

## 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, 06Last Survey 15<sup>th</sup> Nov 1906.

Reg. Book.

on the S. S. ElloeMaster W. B. BlacklinBuilt at W. HartlepoolBy whom built Lumess Wigham & Co. Ltd.Tons Gross 3808.58Net 2485.04When built 1906Engines made at HartlepoolBy whom made Richardsons Wigham & Co.when made 1906.Boilers made at "By whom made "when made 1906

Registered Horse Power

Owners Bennetts & Co.Port belonging to Gimsby.Nom. Horse Power as per Section 28 317.10Is Refrigerating Machinery fitted for cargo purposes NoIs Electric Light fitted No

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

Triple ExpansionNo. of Cylinders 3No. of Cranks 3Dia. of Cylinders 24" 39" 66"Length of Stroke 45Revs. per minute 60Dia. of Screw shaft as per rule 14 1/2"Material of screw shaft LeopoldIs 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 as per rule 12 1/2"Dia. of Crank shaft journals as per rule 13 1/8"Dia. of Crank pin 13 1/8"Size of Crank webs 8' 2 1/2"

Dia. of thrust shaft under

collars 13 1/8"Dia. of screw 16' 9"Pitch of Screw 16' 6"No. of Blades 4State whether moveable NoTotal surface 88.9 sqNo. of Feed pumps 2Diameter of ditto 3"Stroke 27"Can one be overhauled while the other is at work YesNo. of Bilge pumps 2Diameter of ditto 3 3/4"Stroke 27"Can one be overhauled while the other is at work Yes.No. of Donkey Engines 2Sizes 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)Dia. 3 1/2"In Holds, &c. No 1 hold 2-3 1/2"No 2 hold 2-3 1/2"No. of Bilge Injections 1sizes 5"Connected to condenser, or to circulating pump YesIs 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 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 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 16/10/06of Stern Tube 16/10/06Screw shaft and Propeller 16/10/06Is the Screw Shaft Tunnel watertight Yes.Is it fitted with a watertight door Yes.worked from Top platformBOILERS, &c.—(Letter for record S)Manufacturers of Steel SpencersTotal Heating Surface of Boilers 4891Is Forced Draft fitted NoNo. and Description of Boilers Two Single Ended.Working Pressure 180 lb.Tested by hydraulic pressure to 360Date of test 5/9/06No. of Certificate 3075Can each boiler be worked separately Yes.Area of fire grate in each boiler 52.8 sq

No. and Description of Safety Valves to

each boiler 2 SpringArea of each valve 7.06Pressure to which they are adjusted 180 lb.Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 23"Mean dia. of boilers 16' 0"Length 10' 9"Material of shell plates SThickness 1 9/32Range of tensile strength 28.5/32Are the shell plates welded or flanged NoDescrip. of riveting: cir. seams DR.long. seams TR DBSDiameter of rivet holes in long. seams 1 9/32Pitch of rivets 8 5/8Lap of plates or width of butt straps 18 1/4"

Per centages of strength of longitudinal joint

rivets 86.8%plate 83.25%Working pressure of shell by rules 181.6 lb.Size of manhole in shell 13 x 16 1/2"Size of compensating ring 1 9/32No. and Description of Furnaces in each boiler 3 MorrisonMaterial SOutside diameter 50 1/4"Length of plain part top 9"Thickness of plates bottom 7/8"Description of longitudinal joint weld.No. of strengthening rings —Working pressure of furnace by the rules 198.5Combustion chamber plates: Material SThickness: Sides 19/32Back 19/32Top 19/32Bottom 7/8"Pitch of stays to ditto: Sides 7 1/2"Back 8 1/4"Top 8 1/4"If stays are fitted with nuts or riveted heads NutsWorking pressure by rules 183.5 lb.Material of stays SDiameter at smallest part 1 3/8Area supported by each stay 8 1/4 x 8"Working pressure by rules 180 lb.End plates in steam space: SMaterial SThickness 1"Pitch of stays 16 1/4 x 16 1/8"How are stays secured DR & LWorking pressure by rules 181 lb.Material of stays SDiameter at smallest part 2 1/2"Area supported by each stay 16 1/4 x 16 1/8"Working pressure by rules 187.Material of Front plates at bottom SThickness 7/8Material of Lower back plate SThickness 1 1/16Greatest pitch of stays 15 x 8 1/8"Working pressure of plate by rules 194 lb.Diameter of tubes 3 3/4"Pitch of tubes 4 1/2"Material of tube plates SThickness: Front 15/16Back 3/4"Mean pitch of stays 9"Pitch across wide water spaces 14 1/4"Working pressures by rules 188 lb.Girders to Chamber tops: Material S

Depth and

thickness of girder at centre 8 1/2 x 13 1/4"Length as per rule 3 1/2"Distance apart 8 3/4"Number and pitch of stays in each 3. 7 1/4"Working pressure by rules 187.5 lb.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. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

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 \_\_\_\_\_ 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:— *1 propeller shaft 1/2 set Air Pump valves 1/2 set Air & Feed Dry valves 1 spare propeller & spare gear as per rule requirements*

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

Dates of Survey while building \_\_\_\_\_ During progress of work in shops— *1906. May 31. June 27. July 2. 4. 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. 4.*  
 During erection on board vessel — *8. 10. 12. 16. Nov. 15*  
 Total No. of visits *36* Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts— Cylinders *28/9/06* Slides *28/9/06* Covers *28/9/06* Pistons *28/9/06* Rods *28/9/06*  
 Connecting rods *28/9/06* Crank shaft *28/9/06* Thrust shaft *28/9/06* Tunnel shafts *23/7/06* Screw shaft *26/9/06* Propeller *13/9/06*  
 Stern tube *28/9/06* Steam pipes tested *12/10/06* Engine and boiler seatings *10/10/06* Engines holding down bolts *10/10/06*  
 Completion of pumping arrangements *16/10/06* Boilers fixed *10/10/06* Engines tried under steam *16/10/06*  
 Main boiler safety valves adjusted *16/10/06* Thickness of adjusting washers *PBPB 9/16 SB 9/16 SB PB 9/16 SB 9/16*  
 Material of Crank shaft *S* Identification Mark on Do. *4448* Material of Thrust shaft *S* Identification Mark on Do. *4448*  
 Material of Tunnel shafts *S* Identification Marks on Do. *4448* Material of Screw shafts *S Iron* Identification Marks on Do. *4448*  
 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 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 LMC. 11. 06 (entered) in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD LMC 11.06.*

The amount of Entry Fee. . . £ 3 : 0 : 0  
 Special . . . . . £ 35 : 17 : 0  
 Donkey Boiler Fee . . . . . £ : :  
 Travelling Expenses (if any) £ : :  
 Committee's Minute  
 Assigned

When applied for. *23.11.1906*  
 When received, *26.11.06*

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

TUES. NOV 27 1906

MACHINERY CERTIFICATE WRITTEN