

# REPORT ON MACHINERY.

3708

No. 3708

No. in Survey held at Ayr & Workington  
Reg. Book. S.S. Derwent  
on the

Received at London Office 18  
Date, first Survey 11th June 1883 Last Survey 2nd July 1883  
(Number of Visits 20)

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

## ENGINES, &c.—

Description of Engines Compound Inverted Direct Acting  
Diameter of Cylinders 18" & 34" 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 <sup>Intermediate</sup> Tunnel shaft 6 1/2" Diam. of Crank shaft journals 6 3/8" Diam. of Crank pins 6 3/8" size of Crank webs 8" x 4 1/2"  
Diameter of screw 8" & 6" Pitch of screw 13" & 6" No. of blades Three state whether moveable no total surface 22.5 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 Landring Dr.  
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 Reciprocating  
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 1 1/2"  
Diameter of rivet holes 1 1/2" whether punched or drilled punched pitch of rivets 3 3/8" Lap of plating 4" 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 27" 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" & 8" x 8" back 9" x 8" top 9 1/2" x 8" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 82 & 94 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 1/2" thickness of tube plates, front 5/8" back 5/8" how stayed Stay tubes pitch of stays 14 1/2" x 14 1/2" & 9 1/2" width of water spaces 5 1/2" & 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 1 1/2"  
Pitch of rivets 3" working pressure of shell by rules 157 lbs diameter of flue as above 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 As above  
Superheater or steam chest; how connected to boiler By mesh pipes 3/4" thick

WH 1037-1062

Lloyd's Register Foundation

**DONKEY BOILER**— Description *Round Upright*  
 Made at *Over* by whom made *J. & S. Young* when made *1883* where fixed *In Mablethorpe*  
 Working pressure *5 1/2 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 sq* 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 *13/16* whether punched or drilled *punched* pitch of rivets *2 1/2 & 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 *7 1/2 lbs*  
 Working pressure of furnace by rules *5 1/2 lbs* 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. I. M. C. 2.84*

*Submitted that this amount*  
*is eligible to*  
*M.C. 2.84*  
*9/12*  
*10/5/84*

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

(Travelling Expenses, if any, £ *4.7.4* for Greenock)  
 Do. £ *1.10.0* for Barron)  
 Committee's Minute TUESDAY 11 MARCH 1884  
*[Signature]*

*Andrew J. Green*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

