 1/2 Can the superheater be shut off and the boiler worked separately 4 1/2  
 Diameter 4 1/2 Length 4 1/2 Thickness of shell plates 4 1/2 Material 4 1/2 Description of longitudinal joint 4 1/2 Diam. of rivet holes 4 1/2  
 Pitch of rivets 4 1/2 Working pressure of shell by rules 4 1/2 Diameter of flue 4 1/2 Material of flue plates 4 1/2 Thickness 4 1/2  
 If stiffened with rings 4 1/2 Distance between rings 4 1/2 Working pressure by rules 4 1/2 End plates: Thickness 4 1/2 How stayed 4 1/2  
 Working pressure of end plates 4 1/2 Area of safety valves to superheater 4 1/2 Are they fitted with easing gear 4 1/2

W737-0064

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**DONKEY BOILER—** No. \_\_\_\_\_ Description \_\_\_\_\_

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 \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_

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 \_\_\_\_\_ 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 \_\_\_\_\_

Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,

*J. B. Bannerman*

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1905 Mar 28, 29, 30 Apr 3, 5, 6, 7, 10, 11, 12, 13, 14, 17, 18, 19, 20, 26, 27, 28 May 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 22, 23  
During erection on board vessel - - June 15, 21, 29  
Total No. of visits Apr 36 June 3

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

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

*Workmanship Good.*

*This Main Boiler has been constructed under Special Survey in accordance with the approved Photo Print and has been satisfactorily tested by hydraulic pressure and found tight and sound.*

*The Boiler has been forwarded to Plymouth where it will be placed on board SS. Lochmaw No. 1. S. N. 3142*

*The boiler has been securely fastened on board the vessel and the safety valves adjusted under steam.*

*DR*

The amount of Entry Fee. £ 3 : 11 :  
Special .. .. £ 3 : 11 :  
Donkey Boiler Fee .. .. £ : :  
Travelling Expenses (if any) £ : :

When applied for,

23. 5. 05

When received,

13. 6. 05

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

Committee's Minute

Assigned

*See minute on Grimsby*

*Rpt No 3690*

TUES. 11 JUL 1905



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