

# REPORT ON MACHINERY.

(Received at London Office 13th NOV. 82.

No. in Survey held at *Sheketon - Hartlepool* Date, first Survey *11 May* Last Survey *24 October 1882*  
 on the *S. S. Carib* Tons *143 1/2*  
 Master *Henry* Built at *Stockton* When built *1882*  
 Engines made at *Hartlepool* By whom made *Richardson & Co* when made *1883*  
 Boilers made at *Do* By whom made *Do* when made *1882*  
 Registered Horse Power *99* Owners *Anderson Anderson & Co* Port belonging to *Stockton*  
 Manufacturers *HP 120*

## ENGINES, &c.—

Description of Engines *Compound - Horizontal - Surface Condensing*  
 Diameter of Cylinders *29.55* Length of Stroke *33* No. of Rev. per min *116.65* Point of Cut off, High Pressure *1/2 stroke* Low Pressure *1/2 stroke*  
 Diameter of Screw shaft *9 1/4* Diameter of Tunnel shaft *8 3/4* Diameter of Crank shaft journals *9 1/4* Diameter of Crank pin *9 3/4* size of Crank webs *6 1/2 x 10 3/4*  
 Diameter of screw *13.3* Pitch of screw *16.0* No. of blades *Four* state whether moveable *No* total surface *455 sq feet*  
 No. of Feed pumps *Two* diameter of ditto *3 1/4* Stroke *23 1/2* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pump *Two* diameter of ditto *3 1/4* Stroke *23 1/2* Can one be overhauled while the other is at work *Yes*  
 Where do they pump from *Engine room & after well*  
 No. of Donkey Engines *Two* Size of Pumps *1 1/2 dia x 9 1/2 stroke* Where do they pump from *Large donkey from tanks & engine room. Small donkey from sea, hot water, engine room - after well.*  
 Are all the bilge suction pipes fitted with roses *Yes* Are the roses always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*  
 No. of bilge injections *Two* and sizes *3 1/2* Are they connected to condenser, or circulating pump *circulating pump*  
 How are the pumps worked *By levers worked from overhead on low pressure piston rod*  
 Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Stop valves & cocks*  
 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*  
 How are the pipes carried through the bunkers *None* How are they protected *Yes*  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *Yes*  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *Yes*  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *Now*

## BOILERS, &c.—

No. of Boilers *One* Description *Cylindrical Multitubular fired at both ends*  
 Working Pressure *85* Tested by hydraulic pressure to *110 lbs* Date of test *30th September 1882. Certificate 10811*  
 Description of superheating apparatus or steam chest *Vertical dome. Central tube*  
 Can each boiler be worked separately *Yes* Can the superheater be shut off and the boiler worked separately *No Superheater*  
 No. of square feet of fire grate surface in each boiler *63.3* Description of safety valves *Spring Made by J. Richardson & Co*  
 No. to each boiler *Two* area of each valve *15.9 sq in* Are they fitted with easing gear *Yes*  
 No. of safety valves to superheater *Two* area of each valve *15.9 sq in* are they fitted with easing gear *Yes*  
 Smallest distance between boilers and bunkers or woodwork *about 20" between boiler shell & bunker casing*  
 Diameter of boilers *11.6* Length of boilers *15.2* description of riveting of shell long. seams *double straps, double riveted* circum. seams *about 6*  
 Thickness of shell plates *23/32* diameter of rivet holes *1/8* whether punched or drilled *Drilled in shell pitch of rivets 5/8*  
 Lap of plating *Straps 9/8 broad* per centage of strength of longitudinal joint *1/8.04* working pressure of shell by rules *88.3*  
 Size of manholes in shell *10 3/4 x 13* size of compensating rings *Rectangular plate 30 x 2 1/4 x 23/32*  
 No. of Furnaces in each boiler *Four* outside diameter *39"* length, top *5.3* bottom *14.8*  
 Thickness of plates *5/16 - 1/2* description of joint *Lap double riveted* if rings are fitted *Bottom plate - greatest length between rings 5.3*  
 Working pressure of furnace by the rules *96 lbs* *stiffened with T bars*  
 Combustion chamber plating, thickness, sides *17/32* back *1/2* top *17/32*  
 Pitch of stays to ditto *8 1/8 x 8* back *1/2* top *8 1/8 x 8 1/4*  
 If stays are fitted with nuts or riveted heads *Nuts top, others riveted* working pressure of plating by rules *Sides 85 lbs Tops 88 lbs*  
 Diameter of stays at smallest part *Lap 13/8 - 1 1/8* working pressure of ditto by rules *Sides 91 lbs Tops 125 lbs*  
 End plates in steam space, thickness *13/16* pitch of stays to ditto *16 1/2 x 16 1/2* how stays are secured *Nuts & washers*  
 Working pressure by rules *86.9* diameter of stays at smallest part *2 1/4* working pressure by rules *87.6*  
 Front plates at bottom, thickness *3/4* Back plates, thickness *1/2* greatest pitch of stays *1/2* working pressure by rules *87.6*

