

# REPORT ON MACHINERY.

No. 53893

Port of *Newcastle on Tyne*

Received at London Office **THUR, 28 NOV 1907**

No. in Survey held at *S. Shields*

Date, first Survey *14 May*

Last Survey *9 Nov 1907*

Reg. Book. on the *S.S. Harport*

(Number of Visits *2*)

Master *T. H. Holman*. Built at *S. Shields* By whom built *J. Readhead & Sons*

Tons { Gross *3086*  
Net *2503*  
When built *1907.11*

Engines made at *S. Shields* By whom made *J. Readhead & Sons*

when made *1907.*

Boilers made at *S. Shields* By whom made *J. Readhead & Sons*

when made *1907.*

Registered Horse Power Owners *J & C Harrison Ltd.*

Port belonging to *London*

Nom. Horse Power as per Section 28 *374*

Is Refrigerating Machinery fitted for cargo purposes *No*

Is Electric Light fitted *h.*

**ENGINES, &c.**—Description of Engines *Triple Compound* No. of Cylinders *3* No. of Cranks *3*

Dia. of Cylinders *26-42-70* Length of Stroke *45* Revs. per minute *60* Dia. of Screw shaft *as per rule 14.22* Material of *Iron*  
 as fitted *14.375* screw shaft

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 *4'-9 1/2"*

Dia. of Tunnel shaft *as per rule 12.75* Dia. of Crank shaft journals *as per rule 13.35* Dia. of Crank pin *13.5* Size of Crank webs *18x9* Dia. of thrust shaft under  
 as fitted *12.75* collars *14 1/2* Dia. of screw *17-6* Pitch of Screw *16-6* as fitted *13.5* No. of Blades *4* State whether moveable *h.* Total surface *83.2 sq. ft.*

No. of Feed pumps *2* Diameter of ditto *3 1/2* Stroke *24* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *4 3/8* Stroke *24* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *Two* Sizes of Pumps *13 1/2 x 9 x 13 & 6 x 6* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *Three of 3 1/2" Bore* In Holds, &c. *h. 1 - 2.3 1/2" h. 2 - 2.3 1/2"*  
*h. 3 - 2.3 1/2" h. 4 - 2.3 1/2" aft. Well. 1 - 2 1/2"*

No. of Bilge Injections *1* sizes *5 1/2* Connected to condenser, or to circulating pump *C.P.* Is a separate Donkey Suction fitted in Engine room & size *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 *—*

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 *7.10.07* of Stern Tube *7.10.07* Screw shaft and Propeller *21.10.07*

Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Top Platform*

**BOILERS, &c.**—(Letter for record *h.*) Manufacturers of Steel *Spencer, Newburn.*

Total Heating Surface of Boilers *6004* Is Forced Draft fitted *h.* No. and Description of Boilers *Two built S. End.*

Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *1.10.07* No. of Certificate *7601*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *61 sq. ft.* No. and Description of Safety Valves to  
 each boiler *2 Spring* Area of each valve *70* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *20* Mean dia. of boilers *16-11 1/2* Length *11-0* Material of shell plates *S.*

Thickness *1 13/32* Range of tensile strength *28/32 Tons* Are the shell plates welded or flanged *h.* Descrip. of riveting: *circ. seams & D.R.*  
 long. seams *D.B.S.* Diameter of rivet holes in long. seams *1 13/32* Pitch of rivets *9 13/32* Lap of plates or width of butt straps *2 1/4*

Per centages of strength of longitudinal joint rivets *87* plate *85* Working pressure of shell by rules *189 lbs* Size of manhole in shell *16" x 12"*

Size of compensating ring *7 x 1 3/8* No. and Description of Furnaces in each boiler *3. Impure Material* Outside diameter *48"*

Length of plain part top *—* bottom *—* Thickness of plates crown *19/32* bottom *13/32* Description of longitudinal joint *Weld* No. of strengthening rings *—*

Working pressure of furnace by the rules *181 lbs* Combustion chamber plates, Material *S.* Thickness: Sides *7/8* Back *7/8* Top *3/4* Bottom *7/8*

Pitch of stays to ditto: Sides *8 1/2 x 8* Back *9 x 8* Top *10 x 9 1/2* If stays are fitted with nuts or riveted heads *h.* Working pressure by rules *186 lbs*

