

# REPORT ON MACHINERY.

4131

No. 4131

Port of *Aberdeen*

Received at London Office **WED 15 OCT 1890**

No. in Survey held at *Aberdeen*

Date, first Survey *Nov. 20<sup>th</sup> 1889* Last Survey *Oct. 13<sup>th</sup> 1890*

Reg. Book.

(Number of Visits *40*) *1249 net*  
*1944 gross*

on the *S.S. "Inyoni"*

Tons *1249 net*  
*1944 gross*

Master *Stuart* Built at *Aberdeen* By whom built *Messrs Hall, Russell & Co* When built *1890*

Engines made at *Aberdeen* By whom made *Messrs Hall, Russell & Co* when made *1890*

Boilers made at *Aberdeen* By whom made *Messrs Hall, Russell & Co* when made *1890*

Registered Horse Power \_\_\_\_\_ Owners *Messrs J. T. Pennie & Son* Port belonging to *Aberdeen*

## ENGINES, &c.—

Number of Engines *Triple Expansive direct acting, Inverted, Surface, condensing*

Cylinders *22, 36, 59* Length of Stroke *42* No. of Rev. per minute \_\_\_\_\_ Point of Cut off, High Pressure *29%* Low Pressure *23*

Screw shaft *11 1/2* Diam. of Tunnel shaft *11 1/4* Diam. of Crank shaft journals *11 1/2* Diam. of Crank pin *11 1/2* size of Crank webs *8 1/4 x 15*

Pitch of screw *14* No. of blades *4* state whether moveable *No* total surface *64.8 sq ft*

Water pumps *two* diameter of ditto *3 1/4* Stroke *23* Can one be overhauled while the other is at work *Yes*

Oil pumps *two* diameter of ditto *4* Stroke *23* Can one be overhauled while the other is at work *Yes*

Where they pump from *the bilges of each compartment*

Monkey Engines *two* Size of Pumps *3 1/2 cyl 8" stroke 10* Where do they pump from *Sea, ballast tanks, wells, and bilges of each compartment*

Are the bilge suction pipes fitted with roses *Yes* Are the roses always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*

Are the pumps worked *By levers on intermediate engine*

Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Yes 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*

How are the pipes carried through the bunkers *Forward suction* How are they protected *wood casing*

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*

Were stern tube, propeller, screw shaft, and all connections examined in dry dock *previous to launching*

Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *top platform*

## BOILERS, &c.—

Number of Boilers *two* Description *Cylindrical Multitubular* Whether Steel or Iron *Steel S*

Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *September 13<sup>th</sup> 1890*

Position of superheating apparatus or steam chest *horizontal, dome*

Can the boiler be worked separately *Yes* Can the superheater be shut off and the boiler worked separately *Yes*

Area of square feet of fire grate surface in each boiler *52 sq ft* Description of safety valves *direct spring* No. to each boiler *two*

Area of each valve *11 sq in* Are they fitted with easing gear *Yes* No. of safety valves to superheater \_\_\_\_\_ area of each valve \_\_\_\_\_

Are they fitted with easing gear \_\_\_\_\_ Smallest distance between boilers and bunkers or woodwork \_\_\_\_\_ Diameter of boilers *14" dia*

Length of boilers *10" dia* description of riveting of shell long. seams *rib riv butt* circum. seams *dbl riv lap* Thickness of shell plates *3/32*

Diameter of rivet holes *1 5/16* whether punched or drilled *drilled* pitch of rivets *8 1/2 x 1 1/2* Lap of plating *straps 1 1/2 x 1*

Percentage of strength of longitudinal joint *84.5%* working pressure of shell by rules *163 lbs* size of manholes in shell *12" x 16"*

Size of compensating rings *two 1 1/2" thick double riveted* No. of Furnaces in each boiler *three*

Outside diameter *42 1/2* length, top *7 ft* bottom *9 1/2* thickness of plates *5/8* description of joint *ribbed* if rings are fitted *Yes*

Greatest length between rings *4 ft* working pressure of furnace by the rules *188 lbs* combustion chamber plating, thickness, sides *3/8* back *3/8* top *3/8*

Pitch of stays to ditto, sides *3/4 x 3/4* back *3/4 x 3/4* top *radial* if stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *141 lbs*