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Diameter of tubes 3" pitch of tubes 4 1/4 x 4 1/4 thickness of tube plates, front 1/16 back 1/16  
How stayed stay tubes pitch of stays 8 1/2 x 12 3/4 width of water spaces 1 1/4  
Diameter of Superheater or Steam chest 3'-0" length 5'-6"  
Thickness of plates 1/16 description of longitudinal joint Lap double riveted diameter of rivet holes 1 1/16 pitch of rivets 2 1/16  
Working pressure of shell by rules 126 lbs Diameter of flue 1 thickness of plates 1/16  
If stiffened with rings distance between rings Working pressure by rules  
End plates of superheater, or steam chest; thickness 1/2 How stayed Pinch Ends  
Superheater or steam chest; how connected to boiler By angle iron 4 x 4 x 1/8 Single riveted to boiler shell - donee rivets 1 inch  
**DONKEY BOILER-** Description Cochran's Patent  
Made at Lutethead By whom made Clark Chapman & Curney when made 14.9.82  
Where fixed Stokhole working pressure 15 lbs Tested by hydraulic pressure to 150 No. of Certificate 9/16  
Fire grate area 21.54 sq ft Description of safety valves Direct - lever No. of safety valves One of each kind Size of each 5.94  
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'-0" description of riveting Lap double riveted  
thickness of shell plates 1/16 diameter of rivet holes 1 1/16 whether punched or drilled Punched  
pitch of rivets 3 3/8 lap of plating 10/14 per centage of strength of joint 1/2  
thickness of crown plates 1/8 stayed by The gusset stays  
Radius of furnace, top 2-3 bottom 5-9 length of furnace The donkey boiler was  
Diameter of furnace, top 5-8 description of joint Lap Single riveted built under the super  
thickness of plates 1/8 stayed by Pinch riveted riveted in the pressure  
thickness of furnace crown plates 1/16 Working pressure of shell by rules 85 lbs working pressure of furnace by rules 15 lbs In. Brock at one of  
Working pressure of shell by rules 85 lbs diameter of uptake 22 x 17 thickness of plates 3/8 thickness of water tubes Sixty five pounds per sq in

The foregoing is a correct description,

J. Richardson & Sons Manufacturers of Engines - Main Boilers only

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

Material & workmanship good  
The Machinery & Boilers are in good order & Safe  
working condition & in my opinion eligible for the  
notification & L.M.C. 10.82 in the Register Book

The amount of Entry Fee £ 2 : : : received by me,

Special .. £ 14 : 17 : :

Certificate (if required) .. £ : : : 9.11.1882

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

Friday, 17th November, 1882.

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

Submitted that the machinery  
is eligible to be  
L.M.C. 10.82  
MP 13.11.82



Lloyd's Register  
Foundation