

# REPORT ON MACHINERY.

FRI. AUG 30 1901

Port of *Mer Hartlepool*

Received at London Office 19

No. in Survey held at *Mer Hartlepool* Date, first Survey *17<sup>th</sup> July* Last Survey *20<sup>th</sup> Aug. 1901*  
(Number of Visits *64*)

g. Book *4* on the *S.S. "Oakley"* Tons *Gross 2498 Net 2456*

Master *W. Wisnom* Built at *Mer Hartlepool* By whom built *R. Gray & Co. Ltd.* When built *1901*

Engines made at *Mer Hartlepool* By whom made *Central Marine Engine Works* when made *1901*

Boilers made at *Mer Hartlepool* By whom made *Mer Hartlepool* when made *1901*

Registered Horse Power *300* Owners *R. B. Red* Port belonging to *Belfast*

Net Horse Power as per Section 28 *294* Is Refrigerating Machinery fitted *No* Is Electric Light fitted *No*

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

Dia. of Cylinders *25 1/2, 40 1/2, 67* Length of Stroke *45* Revs. per minute *65* Dia. of Screw shaft *as per rule 14.61* Lgth. of stern bush *5'1"*

Dia. of Tunnel shaft *as per rule 12* Dia. of Crank shaft journals *as per rule 12.6* Dia. of Crank pin *12 3/4* Size of Crank webs *14 1/2* Dia. of thrust shaft under

Boilers *12 3/4* Dia. of screw *17.8* Pitch of screw *15.9* No. of blades *4* State whether moveable *No* Total surface *93 8*

No. of Feed pumps *2* Diameter of ditto *3 1/2* Stroke *28"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *4* Stroke *28"* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *2* Sizes of Pumps *4 x 6 & 12 x 10* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Four, each 3 1/2' diam<sup>2</sup>* In Holds, &c. *None, two 3 1/2' in each hold, and one 2 1/4' in after well.*

No. of bilge injections *1* sizes *6 1/2* Connected to condenser, or to circulating pump *Pumps* 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 *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*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock *Never* Is the screw shaft tunnel watertight *Yes*

Is it fitted with a watertight door *Yes* worked from *Upper Platform*

BOILERS, &c.—(Letter for record *(S)*) Total Heating Surface of Boilers *4404* Is forced draft fitted *No*

No. and Description of Boilers *Two Single ended Steel* Working Pressure *160* Tested by hydraulic pressure to *320*

Date of test *8.5.01* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *565* No. and Description of safety valves to

each boiler *Two Spring* Area of each valve *8.29* Pressure to which they are adjusted *165* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *4'2"* Mean dia. of boilers *15.6* Length *10.6* Material of shell plates *Steel*

Thickness *1 1/8* Range of tensile strength *27-30* Are they welded or flanged *Both* Descrip. of riveting: cir. seams *None* long. seams *R.R. traps*

Diameter of rivet holes in long. seams *1 1/8* Pitch of rivets *8'8"* Lap of plates or width of butt straps *18"*

Per centages of strength of longitudinal joint *85.3* Working pressure of shell by rules *163.7* Size of manhole in *Ends 16 x 12*

Size of compensating ring *Flanged* No. and Description of Furnaces in each boiler *3 Ritted* Material *Steel* Outside diameter *3'10 1/2*

Length of plain part *top 6.6 bottom 7.0* Thickness of plates *crow 17 bottom 32* Description of longitudinal joint *Pressed* No. of strengthening rings *5*

Working pressure of furnace by the rules *162* Combustion chamber plates: Material *Steel* Thickness: Sides *19 3/32* Back *19 3/32* Top *19 3/32* Bottom *29 3/32*

Pitch of stays to ditto: Sides *8'8"* Back *9 x 8* Top *9* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *165*

Material of stays *Steel* Diameter at smallest part *1.38* Area supported by each stay *73* Working pressure by rules *164* End plates in steam space:

Material *Steel* Thickness *1 1/8* Pitch of stays *23 1/2 x 20* How are stays secured *By nuts* Working pressure by rules *164* Material of stays *Steel*

Diameter at smallest part *3.16* Area supported by each stay *465* Working pressure by rules *171* Material of Front plates at bottom *Steel*

