

# REPORT ON MACHINERY.

No. 6474

No. in Survey held at *Stockton & Whitby*  
Reg. Book.

Date, first Survey *18<sup>th</sup> Nov. 1886* Last Survey *24<sup>th</sup> June 1887*

Received at London Office

on the *Screw Steamer "Larate"* (Number of Plates *37*) Tons *2408.39*

Master *H. Driver* Built at *Whitby* By whom built *Turnbull & Sons* When built *1887*

Engines made at *Stockton* By whom made *Blain & Co. Ltd.* when made *1887*

Boilers made at *Stockton* By whom made *Blain & Co. Ltd.* when made *1887*

Registered Horse Power *175* Owners *Turner, Brightman & Co.* Port belonging to *London*

## ENGINES, &c.—

Description of Engines *Inverted, Triple Expansion, 3 Cylinders, & 3 Cranks*  
Diameter of Cylinders *22", 36", 59"* Length of Stroke *39"* No. of Rev. per minute *60* Point of Cut off, High Pressure *1/2 stroke* Low Pressure *1/2 stroke*  
Diameter of Screw shaft *11 3/4"* Diam. of Tunnel shaft *11"* Diam. of Crank shaft journals *10 1/2"* Diam. of Crank pin *13"* size of Crank webs *16 1/4" x 7 3/8"*  
Diameter of screw *15.6"* Pitch of screw *17.0"* No. of blades *44* state whether moveable *no* total surface *63 sq. ft.*  
No. of Feed pumps *2* diameter of ditto *3"* Stroke *28"* Can one be overhauled while the other is at work *yes.*  
No. of Bilge pumps *2* diameter of ditto *4"* Stroke *28"* Can one be overhauled while the other is at work *yes.*  
Where do they pump from *Fore & main holds, Engine room, After well, ballast tanks & sea*  
No. of Donkey Engines *2* Size of Pumps *(7 1/2" x 9") (4" x 8")* Where do they pump from *(Ballast tanks, bilges, hotwell & sea.)*  
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 *6" dia* Are they connected to condenser, or to circulating pump *Circulating pump.*  
How are the pumps worked *By levers from the after piston rod crosshead.*  
Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *valves & 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 *{ Bilge suction to } { Steam, Exhaust & water } { Pipes to Refrigerating engines. }* How are they protected *{ By coiling. } { Being covered by } { iron casing. }*  
Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes except in bunkers*  
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 *4<sup>th</sup> April 1887*  
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Top platform of engine room.*

## BOILERS, &c.—

Number of Boilers *Three* Description *Cyl. Mult. Single Ended* Whether Steel or Iron *Steel*  
Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.* Date of test *4<sup>th</sup> May 1887.*  
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 *no Superheater*  
No. of square feet of fire grate surface in each boiler *47.25* Description of safety valves *Spring* No. to each boiler *2*  
Area of each valve *7.07* 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 *on woodwork 10"* Diameter of boilers *13.6 1/2"*  
Length of boilers *10.0"* description of riveting of shell long. seams *double butt straps* circum. seams *double rivet lap* Thickness of shell plates *1 1/32"*  
Diameter of rivet holes *1/4"* whether punched or drilled *drilled* pitch of rivets *1 1/2"* 2 rows *3 1/4"* Lap of plating *8 3/4"*  
Per centage of strength of longitudinal joint *83.3* working pressure of shell by rules *162 lbs.* size of manholes in shell *16" x 12"*  
Size of compensating rings *28" x 24" x 1 1/32"* No. of Furnaces in each boiler *3*  
Outside diameter *3.4"* length, top *6.3"* bottom *6.3"* thickness of plates *9/16"* description of joint *welded* if rings are fitted *—*  
Greatest length between rings *—* working pressure of furnace by the rules *175 lbs.* combustion chamber plating, thickness, sides *9/16"* back *9/16"* top *9/16"*  
Pitch of stays to ditto, sides *7 1/4" x 7 1/4"* back *7 1/4" x 7 1/4"* top *7 1/4" x 7 1/4"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *162 lbs.* Diameter of stays at smallest part *1 9/16"* working pressure of ditto by rules *192 lbs.* end plates in steam space, thickness *1 1/8"*  
Pitch of stays to ditto *16 1/2" x 15"* how stays are secured *double nut & head* working pressure by rules *166 lbs.* diameter of stays at smallest part *2 3/8"* working pressure by rules *161 lbs.* Front plates at bottom, thickness *1"* Back plates, thickness *1"*  
Greatest pitch of stays *12"* working pressure by rules *177 lbs.* Diameter of tubes *3 1/4"* pitch of tubes *4 7/8" x 4 1/2"* thickness of tube plates, front *1"* back *7/8"* how stayed *stay tubes* pitch of stays *9 1/4" x 9"* width of water spaces *1 1/4"*  
Diameter of Superheater or Steam chest *—* length *—* thickness of plates *—* description of longitudinal joint *—* diam. of rivet holes *—*  
Pitch of rivets *—* working pressure of shell by rules *—* 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 *—* how stayed *—*  
Superheater or steam chest; how connected to boiler *—*

STK 914-0236



DONKEY BOILER— Description *None*

Made at	by whom made	when made	where fixed
Working pressure	tested by hydraulic pressure to	No. of Certificate	fire grate area
valves	No. of safety valves	area of each	description of safety
enter the donkey boiler	diameter of donkey boiler	length	if fitted with easing gear
Thickness of shell plates	diameter of rivet holes	whether punched or drilled	if steam from main boilers can
percentage of strength of joint	thickness of crown plates	stayed by	description of riveting
Diameter of furnace, top	bottom	length of furnace	pitch of rivets
Thickness of furnace crown plates	stayed by	thickness of plates	lap of plating
Working pressure of furnace by rules	diameter of uptake	thickness of plates	working pressure of shell by rules
		thickness of water tubes	

SPARE GEAR. State the articles supplied :— *One propeller, One set of connecting rod bolts, One set of main bearing bolts, One set of coupling bolts, One set of valves for the feed-pumps also for the bilge-pumps, One set of L.P. piston springs, 100 bolts & nuts ass., Iron assorted.*

The foregoing is a correct description,  
*Geo Blair & Co* Manufacturer.  
*Geo Blair*

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

*The machinery and boilers of this vessel have been constructed under Special Survey, and the workmanship is of good quality, they have been tried under steam and found to work well and are now in safe and efficient working condition.*

*Additional steam, exhaust, and water pipes, are now being connected from the main piping in engine room, through the bunkers, to the refrigerating engine in the main and after holds, and when these pipes have been fitted, covered, and protected to the satisfaction of a Surveyor of this Society, the vessel will, in my opinion, be eligible to have the notification L. R. C. 6. 87. recorded in the Register Book.*

*The vessel has proceeded to the West India Dock London, where, it is stated, the work will be completed.*

The amount of Entry Fee .. £ 2 : 0 : 0 *at Stk*  
Special .. £ 26 : 5 : 0 *received by me*  
Donkey Boiler Fee .. £ : : : *ACA*  
Certificate (if required) .. £ : : : *29/6/18 87*  
To be sent as per margin.

Committee's Minute

FRIDAY 1 JUL 1887

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



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