Material of stays *I.* Diameter at smallest part *2.31* Area supported by each stay *95* Working pressure by rules *183 lbs* End plates in steam space:  
 Material *S.* Thickness *1 1/4* Pitch of stays *19 1/2* How are stays secured *D.N.W.* Working pressure by rule *194 lbs* Material of stays *S.*

Diameter at smallest part *7.24* Area supported by each stay *380* Working pressure by rules *190 lbs* Material of Front plates at bottom *S.*

Thickness *3/4* Material of Lower back plate *S.* Thickness *1 1/16* Greatest pitch of stays *12 x 8* Working pressure of plate by rules *220 lbs*

Diameter of tubes *3 1/2* Pitch of tubes *4 1/8 x 4 1/8* Material of tube plates *S.* Thickness: Front *3/4* Back *3/4* Mean pitch of stays *9 1/4 - 9 1/2*

Pitch across wide water spaces *14* Working pressures by rules *183 lbs* Girders to Chamber tops: Material *S.* Depth and  
 thickness of girder at centre *9 1/2 x 12* Length as per rule *27 7/8* Distance apart *10* Number and pitch of stays in each *20 @ 9 1/2"*

Working pressure by rules *284 lbs* Superheater or Steam chest; how connected to boiler *h.* 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? Is a Report also sent on the Hull of the Ship?

Lloyd's Register Foundation

W109-0143

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description *Particulars given in the attached Form*  
 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:— *Two top and D.M. & nuts, Two bottom end bolts, Two main bearing bolts & nuts, One set coupling bolts, Spare air, Circulating Feed & Bilge Pump Valves, One Propeller shaft, One propeller, Assorted bolts & nuts.*

The foregoing is a correct description,

*John Readhead Sons* Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1907, May 11, 28, July 12, 13, 17, 21, 24, July 1, 5, 9, 10, 15, 17, 29, Aug 1, 7, 13, 15, 19, 21, 23, 27, Sep 18, 20, 23, 26, Oct 1, 7, 14, 21, 25, 29, 30, Nov 5, 6, 11, 13, 19 }  
 Total No. of visits *28* Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *7. 8. 07* Slides *23. 8. 07* Covers *23. 8. 07* Pistons *23. 8. 07* Rods *18. 9. 07*  
 Connecting rods *18. 9. 07* Crank shaft *Dundee* Thrust shaft *7. 10. 07* Tunnel shafts *7. 10. 07* Screw shaft *7. 10. 07* Propeller *25. 9. 07*  
 Stern tube *26. 9. 07* Steam pipes tested *29. 10. 07* Engine and boiler seatings *21. 10. 07* Engines holding down bolts *30. 11. 07*  
 Completion of pumping arrangements *5. 11. 07* Boilers fixed *5. 11. 07* Engines tried under steam *6. 11. 07*  
 Main boiler safety valves adjusted *6. 11. 07* Thickness of adjusting washers *P. 7/16 P. 8/16 P. 5/16 P. 7/16 P. 5/16*  
 Material of Crank shaft *I. Steel* Identification Mark on Do. *2166* Material of Thrust shaft *I. Steel* Identification Mark on Do. *7. 10. 07*  
 Material of Tunnel shafts *I. Steel* Identification Marks on Do. *7. 10. 07* Material of Screw shafts *I. Steel* Identification Marks on Do. *7. 10. 07*  
 Material of Steam Pipes *Copper* Test pressure *400 lb.*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The above machinery and Boilers have been constructed under special survey. The materials and workmanship employed therein are satisfactory and render the vessel eligible, in my opinion, for record & L.M.C. 11. 07.*)

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. 11. 07.*

*J.S. 28. 11. 07*

*J.S. 28. 11. 07*

The amount of Entry Fee. . . £ 3 : : : When applied for, *26 NOV 1907*  
 Special . . . . . £ 38 : 14 : : :  
 Donkey Boiler Fee . . . . . £ . : : : : When received, *28/11/07*  
 Travelling Expenses (if any) £ . : : : :

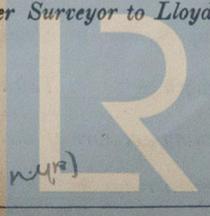
*W. Laves*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 29 NOV 1907**

Assigned *+ L.M.C. 11. 07*

MACHINERY CERTIFICATE WRITTEN

*certified copy 20/5/19 (to n/y)*



Lloyd's Register Foundation

Certificate (if required) to be sent to the Secretary of the Committee's Minute.