Thickness *1 1/8* Material of Lower back plate *Steel* Thickness *1 1/8* Greatest pitch of stays *15 1/2* Working pressure of plate by rules *199*

Diameter of tubes *3 1/4* Pitch of tubes *4 1/2* Material of tube plates *Steel* Thickness: Front *15 1/16* Back *21 1/32* Mean pitch of stays *9"*

Pitch across wide water spaces *14 1/4* Working pressures by rules *166* Girders to Chamber tops: Material *Steel* Depth and

thickness of girder at centre *8 1/2 x 1 1/4* Length as per rule *2'6"* Distance apart *4 1/2* Number and pitch of Stays in each *Two 9' pitch*

Working pressure by rules *174* Superheater or Steam chest; how connected to boiler *None* 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 *—*



**DONKEY BOILER—** No. 2 Description Cochran's Patent  
 Made at Cannan By whom made Cochran & Co When made 1901 Where fixed St. Richard  
 Working pressure 80 tested by hydraulic pressure to 160 No. of Certificate 5830 Fire grate area 268 Description of safety valves Spring  
 No. of safety valves 2 Area of each 4.07 Pressure to which they are adjusted 82 lb If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 4.0 Length 14.0 Material of shell plates Steel Thickness 7/16 Range of tensile strength 24-32 Descrip. of riveting long. seams Lap dentle Dia. of rivet holes 25/32 Whether punched or drilled Drilled Pitch of rivets 2 5/8  
 Lap of plating 3 3/8 Per centage of strength of joint 90.9 Rivets 90.2 Thickness of shell crown plates 13/32 Radius of do. 3.6 No. of Stays to do. none  
 Dia. of stays. — Radius of furnace Top 3.8 Bottom — Length of furnace — Thickness of furnace plates 1/2 Description of joint Lap Single Thickness of furnace crown plates 1/2 Stayed by — Working pressure of shell by rules 81 lb  
 Working pressure of furnace by rules 83 lb Diameter of uptake 2 1/2 Thickness of uptake plates 5/8 23/32 Thickness of water tubes 1/4

**SPARE GEAR.** State the articles supplied:— 2 Main bearing bolts & nuts, 2 top end bolts & nuts  
2 bottom end bolts & nuts, 1 set of shaft coupling bolts & nuts, 1 set of feed  
pump valves, 1 set of bilge pump valves, Spring for A.P. piston, 2 of  
condenser tubes, 2 of boiler tubes, propeller, nuts bolts & cirr.

The foregoing is a correct description,

FOR THE CENT

Manufacturers of Main Engines Boilers only.

During progress of work in shops— 1901. Jan. 17. Feb. 4. 6. 7. 11. 12. 14. 16. 21. 22. 26. 28. Mar. 4. 11. 13. 14. 15. 19. 20. 21. 25. 26. 27. 29. Apr. 3.  
 Dates of Survey while building 10. 15. 16. 17. 18. 22. 23. 26. 27. 28. May 2. 7. 8. 9. 11. 13. 14. 15. 16. 20. 22. 31. June 3. 4. 5. 7. 11. 15. 18. July 3. 5. 9. 10. 11. 20.  
 During erection on board vessel — 22. 25. 26. Aug. 10.  
 Total No. of visits 64

Is the approved plan of main boiler forwarded herewith yes

“ “ “ donkey “ “ “ no

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

Material of screw shaft Iron Is 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 tight in the propeller boss yes If the liner is in more than one length are the joints burned no  
 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 no

The machinery has been Specially Surveyed during construction  
 The material and workmanship good and renders the vessel  
 eligible in my opinion to have the Record + £1268.01 in the  
 Register Book of the Society.

It is submitted that  
 this vessel is eligible for  
 THE RECORD.

+ £1268.01.

7/11  
30/9/01

R.S.  
30.8.01

The amount of Entry Fee. £ 2  
 Special £ 34 17  
 Donkey Boiler Fee £ —  
 Travelling Expenses (if any) £ —

When applied for.

29.8.1901

When received.

29.8.1901

Richard Hirst

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

Committee's Minute

TUES. SEP. 3 1901

Assigned

+ £1268.01



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Lloyd's Register  
 Foundation

Certificate (& required) to be sent to W. H. H. H. H. H.