

## REPORT ON MACHINERY.

No. 13099

Port of WEST HARTLEPOOL.

Received at London Office WED. 24 OCT 1906

No. in Survey held at West Hartlepool Date, first Survey 22<sup>nd</sup> March Last Survey 18<sup>th</sup> October, 1906.

Reg. Book.

Survey on the

Master W. b. Pope Built at W Hartlepool By whom built Lurness & Co When built 1906Engines made at Hartlepool By whom made Richardsons & Co when made 1906Boilers made at " By whom made " when made 1906Registered Horse Power 325 Owners J. b. Harrison Ltd Port belonging to LondonNom. Horse Power as per Section 28 325 Is Refrigerating Machinery fitted for cargo purposes " Is Electric Light fitted "ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3Dia. of Cylinders 24. 29. 66 Length of Stroke 48 Revs. per minute 64 Dia. of Screw shaft 13 1/4 as per rule 13 1/4 as fitted 14 3/4 Material of IronIs 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 tightin the propeller boss Yes If the liner is in more than one length are the joints burned " If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive " If twoliners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5'-0"Dia. of Tunnel shaft 12 3/4 as per rule 12 3/4 as fitted 13 1/4 Dia. of Crank shaft journals 12 3/4 as per rule 12 3/4 as fitted 13 1/4 Dia. of Crank pin 14 Size of Crank webs 8 1/2 x 25 1/2 Dia. of thrust shaft undercollars 13 1/4 Dia. of screw 17'-0" Pitch of Screw 16'-0" No. of Blades 4 State whether moveable No Total surface 92 sqNo. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 27 Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 3 3/4 Stroke 27 Can one be overhauled while the other is at work YesNo. of Donkey Engines 2 Sizes of Pumps 6 x 4 x 6 & 8 1/2 x 7 No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room No 3 hold (2) 3 1/2" No 4 hold (2) 3 1/2" Tunnel force 2 1/2" In Holds, &c. No hold (2) 3 1/2" No 2 hold (2) 3 1/2"No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump Cir Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"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 YesAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks bothAre 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 aboveAre 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 YesWhat 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 YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 19/9/06 of Stern Tube 19/9/06 Screw shaft and Propeller 19/9/06Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top PlatformOILERS, &c.—(Letter for record 5) Manufacturers of Steel Clydebridge Steel Co LtdTotal Heating Surface of Boilers 4993 sq Is Forced Draft fitted No No. and Description of Boilers 2 Single endedWorking Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 24/8/06 No. of Certificate 3073Can each boiler be worked separately Yes Area of fire grate in each boiler 50.2 sq No. and Description of Safety Valves toeach boiler 2 Spring Area of each valve 7.06 sq Pressure to which they are adjusted 185 lbs Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 27" Mean dia. of boilers 16'-3" Length 10'-9" Material of shell plates SThickness 1 1/16 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DRlong. seams DBS TR Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 9" Lap of plates or width of butt straps 19"Per centages of strength of longitudinal joint 85.3% Working pressure of shell by rules 181 lbs Size of manhole in shell 13 x 16 1/2Size of compensating ring 1 9/16 No. and Description of Furnaces in each boiler 3 Morrison Material S Outside diameter 50 3/4Length of plain part 9 Thickness of plates 1 9/32 Description of longitudinal joint welded No. of strengthening rings "Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material S Thickness: Sides 1 9/32 Back 1 9/32 Top 1 9/32 Bottom 7/8Pitch of stays to ditto: Sides 7 1/2 x 8 3/4 Back 8 1/4 x 8 Top 7 1/4 x 8 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183.5 lbsMaterial of stays S Diameter at smallest part 1 3/8 Area supported by each stay 66 sq Working pressure by rules 180 lbs End plates in steam space:Material S Thickness 1 1/32 Pitch of stays 16 3/8 x 16 How are stays secured DR & W Working pressure by rules 180.6 lbs Material of stays SDiameter at smallest part 2 1/2 Area supported by each stay 272 sq Working pressure by rules 180 lbs Material of Front plates at bottom SThickness 7/8 Material of Lower back plate S Thickness 1 3/16 Greatest pitch of stays 13 x 8 Working pressure of plate by rules 196 lbsDiameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates S Thickness: Front 1 5/16 Back 3/4 Mean pitch of stays 8 7/8Pitch across wide water spaces 14 1/4 Working pressures by rules 185 lbs Girders to Chamber tops: Material S Depth andthickness of girder at centre 8 1/2 x 1 3/4 Length as per rule 31 1/2 Distance apart 8 3/4 Number and pitch of stays in each 3. 7 1/4Working pressure by rules 187.5 lbs Superheater or Steam chest; how connected to boiler " Can the superheater be shut off and the boiler workedseparately " Diameter " Length " Thickness of shell plates " Material " Description of longitudinal joint " Diam. of rivetholes " 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 "

