

REPORT ON MACHINERY.

9057

No. 4289

No. in Survey held at Reg. Book.

Pauley
J J Amherst

Date, first Survey *October 13th* Last Survey *January 5th 1886*

Received at London Office THURS 4 FEB 1886

(Number of Vials *25*) Tons *107.88*

on the *J J Amherst* Built at *Port Glasgow* By whom built *Messrs Blackwood & Gordon* When built *1885*

Engines made at *Pauley* By whom made *Messrs Bow, Mc Lachlan & Co* when made *1885*

Boilers made at " By whom made " when made *1885*

Registered Horse Power *52* Owners *Mr John Mc Lachlan* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Compound Inverted direct acting*

Diameter of Cylinders *18" & 35"* Length of Stroke *20"* No. of Rev. per minute *120* Point of Cut off, High Pressure *12"* Low Pressure *12"*

Diameter of Screw shaft *6"* Diam. of Tunnel shaft *6"* Diam. of Crank shaft journals *6 1/4"* Diam. of Crank pin *6 1/4"* size of Crank webs *4 1/2" x 4 1/2"*

Diameter of screw *8 ft* Pitch of screw *10 ft* No. of blades *4* state whether moveable *No* total surface *19 sq ft*

No. of Feed pumps *One* diameter of ditto *3 1/2"* Stroke *10"* Can one be overhauled while the other is at work

No. of Bilge pumps *One* diameter of ditto *3 1/2"* Stroke *10"* Can one be overhauled while the other is at work

Where do they pump from *Each compartment*

No. of Donkey Engines *One* Size of Pumps *3 1/2" dia cyl. 6 stroke* Where do they pump from *Sea, ballast tanks*

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 *One* and sizes *4" dia* Are they connected to condenser, or to circulating pump *a branch off main injection*

How are the pumps worked *By levers*

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 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 *previous to launching & aground at Pauley*

Is the screw shaft tunnel watertight *No tunnel and fitted with a sluice door* worked from *Pauley*

BOILERS, &c.—

Number of Boilers *One* Description *Cyl. Mult. Single end* Whether Steel or Iron *Steel*

Working Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *December 23rd 1885*

Description of superheating apparatus or steam chest *None*

Can each boiler be worked separately Can the superheater be shut off and the boiler worked separately

Area of square feet of fire grate surface in each boiler *37 sq ft* Description of safety valves *direct spring* No. to each boiler *two*

Area of each valve *9.62 sq"* Are they fitted with easing gear *Yes* No. of safety valves to superheater *1* area of each valve

Are they fitted with easing gear Smallest distance between boilers and bunkers or woodwork *13"* Diameter of boilers *11" 6"*

Length of boilers *9' 6"* description of riveting of shell long. seams *treb riv lap* circum. seams *dbl riv lap* Thickness of shell plates *1 1/16"*

Diameter of rivet holes *1 1/16"* whether punched or drilled *drilled* pitch of rivets *5" 3"* Lap of plating *8 1/2"*

Percentage of strength of longitudinal joint *79%* working pressure of shell by rules *90 lbs* size of manholes in shell *16" x 12"*

Number of compensating rings *5 1/2" x 3 1/4"* No. of Furnaces in each boiler *two*

Side diameter *41"* length, top *6 ft* bottom *8' 6"* thickness of plates *1/2"* description of joint *Sq Riv butt* if rings are fitted *3x3x1/2"*

Least length between rings *6 ft* working pressure of furnace by the rules *91 lbs* combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*

Number of stays to ditto, sides *8 1/2" x 9"* back *8 1/2" x 9"* top *4" x 8"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *95 lbs*

Diameter of stays at smallest part *1 3/8" screw* working pressure of ditto by rules *98 lbs* end plates in steam space, thickness *1 1/16"*

Number of stays to ditto *14" x 14"* how stays are secured *dbl nuts & rings* working pressure by rules *98 lbs* diameter of stays at smallest part *2" screw* working pressure by rules *106 lbs*

Front plates at bottom, thickness *3/4"* Back plates, thickness *5/8" & dbl steel*

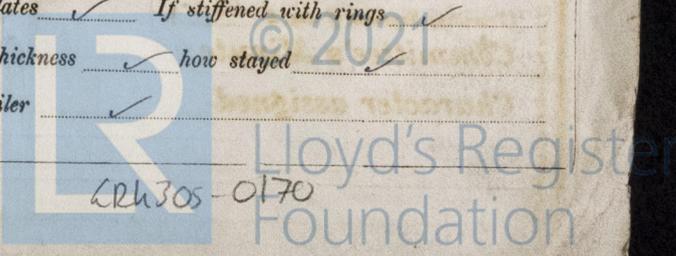
Least pitch of stays *13"* working pressure by rules *90 lbs* Diameter of tubes *3 1/4"* pitch of tubes *4 1/4"* thickness of tube plates, front *1 1/16"* back *1 1/16"* how stayed *stay tubes* pitch of stays *13"* width of water spaces *5"*

Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes

Number of rivets working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings

Least distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed

Superheater or steam chest; how connected to boiler



LR305-0170

DONKEY BOILER— Description *No donkey boiler*

Made at _____ by whom made _____ when made _____ where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ fire grate area _____ description of say _____
 valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers c
 enter the donkey boiler _____ diameter of donkey boiler _____ length _____ description of riveting _____

Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____
 per centage of strength of joint _____ thickness of crown plates _____ stayed by _____

Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of plates _____ description of joint _____

Thickness of furnace crown plates _____ stayed by _____ working pressure of shell by rules _____

Working pressure of furnace by rules _____ diameter of uptake _____ thickness of plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *2 Con rod top end bolts 2 Con rod bottom end bolts 2
 Main bearing bolts 1 set of coupling bolts 1 set of feed and bilge pump valves 1 set of
 piston springs 1 propeller 1 air pump rod 1 circulating pump rod 1 H.P. valve spindle
 1 pair of Con top & bottom end brasses 2 doz boiler tubes 3 doz condenser tubes 1 set of Safety Valve
 springs, Assorted bolts, nuts & iron.*

The foregoing is a correct description,
Bow & Lachlan Manufacturer.

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 are now in good order and safe working condition and eligible in my opinion to be noted in the Register Book L M & 1-85 86

The forgings for these Engines were examined while being rough turned and afterwards when finished at the works of Messrs Bow & Lachlan and found to be satisfactory

It is submitted that this vessel is eligible to have L M & 1-86 recorded M 4/4/86

The amount of Entry Fee .. £ 1 : - : - received by me,
 Special .. £ 8 : - : -
 Donkey Boiler Fee .. £ - : - : -
 Certificate (if required) .. £ - : - : - 24/1/86
 To be sent as per margin.
 (Travelling Expenses, if any, £ - 10/-)

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

Committee's Minute **FRIDAY 5 FEB 1886**