Diameter of stays at smallest part *1 1/2* screw working pressure of ditto by rules *143 lbs* end plates in steam space, thickness *1"*

Pitch of stays to ditto *1 1/2 x 1 1/2* how stays are secured *dbl nuts* working pressure by rules *164 lbs* diameter of stays at smallest part *2 1/2* screw *quad 42* working pressure by rules *143 lbs* Front plates at bottom, thickness *1 1/2* Back plates, thickness *3/8 x 3/8*

Greatest pitch of stays *3/4 x 12 1/2* working pressure by rules *160 lbs* Diameter of tubes *3 1/2* pitch of tubes *4 3/4* thickness of tube plates, front *1 1/2* back *2 1/2* how stayed *stay tubes* pitch of stays *4 1/2 x 1 1/2* width of water spaces *1 1/2*

Diameter of Superheater or Steam chest *40* length *6 1/2* thickness of plates *1/2* description of longitudinal joint *dbl riv lap* diam. of rivet holes *1/2*

Pitch of rivets *2 1/8* working pressure of shell by rules *190 lbs* diameter of flue \_\_\_\_\_ thickness of plates \_\_\_\_\_ If stiffened with rings \_\_\_\_\_

Distance between rings \_\_\_\_\_ working pressure by rules \_\_\_\_\_ end plates of superheater, or steam chest; thickness *1/2* how stayed *stay tubes* Superheater or steam chest; how connected to boiler *dbl riv, neck 3" thick*

Form No. 6-2000-9/6/89-T. & S. Copyable Ink.

Description of furnaces



ABNIO-0079

H131. Abn

**DONKEY BOILER**— Description *Vertical 4 cross tubes*  
 Made at *Merdeen* by whom made *Messrs Hall Russells* when made *1890* where fixed *Stockholm*  
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *91* fire grate area *21.99 sq ft* description of safety  
 valves *direct spring* No. of safety valves *two* area of each *4.99* "if fitted with easing gear *yes* "if steam from main boilers *no*  
 enter the donkey boiler *no* diameter of donkey boiler *6ft. 6"* length *13ft* description of riveting *D. riv. lap*  
 thickness of shell plates *1/2"* diameter of rivet holes *13/16"* whether punched or drilled *drilled* pitch of rivets *2 3/4"* lap of plating *4 1/2"*  
 percentage of strength of joint *6 1/2%* thickness of crown plates *13/16"* stayed by *eight 2 1/2" stays*  
 Diameter of furnace, top *5ft* bottom *6ft* length of furnace *6 8* thickness of plates *21/32* description of joint *S. riv. lap*  
 Thickness of furnace crown plates *5/8"* stayed by *as above* sides *1 1/2" screw stays 8 1/4" pitch* working pressure of shell by rules  
 Working pressure of furnace by rules *80 lb* diameter of uptake *18"* thickness of plates *1/2"* thickness of water tubes

**SPARE GEAR.** State the articles supplied:— *One crank shaft, one tail shaft, one propeller, one*  
*of coupling bolts 2 top and 2 bottom, ends bolts 2 main bearing bolts 12 pin*  
*bolts, one pair of crank pin brasses, one set of air pump and circulating,*  
*valves one set of feed and bilge pump valves one set of piston springs, &c.*

The foregoing is a correct description.

*Hall Russell & Co* Manufacturers

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

*The Engines and Boilers of this vessel have been*  
*constructed under Special Survey; they are of good material and*  
*workmanship, and in accordance with the Rules*

*They are now in good working order and eligible in my*  
*opinion to be classed ~~LN.C.~~ **L.M.C. 1090** in the Register Book*

*It is submitted that this vessel is*  
*eligible to have + L.M.C. 1090 recorded*  
*W.A.*  
*15-10-90*

The amount of Entry Fee .. £ 2 : - : - received by me.  
 Special .. £ 31 : 11 : -  
 Donkey Boiler Fee .. £ 2 : 2 : -  
 Certificate (if required) .. £ gratis : 15/10/1890  
 (To be sent as per margin.)  
 (Travelling Expenses, if any, £ )

*W.A.*

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

Committee's Minute

TUES 21 OCT 1890

+ L.M.C. 1090



Lloyd's Register Foundation