

Rpt. 4.

# REPORT ON MACHINERY.

No. 23136

Port of *Sunderland*

Received at London Office 19

No. in Survey held at *Sunderland* Date, first Survey *28<sup>th</sup> May. 06* Last Survey *22<sup>nd</sup> January 1907*

Reg. Book. on the *Steel screw steamer WESTHAMPTON* (Number of Visits *30*)

Tons { Gross *1860.19*  
Net *1162.07*  
When built *1904*

Master *A. W. Foxworthy* Built at *Sunderland* By whom built *O. Bourne & Co.*

Engines made at *Sunderland* By whom made *Richardsons' Westgarth & Co. Ltd.* when made *1904*

Boilers made at *Sunderland* By whom made *Richardsons' Westgarth & Co. Ltd.* when made *1904*

Registered Horse Power Owners *British Maritime Trust* Port belonging to *West Hartlepool*

Nom. Horse Power as per Section 28 *190* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines *Triple Expansion (Inverted)* No. of Cylinders *Three* No. of Cranks *Three*

Dia. of Cylinders *20-33-54* Length of Stroke *36* Revs. per minute *40* Dia. of Screw shaft as per rule *11.24* Material of screw shaft *Iron*  
as fitted *11.24*

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 *—* If two liners are fitted, is the shaft lapped or protected between the liners *—* Length of stern bush *3-10*

Dia. of Tunnel shaft as per rule *9.54* Dia. of Crank shaft journals as per rule *10.02* Dia. of Crank pin *10.24* Size of Crank webs *6.8x5* Dia. of thrust shaft under collars *11* Dia. of screw *14-6* Pitch of Screw *14-6* No. of Blades *four* State whether moveable *no* Total surface *66 sq ft*

No. of Feed pumps *two* Diameter of ditto *3* Stroke *21* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *two* Diameter of ditto *3* Stroke *21* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *two* Sizes of Pumps *11x10, 5.25x3.25, 5x2.25* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *four 3" mags.* In Holds, &c. *two 2.5" mags in each hold, one 2.5"*

No. of Bilge Injections *one size 4* Connected to condenser, or to circulating pump *no* Is a separate Donkey Suction fitted in Engine room & size *yes 3.5"*

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 *none*

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 *14/12* of Stern Tube *20/12* Screw shaft and Propeller *20/12*

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 *J. Spencer & Sons Ltd.*

Total Heating Surface of Boilers *3060 sq ft* Is Forced Draft fitted *no* No. and Description of Boilers *Two single ended, light 2 1/2 inch*

Working Pressure *160 lb.* Tested by hydraulic pressure to *320 lb.* Date of test *13/10/06* No. of Certificate *2536*

Can each boiler be worked separately *yes* Area of fire grate in each boiler *42.5 sq ft* No. and Description of Safety Valves to each boiler *Two, direct opening* Area of each valve *4.07* Pressure to which they are adjusted *165 lb.* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *18* (Rule Mean dia. of boilers *12-10* Length *10-0* Material of shell plates *steel*

Thickness *1* Range of tensile strength *28.5 to 32 tons* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *lap & R.*

long. seams *lap & R.* Diameter of rivet holes in long. seams *1.32* Pitch of rivets *4* Lap of plates or width of butt straps *13*

Per centages of strength of longitudinal joint rivets *82.14* Working pressure of shell by rules *160.5 lb.* Size of manhole in shell *end 16x12*  
plate *81.69*

Size of compensating ring *flanged* No. and Description of Furnaces in each boiler *Three plain* Material *steel* Outside diameter *39*

Length of plain part top *82* bottom *88* Thickness of plates crown *2.23* bottom *3.22* Description of longitudinal joint *weld* No. of strengthening rings *one*

Working pressure of furnace by the rules *160.4 lb.* Combustion chamber plates: Material *steel* Thickness: Sides *9/16* Back *21/32* Top *9/16* Bottom *3/4*

Pitch of stays to ditto: Sides *8x8 1/2* Back *9x10* Top *8x8* If stays are fitted with nuts or riveted heads *nut* Working pressure by rules *161 lb.*

Material of stays *steel* Diameter at smallest part *1.38, 1.51, 1.16, 1.16* Area supported by each stay *62, 68, 90* Working pressure by rules *168 lb.* End plates in steam space:

Material *steel* Thickness *1 1/4* Pitch of stays *14 1/2 x 18* How are stays secured *D. N.* Working pressure by rules *160.5 lb.* Material of stays *steel*

Diameter at smallest part *2.54* Area supported by each stay *315* Working pressure by rules *160 lb.* Material of Front plates at bottom *steel*

Thickness *3/4* Material of Lower back plate *steel* Thickness *1 3/16* Greatest pitch of stays *21 x 15 1/2* Working pressure of plate by rules *180 lb.*

