

# REPORT ON MACHINERY.

No. 3708

No. in Survey held at *App & Worthington*  
Reg. Book. *S. J. Derwent*  
on the

Date, first Survey *11 June 1883* Last Survey *2nd July 1883*  
(Number of Visits *20*)

Master *Jas. Larkin* Built at *Worthington* By whom built *R. Williams & Son* Tons *111.15*  
Engines made at *App* By whom made *J. S. Young* When built *1883*  
Boilers made at *App* By whom made *"* when made *1883*  
Registered Horse Power *50* Owners *Derwent Steam Ship Co. (Ld)* Port belonging to *Worthington*  
*John Casson & Co. Agents*

## ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting*  
Diameter of Cylinders *18" 3/4* Length of Stroke *24"* No. of Rev. per minute *85 to 90* Point of Cut off, High Pressure *15"* Low Pressure *15"*  
Diameter of Screw shaft *6 3/8"* Diam. of *Intermediate* Tunnel shaft *6 1/4"* Diam. of Crank shaft journals *6 3/8"* Diam. of Crank pins *6 3/8"* size of Crank webs *8" x 4 1/4"*  
Diameter of screw *8" 6"* Pitch of screw *13" 0"* No. of blades *Three* state whether moveable *no* total surface *22 sq feet*  
No. of Feed pumps *one* diameter of ditto *2"* Stroke *24"* Can one be overhauled while the other is at work *—*  
No. of Bilge pumps *one* diameter of ditto *2"* Stroke *24"* Can one be overhauled while the other is at work *—*  
Where do they pump from *Engine Room & barge hold*  
No. of Donkey Engines *one* Size of Pumps *4" x 6" stroke* Where do they pump from *Sea Bilge Ballast Tank*  
*& Hot 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 *one* and sizes *1"* Are they connected to condenser, or to circulating pump *Circulating pump*  
How are the pumps worked *By hand*  
Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Both valves and 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*  
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 *Stern Tube and Sea Connection exam'd by Laming & Co.*  
Is the screw shaft tunnel watertight *no tunnel* and fitted with a sluice door *—* worked from *—*

## BOILERS, &c.—

Number of Boilers *one* Description *Round Horizontal Multitubular* Whether Steel or Iron *Iron*  
Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs per sq in* Date of test *14th January 1884*  
Description of superheating apparatus or steam chest *Horizontal Recirculating*  
Can each boiler be worked separately *—* Can the superheater be shut off and the boiler worked separately *no superheater*  
No. of square feet of fire grate surface in each boiler *32* Description of safety valves *Direct spring* No. to each boiler *Two*  
Area of each valve *2.6 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 *8"* Diameter of boilers *10" 9"*  
Length of boiler *9' 0"* description of riveting of shell long. seams *Double butt strap* circum. seams *Double* Thickness of shell plates *3/16"*  
Diameter of rivet holes *15/16"* whether punched or drilled *punched* pitch of rivets *3 3/8"* Lap of plating *4 1/2" straps*  
Percentage of strength of longitudinal joint *74* working pressure of shell by rules *88 lbs* size of manholes in shell *16" x 12"*  
Size of compensating rings *3 3/4" x 3 1/4"* No. of Furnaces in each boiler *Two*  
Outside diameter *37"* length, top *6' 2"* bottom *8' 3"* thickness of plates *1/2"* description of joint *Welded* if rings are fitted *—*  
Greatest length between rings *—* working pressure of furnace by the rules *98 lbs* combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*  
Pitch of stays to ditto, sides *9" x 8" x 8" x 8"* back *9" x 8"* top *9" x 8"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *52 1/2 lbs*  
Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *99 lbs* end plates in steam space, thickness *5/8"*  
Pitch of stays to ditto *12" x 12"* how stays are secured *Double nuts* working pressure by rules *97 lbs* diameter of stays at smallest part *1 3/4"*  
Working pressure by rules *100 lbs* Front plates at bottom, thickness *5/8"* Back plates, thickness *5/8"*  
Greatest pitch of stays *10"* working pressure by rules *120 lbs* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4" x 4 1/4"* thickness of tube plates, front *5/8"* back *5/8"* how stayed *Stay tubes* pitch of stays *14 1/2" x 14 1/2" x 9 1/2"* width of water spaces *5 1/2" x 4 1/2"*  
Diameter of Superheater or Steam chest *22"* length *4' 6"* thickness of plates *1/2"* description of longitudinal joint *Lap double* diam. of rivet holes *15/16"*  
Pitch of rivets *3"* working pressure of shell by rules *187 lbs* diameter of flue *no 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 *no stays*  
Superheater or steam chest; how connected to boiler *By wash piece 3/4" thick*

WHN1037-0062

**DONKEY BOILER**— Description *Round Upright*  
 Made at *Don* by whom made *J. & S. Young* when made *1883* where fixed *In the hole*  
 Working pressure *50 lbs* tested by hydraulic pressure to *100 lbs* No. of Certificate *174* fire grate area *12 sq feet* description of safety  
 valves *Direct spring* No. of safety valves *one* area of each *7/8* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *4' 6"* length *8' 0"* description of riveting *Double & single*  
 Thickness of shell plates *3/8* diameter of rivet holes *3/16* whether punched or drilled *punched* pitch of rivets *2 1/2* lap of plating *4" & 2"*  
 per centage of strength of joint *71* thickness of crown plates *7/16* stayed by *Four 1 1/2" stays*  
 Diameter of furnace, top *18"* bottom *49"* length of furnace *4' 6"* thickness of plates *3/8* description of joint *Lap single*  
 Thickness of furnace crown plates *7/16* stayed by *as above* working pressure of shell by rules *76 lbs*  
 Working pressure of furnace by rules *57 1/2* diameter of uptake *12"* thickness of plates *3/8* thickness of water tubes *3/8*

**SPARE GEAR.** State the articles supplied:— *2 top & 2 bottom end bolts & nuts for connecting rods*  
*2 main bearing bolts 1 set of coupling bolts 1 set of feed pump valves 1 set*  
*of bilge pump valves a spare propeller a quantity of nuts bolts & iron assorted*

The foregoing is a correct description,

*J. & S. Young*

Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The Engine & Boiler have been*)

*Specialy surveyed during construction workmanship of good quality*  
*Crank & plain shafts examined while being rough turned and found*  
*apparently sound & free from defects. And the Machinery & Boilers are*  
*now in good order and safe working condition and are in my opinion*  
*eligible to be noted in the Register Book. L.M.C. 2.84*

*Submitted that this*  
*is eligible to have a*  
*M.C. 2.84*  
*9/10 5/84*

The amount of Entry Fee .. £ *1* : : : , received by me,  
 Special .. £ *8* : : : , at  
 Donkey Boiler Fee .. £ : : : , *Greenock*  
 Certificate (if required) .. £ *Gratis* *9th Feb 1884*  
 To be sent as per margin.

(Travelling Expenses, if any, £ *4.10.0* for Greenock)  
 (£ *1.10.0* for Barron)

Committee's Minute

TUESDAY 11 MARCH 1884

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

*Greenock District*

Lloyd's Register  
Foundation