

# REPORT ON MACHINERY.

No. 13130 26.11.06

Port of WEST HARTLEPOOL

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No. in Survey held at West Hartlepool Date, first Survey 31<sup>st</sup> May, 06 Last Survey 15<sup>th</sup> Nov 1906  
 Reg. Book. 30 AMH on the S. S. Elloe (Number of Visits 36)  
 Master W. B. Blacklin Built at W. Hartlepool By whom built Lumess Wigham & Co. Ld. Tons { Gross 3808.58  
 Engines made at Hartlepool By whom made Richardsons Wigham & Co when made 1906 Net 2485.04  
 Boilers made at " By whom made " when made 1906  
 Registered Horse Power 317 Owners Bennetts & Co. Port belonging to Grimshy  
 Nom. Horse Power as per Section 28 317 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 24. 39. 66 Length of Stroke 45 Revs. per minute 60 Dia. of Screw shaft 1 1/2 as per rule 1 1/2 as fitted 1 1/2 Material of screw shaft Leopold  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in 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 part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4. 10 1/2  
 Dia. of Tunnel shaft 1 1/2 as per rule 1 1/2 as fitted 1 1/2 Dia. of Crank shaft journals 1 3/8 as per rule 1 3/8 as fitted 1 3/8 Dia. of Crank pin 1 3/8 Size of Crank webs 8. 25 1/2 Dia. of thrust shaft under collars 1 3/8 Dia. of screw 16. 9 Pitch of Screw 16. 6 No. of Blades 4 State whether moveable No Total surface 88. 9 1/2  
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 27 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3 3/4 Stroke 27 Can one be overhauled while the other is at work Yes  
 No. 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 pumps In Engine Room (4) 3 1/2 dia In Holds, &c. No 1 hold 2. 3 1/2 No 2 hold 2. 3 1/2  
 No. 3 hold 2. 3 1/2 No 4 hold 2. 3 1/2 Summit well 1. 2 1/2  
 No. of Bilge Injections 1 sizes 5 Connected to condenser, or to circulating pump Yes 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 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 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  
 Dates of examination of completion of fitting of Sea Connections 16/10/06 of Stern Tube 16/10/06 Screw shaft and Propeller 16/10/06  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Spencers  
 Total Heating Surface of Boilers 4891 Is Forced Draft fitted No No. and Description of Boilers Two Single Ended  
 Working Pressure 180lb Tested by hydraulic pressure to 360 Date of test 5/9/06 No. of Certificate 3075  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 52. 3 1/2 No. and Description of Safety Valves to each boiler 2 Spring Area of each valve 7. 06 Pressure to which they are adjusted 180lb Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 23 Mean dia. of boilers 16. 0 Length 10. 9 Material of shell plates S  
 Thickness 1 9/32 Range of tensile strength 28. 5/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR. long. seams TRDBS Diameter of rivet holes in long. seams 1 9/32 Pitch of rivets 8 5/8 Lap of plates or width of butt straps 18 1/4  
 Per centages of strength of longitudinal joint rivets 86. 8 1/2 plate 83. 25 1/2 Working pressure of shell by rules 181. 6 1/2 Size of manhole in shell 13 x 16 1/2  
 Size of compensating ring 1 9/32 No. and Description of Furnaces in each boiler 2 Morrison Material S Outside diameter 50 1/4  
 Length of plain part top 9 bottom 9 Thickness of plates crown 5/8 bottom 5/8 Description of longitudinal joint weld. No. of strengthening rings —  
 Working pressure of furnace by the rules 198. 5 Combustion chamber plates: Material S Thickness: Sides 19/32 Back 19/32 Top 19/32 Bottom 7/8  
 Pitch of stays to ditto: Sides 9 1/2 Back 8 1/4 Top 8 1/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183. 5 1/2  
 Material of stays S Diameter at smallest part 1 3/8 Area supported by each stay 8 1/4 x 8 Working pressure by rules 180lb End plates in steam space: Material S Thickness 1 Pitch of stays 16 1/4 x 16 1/2 How are stays secured DR 1 1/2 Working pressure by rules 181lb Material of stays S  
 Diameter at smallest part 2 1/2 Area supported by each stay 16 1/4 x 16 1/2 Working pressure by rules 187 Material of Front plates at bottom S  
 Thickness 7/8 Material of Lower back plate S Thickness 1 1/16 Greatest pitch of stays 15. 2 8/8 Working pressure of plate by rules 194lb  
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 Material of tube plates S Thickness: Front 15/16 Back 3/4 Mean pitch of stays 9  
 Pitch across wide water spaces 14 1/4 Working pressures by rules 188lb Girders to Chamber tops: Material S Depth and thickness of girder at centre 8 1/2 x 1 1/4 Length as per rule 3 1/2 Distance apart 8 1/4 Number and pitch of stays in each 3. 7 1/4  
 Working pressure by rules 187. 5 1/2 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 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 —

