

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL.

WED. 19 JUL 1900

Received at London Office

No. in Survey held at *N. Hartlepool* Date, first Survey *12th Juny.* Last Survey *30th May 1900*
 r. Book. *31* on the *S.S. Malaga* (Number of Visits *16*)
 Tons { Gross *1614*
 Net *1024*
 When built *1876*
 Built at *N. Hartlepool* By whom built *R. Gray & Co.*
 When made *1876*
 Lines made at *Stockton* By whom made *Blair & Co. Ld.* when made *1876*
 Makers made at *N. Hartlepool* By whom made *Central Marine Engine Works, Ld.* when made *1900*
 Registered Horse Power _____ Owners *D. Hall Junr & Co* Port belonging to *London*
 n. Horse Power as per Section 28 *160* Is Electric Light fitted

ENGINES, &c.—Description of Engines

Description of Engines		No. of Cylinders	No. of Cranks
Number of Cylinders	<i>32 and 58 3/4</i>		
Length of Stroke	<i>39</i>	Revolutions per minute	Diameter of Screw shaft as per rule as fitted
Diameter of Tunnel shaft as per rule as fitted	Diameter of Crank shaft journals	Diameter of Crank pin	Size of Crank webs
Pitch of screw	No. of blades	State whether moveable	Total surface
Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps		
In Holds, &c.			
Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size		
Are the roses in Engine room always accessible	Are the sluices on Engine room bulkheads always accessible		
Are they Valves or Cocks	Are the discharge pipes above or below the deep water line		
Are the blow off cocks fitted with a spigot and brass covering plate	How are they protected		
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges			
Is the screw shaft tunnel watertight			

BOILERS, &c.— (Letter for record *(S)*) Total Heating Surface of Boilers *2476* Is forced draft fitted *No*

and Description of Boilers *Two Simple ended Steel* Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *350* No. and Description of safety valves to boiler *Two Spring* Area of each valve *9.62* Pressure to which they are adjusted *84 lbs* Are they fitted with easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or woodwork *14"* Mean diameter of boilers *13.0"*

Material of shell plates *Steel* Thickness *3/4* Description of riveting: circum. seams *None* long. seams *RT & Straps*

Pitch of rivets *3 3/8* Lap of plates or width of butt straps *9 1/2*

Working pressure of shell by rules *90 lbs* Size of manhole in shell *16 x 12*

No. and Description of Furnaces in each boiler *3 Plain* Material *Steel* Outside diameter *3.0*

Thickness of plates *15/32* Description of longitudinal joint *RT & Straps* No. of strengthening rings *4 1/2*

Working pressure of furnace by the rules *92* Combustion chamber plates: Material *Steel* Thickness: Sides *1/2* Back *1/2* Top *1/2* Bottom *15/32*

Working pressure by rules *80*

Material of stay *Steel* Diameter at smallest part *1.38* Area supported by each stay *95* Working pressure by rule *176 lbs* End plates in steam space: Material *Steel* Thickness *15/16* Pitch of stays *19.20 1/2* How are stays secured *By nuts* Working pressure by rules *106* Material of stay *Steel*

Diameter at smallest part *2.41* Area supported by each stay *389* Working pressure by rules *1056* Material of Front plates at bottom *Steel*

Material of Lower back plate *Steel* Thickness *5/8* Greatest pitch of stays *14 3/4* Working pressure of plate by rules *87*

Pitch of tubes *4 1/2* Material of tube plates *Steel* Thickness: Front *2 1/32* Back *5/8* Mean pitch of stays *9*

Working pressures by rules *81* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *7 x 1"* Length as per rule *2.5"* Distance apart *10 1/2* Number and pitch of Stays in each *Two 9"*

Working pressure by rules *86* Superheater or Steam chest; how connected to boiler *None* Can the superheater be shut off and the boiler worked *Yes*

Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____

Working pressure of end plates _____ Area of safety valves to superheater _____ Are they fitted with easing gear _____

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



DONKEY BOILER— Description *Vertical with cross tubes.*
 Made at *Stockton* By whom made *Riley Bros.* When made *23/10* Where fixed *Stoke hold.*
 Working pressure *80 lbs.* tested by hydraulic pressure to *160 lbs.* No. of Certificate *2226* Fire grate area *280* Description of safety valves *Spring direct*
 No. of safety valves *2* Area of each *4.90* Pressure to which they are adjusted *80 lbs.* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *6'-6"* Length *13'-6"* Material of shell plates *steel* Thickness *7/16"*
 Description of riveting long. seams *D. riv. lap.* Diameter of rivet holes *13/16"* Whether punched or drilled *punched* Pitch of rivets *2 1/2"*
 Lap of plating *4 1/2"* Per centage of strength of joint *54.8* Rivets *44.8* Thickness of shell crown plates *9/16"* Radius of do. *5ft* No. of Stays to do. *7*
 Dia. of stays. *1 1/2"* Diameter of furnace Top *4'-11"* Bottom *5'-6 1/2"* Length of furnace *5'-0"* Thickness of furnace plates *1/16"* Description of joint *lap single* Thickness of furnace crown plates *19/32"* Stayed by *as above* Working pressure of shell by rules *84 lbs*
 Working pressure of furnace by rules *99 lbs.* Diameter of uptake *16"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

Wm B. Borrowman
MANAGER

Dates of Survey while building
 During progress of work in shops— 1900. Jan. 12. 17. 18. Feb. 16. Mar. 16. 21. Apr. 3. 10. 11. 23. May 1. 3. 9. 17. 25. 30.
 During erection on board vessel - - -
 Total No. of visits *16*

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

ENGINES—Length of stern bush _____ Diameter of crank shaft journals *as per rule* _____ Diameter of thrust shaft under collars *as fitted* _____
 BOILERS—Range of tensile strength *26-30* Are they welded or flanged *both.* DONKEY BOILERS—No. *one* Range of tensile strength *24-32*
 Is the approved plan of main boiler forwarded herewith *Yes* Is the approved plan of donkey boiler forwarded herewith *No.*

The main boilers have been specially surveyed during construction. The material and workmanship good and when finished were tested to 160 lbs hydraulic pressure and found satisfactory.

Screw shaft examined. Stern bush reworked.

Certificate (if required) to be sent to _____

The amount of Entry Fee. . . £ : : When applied for.
 Special £ *8* : : *17-7-1900*
 Donkey Boiler Fee £ : : When received.
 Travelling Expenses (if any) £ : : *11-8-1900*

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

Committee's Minute **FRI. 20 JUL 1900**
 Assigned