W562-0039



# VERTICAL DONKEY BOILER—Manufacturers of Steel

No. 86 Description Vertical Donkey Boiler  
 Made at West Hartlepool By whom made Richardsons Westgarth & Co. Limited When made 1906 Where fixed On board  
 Working pressure 150 lbs tested by hydraulic pressure to 225 lbs Date of test 19.10.06 No. of Certificate 1006 Fire grate area 10.06 Description of Safe None  
 Valves 2 No. of Safety Valves 2 Area of each 1.5 Pressure to which they are adjusted 150 lbs Date of adjustment 19.10.06  
 If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 18 in Length 4 ft 6 in  
 Material of shell plates Iron Thickness 1/2 in Range of tensile strength 25 tons Descrip. of riveting long. seams Double  
 Dia. of rivet holes 1/2 in Whether punched or drilled Punched Pitch of rivets 2 in Lap of plating 1 in Per centage of strength of joint 100 Rivets 100  
 Working pressure of shell by rules 150 lbs Thickness of shell crown plates 1/2 in Radius of do. 18 in No. of stays to do. 2 Dia. of stays 1 in  
 Diameter of furnace Top 18 in Bottom 18 in Length of furnace 4 ft 6 in Thickness of furnace plates 1/2 in Description of joint Double  
 Working pressure of furnace by rules 150 lbs Thickness of furnace crown plates 1/2 in Stayed by 2  
 Diameter of uptake 18 in Thickness of uptake plates 1/2 in Thickness of water tubes 1/2 in Dates of survey 19.10.06

SPARE GEAR. State the articles supplied:—

1 spare propeller & spare gear as per rule requirements

The foregoing is a correct description.

**RICHARDSONS WESTGARTH & CO. LIMITED**

Manufacturer.

Dates of Survey while building 1906. Mar. 22. Apr. 25. 27. May. 3. 10. 29. 30. June. 1. 12. 27. 29. July. 2. 4. 6. 9. 12. 13. 20. 23. 25. 27. Aug. 1. 2. 3. 15. 22. 23. 24. 27. Sept. 3. 5. 6. 10. 13. 14. 15. 19. Oct. 15. 16. 18.  
 During progress of work in shops 1906. Mar. 22. Apr. 25. 27. May. 3. 10. 29. 30. June. 1. 12. 27. 29. July. 2. 4. 6. 9. 12. 13. 20. 23. 25. 27. Aug. 1. 2. 3. 15. 22. 23. 24. 27. Sept. 3. 5. 6. 10. 13. 14. 15. 19. Oct. 15. 16. 18.  
 During erection on board vessel 1906. Mar. 22. Apr. 25. 27. May. 3. 10. 29. 30. June. 1. 12. 27. 29. July. 2. 4. 6. 9. 12. 13. 20. 23. 25. 27. Aug. 1. 2. 3. 15. 22. 23. 24. 27. Sept. 3. 5. 6. 10. 13. 14. 15. 19. Oct. 15. 16. 18.  
 Total No. of visits 39 Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 20/7/06 Slides 13/9/06 Covers 6/7/06 Pistons 6/7/06 Rods 6/7/06  
 Connecting rods 13/9/06 Crank shaft 29/6/06 Thrust shaft 29/6/06 Tunnel shafts 22/8/06 Screw shaft 27/8/06 Propeller 22/8/06  
 Stern tube 23/7/06 Steam pipes tested 14/9/06 Engine and boiler seatings 13/9/06 Engines holding down bolts 13/9/06  
 Completion of pumping arrangements 19/9/06 Boilers fixed 13/9/06 Engines tried under steam 19/9/06  
 Main boiler safety valves adjusted 19/9/06 Thickness of adjusting washers SBSB 7/16 P 7/16 PBP 7 3/8 S 3/8  
 Material of Crank shaft S Identification Mark on Do. 4447 Material of Thrust shaft S Identification Mark on Do. 4447  
 Material of Tunnel shafts S Identification Marks on Do. 4447 Material of Screw shafts S Iron Identification Marks on Do. 4447  
 Material of Steam Pipes W Iron Test pressure 600 lbs

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

The engines & boilers of this vessel have been constructed under special survey & the materials & workmanship are found to be good. The engines have been tried under steam & the safety valves of the main & donkey boilers adjusted to the working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of H.M.C. 10-06 in red in the register book.

It is submitted that this vessel is eligible for THE REDUCTION H.M.C. 10-06.

The amount of Entry Fee. £ 3 : : When applied for. 19.10.06  
 Special .. .. £ 36 : : 19.10.06  
 Donkey Boiler Fee .. .. £ : : When received. 22.10.06  
 Travelling Expenses (if any) £ : : 19.10.06

Committee's Minute

FRI. 26 OCT 1906

Assigned

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



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MACHINERY CERTIFICATE WRITTEN.