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. *1016130* Description *Vertical Donkey Boiler*

Made at *West Hartlepool* By whom made *Richardsons, Westgarth & Co. Limited* When made *1906* Where fixed *on board vessel*

Working pressure tested by hydraulic pressure to *600 lbs.* Date of test *28/9/06* No. of Certificate *11.06* Fire grate area *1.5* Description of Safety *as per rule requirements*

Valves *1/2 let air & feed dry valves* No. of Safety Valves *1* Area of each *1/2* Pressure to which they are adjusted *600 lbs.* Date of adjustment *28/9/06*

If fitted with easing gear *No* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *18"* Length *12'*

Material of shell plates *W Iron* Thickness *3/16"* Range of tensile strength *35,000 lbs.* Descrip. of riveting long. seams *lap*

Dia. of rivet holes *3/16"* Whether punched or drilled *drilled* Pitch of rivets *2"* Lap of plating *1"* Per centage of strength of joint *85%* Rivets *1/4"* Plates *1/4"*

Working pressure of shell by rules *600 lbs.* Thickness of shell crown plates *3/16"* Radius of do. *12"* No. of stays to do. *1* Dia. of stays *1/2"*

Diameter of furnace Top *18"* Bottom *18"* Length of furnace *12'* Thickness of furnace plates *3/16"* Description of joint *lap*

Working pressure of furnace by rules *600 lbs.* Thickness of furnace crown plates *3/16"* Stayed by *1 stay*

Diameter of uptake *18"* Thickness of uptake plates *3/16"* Thickness of water tubes *3/16"* Dates of survey *28/9/06*

SPARE GEAR. State the articles supplied:— *1 propeller shaft 1/2 let air pump valves 1/2 let air & feed dry valves 1 spare propeller & spare gear as per rule requirements*

The foregoing is a correct description.  
**FOR RICHARDSONS, WESTGARTH & CO. LIMITED**  
*Richardsons* Manufacturer.

Dates of Survey while building	During progress of work in shops	<i>1906. May. 31. June. 27. July. 24. 6. 9. 13. 20. 23. 25. 27. 30. Aug. 2. 3. 15. 20. 22. 23. 24. Sept. 5. 6. 10. 12. 13. 14. 17. 25. 26. 26. Oct. 1. 4.</i>
	During erection on board vessel	<i>8. 10. 12. 16. Nov. 15</i>
	Total No. of visits	<i>36</i>

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts	Cylinders	<i>28/9/06</i>	Slides	<i>28/9/06</i>	Covers	<i>28/9/06</i>	Pistons	<i>28/9/06</i>	Rods	<i>28/9/06</i>
	Connecting rods	<i>28/9/06</i>	Crank shaft	<i>28/9/06</i>	Thrust shaft	<i>28/9/06</i>	Tunnel shafts	<i>23/7/06</i>	Screw shaft	<i>26/9/06</i>
	Stern tube	<i>28/9/06</i>	Steam pipes tested	<i>12/10/06</i>	Engine and boiler seatings	<i>10/10/06</i>	Engines holding down bolts	<i>10/10/06</i>		
	Completion of pumping arrangements	<i>16/10/06</i>	Boilers fixed	<i>10/10/06</i>	Engines tried under steam	<i>16/10/06</i>				
	Main boiler safety valves adjusted	<i>16/10/06</i>	Thickness of adjusting washers	<i>PBP 5/16 SB 5/16 SB PB 5/16 SB 9/32</i>						
	Material of Crank shaft	<i>S</i>	Identification Mark on Do.	<i>4448</i>	Material of Thrust shaft	<i>S</i>	Identification Mark on Do.	<i>4448</i>		
	Material of Tunnel shafts	<i>S</i>	Identification Marks on Do.	<i>4448</i>	Material of Screw shafts	<i>S Iron</i>	Identification Marks on Do.	<i>4448</i>		
	Material of Steam Pipes	<i>W Iron</i>	Test pressure	<i>600 lbs.</i>						

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 sound & 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 L.M.C. 11.06 (changed) in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 11.06

The amount of Entry Fee..	£ 3 : 0 : 0	When applied for	<i>23.11.06</i>
Special	£ 35 : 17 : 0	When received	<i>26.11.06</i>
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

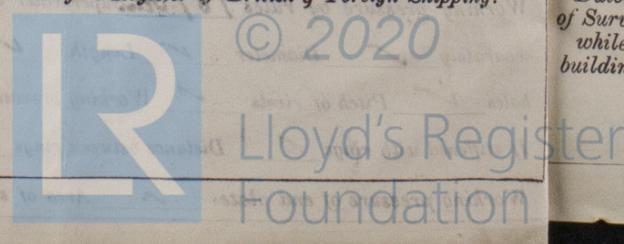
*Thos. L. Thornton*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

TUES. NOV 27 1906

Committee's Minute

Assigned

MACHINERY CERTIFICATE WRITTEN



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 Dates of Survey while building