Diameter of tubes *3 1/4* Pitch of tubes *4 1/2 x 4 1/2* Material of tube plates *steel* Thickness: Front *3/16* Back *3/16* Mean pitch of stays *11 1/4*

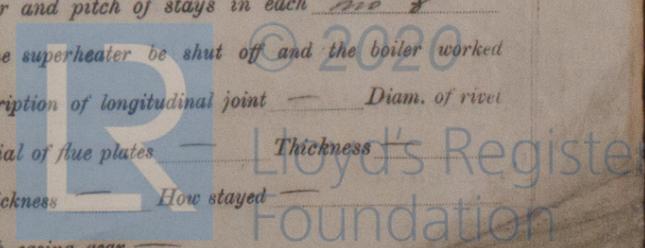
Pitch across wide water spaces *13 1/2* Working pressures by rules *159.5 lb.* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *8 x 1 1/2* Length as per rule *28 1/2* Distance apart *8* Number and pitch of stays in each *Two 8*

Working pressure by rules *168 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 *—*



If not, state whether, and when, one will be sent

**VERTICAL DONKEY BOILER—**

Manufacturers of Steel

*please see attached Report No.*

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:— *One set coupling bolts & nuts, two each top end, bottom end & main bearing bolts & nuts, one set each feed & ridge pump valve, one propeller & propeller shaft, assorted bolts & nuts.*

**RICHARDSONS, WESTGARTH & CO., LTD**

The foregoing is a correct description,

*Richard H. Russell*  
Assistant Manager

Dates of Survey while building: During progress of work in shops - 1906, May 25, Aug 2, 8, 14, 22, 23, 27, Sept: 1, 6, 7, 10, 12, 15, 18, 25, Oct: 1, 3, 8, 13, 19, 24, Nov: 13, Dec: 3, 12, 14, 17, 20, 22, 25

During erection on board vessel - - - - - 27 - Jan 22

Total No. of visits **30**

Is the approved plan of main boiler forwarded herewith *yes*  
" " " donkey " " " *no*

Dates of Examination of principal parts—Cylinders *28/53 23/8* Slides *14/9 24/9* Covers *27/8 14/9* Pistons *10/9* Rods *23/8*

Connecting rods *23/8 27/8* Crank shaft *23/8 27/8* Thrust shaft *4/9 6/9 7/9* Tunnel shafts *12/9 14/9 18/24/19* Screw shaft *8/24/10/30/10/11* Propeller *31/51 12/10*

Stern tube *24/9 14/12* Steam pipes tested *7/12 24/12* Engine and boiler seatings *7/12* Engines holding down bolts *19/12 12/12*

Completion of pumping arrangements *22/11* Boilers fixed *20/12 23/1* Engines tried under steam *25/12*

Main boiler safety valves adjusted *25/12* Thickness of adjusting washers  $\textcircled{\frac{13}{32}}$   $\textcircled{\frac{11}{32}}$   $\textcircled{\frac{1}{2}}$   $\textcircled{\frac{3}{8}}$   $\textcircled{\frac{13}{32}}$

Material of Crank shaft *steel* Identification Mark on Do.  $\begin{matrix} 44442 \\ 28-6-06 \\ TLT \end{matrix}$  Material of Thrust shaft *iron* Identification Mark on Do.  $\begin{matrix} 307D \\ AB \end{matrix}$

Material of Tunnel shafts *iron* Identification Marks on Do.  $\begin{matrix} 308D \\ AB \end{matrix}$  Material of Screw shafts *iron* Identification Marks on Do.  $\begin{matrix} 369D & 370D \\ AB & AB \end{matrix}$

Material of Steam Pipes *Copper, Reddram, 4" bore No. 15.* Test pressure *400 lb.*

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

*The machinery of this vessel has been constructed under special survey the material & workmanship sound & good. The Boilers & steam pipes have been subjected to test by hydraulic pressure in accordance with the Rules the machinery worked satisfactorily at the Mornings & the safety valves have been adjusted under steam to their working pressure.*

*This vessel is eligible in my opinion to have the Notation*  
**\* L.M.C. 1.07** *in the Register Book*

It is submitted that this vessel is eligible for THE BOARD **L.M.C. 1.07**

The amount of Entry Fee. . . £ 2 : : When applied for, *29.1.1907*

Special . . . . . £ 78 : 10 : : *30.1.07*

Donkey Boiler Fee . . . . . £ : : : When received, *14.2.1907*

Travelling Expenses (if any) £ : : : *15/2/07*

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

Committee's Minute  
Assigned

FRI. FEB 1 1907

*+L.M.C. 1.07*

MACHINERY CERTIFICATE WRITTEN.



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