

# REPORT ON MACHINERY.

No. 1289

No. in Survey held at  
Reg. Book.

*Paisley*

Date, first Survey

*October 13<sup>th</sup>*

Received at London Office

THURS 4 FEB 1886

Last Survey

*January 5<sup>th</sup> 1886*

(Number of Vessels 25)

*256.78*

Tons *107.88*

on the

*S.S. "Amherst"*

Master *J. Thom*

Built at *Port Glasgow*

By whom built

*Messrs. Blackwood & Gordon*

When built

*1885*

Engines made at

*Paisley*

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 7 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

*Yes*

No. of Bilge pumps

*One*

diameter of ditto

*3 1/2"*

Stroke

*10"*

Can one be overhauled while the other is at work

*Yes*

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*

*hotwell and bilges of each compartment*

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

*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

*previous to launching & aground at Paisley*

Is the screw shaft tunnel watertight

*No tunnel*

and fitted with a sluice door

*worked from*

## 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 23<sup>rd</sup> 1885*

Description of superheating apparatus or steam chest

*None*

Can each boiler be worked separately

*Yes*

Can the superheater be shut off and the boiler worked separately

*Yes*

No. 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

*Yes*

Are they fitted with easing gear

*Yes*

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

*1/16"*

Diameter of rivet holes

*1 1/16"*

whether punched or drilled

*drilled*

pitch of rivets

*5" x 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"*

No. of compensating rings

*5 1/2" x 3/4"*

No. of Furnaces in each boiler

*two*

Inside diameter

*41"*

length, top

*6 ft*

bottom

*8" 6"*

thickness of plates

*1/2"*

Description of joint

*Sgt Riv butt*

if rings are fitted

*3x3x1/2"*

Greatest 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"*

No. 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*

Diameter of stays at smallest part

*1 3/8" screw*

working pressure of ditto by rules

*98 lbs*

end plates in steam space, thickness

*1/16"*

No. of stays to ditto

*14" x 14"*

how stays are secured

*dbl riv lap*

working pressure by rules

*106 lbs*

Front plates at bottom, thickness

*3/4"*

Back plates, thickness

*3/8"*

dbl riv lap

thickness of tube

*1/16"*

Greatest 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

*1/16"*

how stayed

*stay tubes*

Diameter of Superheater or Steam chest

*14"*

length

*13"*

thickness of plates

*1/16"*

Description of longitudinal joint

*Yes*

diam. of rivet holes

*Yes*

If stiffened with rings

*Yes*

how stayed

*Yes*

Distance between rings

*Yes*

working pressure by rules

*Yes*

end plates of superheater, or steam chest; thickness

*Yes*

how stayed

*Yes*

Superheater or steam chest; how connected to boiler

*Yes*</



## 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 & \_\_\_\_\_  
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 braces 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, &amp;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 suitable to have L M & 1-86*  
*accorded 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/-)

Committee's Minute

FRIDAY 5 FEB 1886

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



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