

# REPORT ON MACHINERY.

Port of *Sunderland*

Received at London Office

11th 12 MAY 1890

Date, first Survey *October 1890* Last Survey *April 20th 1890*

(Number of Visits *34*)

Gross *3808.05*

Tons Net *2460.04*

When built *1890*

Survey held at *Sunderland*

on the *S.S. "Seaking"*

*H. Peace* Built at *S'land*

By whom built *W. Dorford Sons*

made at *S'land*

By whom made *W. Dorford Sons*

when made *1890*

made at *"*

By whom made *"*

when made *1890*

Indicated Horse Power *450*

Owners *W. Ross & Co.*

Port belonging to *London*

MACHINES, &c.—

Kind of Engines *Tri compound, 3 cranks*

No. of Cylinders *3*

Diameter of Cylinders *27" 44" 42"*

Length of Stroke *48"*

Rev. per minute *70"*

Point of Cut off, High Pressure *6"*

Low Pressure *6"*

Diameter of Screw shaft *13 1/2"* Diam. of Tunnel shaft *12 3/4"* Diam. of Crank shaft journals *13 1/4"* Diam. of Crank pin *13 1/4"* size of Crank webs *9 1/4" x 18"*

Diameter of screw *14" 9"* Pitch of screw *18" 9"* No. of blades *4* state whether moveable *M* total surface *85 sq*

No. of Feed pumps *2* diameter of ditto *4"* Stroke *22"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* diameter of ditto *4"* Stroke *22"* Can one be overhauled while the other is at work *yes*

Where do they pump from *bilges of all compartments tanks holds after well*

No. of Donkey Engines *2* Size of Pumps *6" x 4" x 6" x 9" x 10"* Where do they pump from *highest bilges, Sea*

*Howell tanks, Sea bilges*

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

No. of bilge injections *1* and sizes *5"* Are they connected to condenser, or to circulating pump *C. P.*

Are the pumps worked *by levers from L.P. engine*

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*

How are the pipes 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 *while building*

Is the screw shaft tunnel watertight *x* and fitted with a sluice door *yes* worked from *top platform*

BOILERS, &c.—

No. of Boilers *2* Description *Cy. double ended* Material *steel except tubes* Letter (for record)

Working Pressure *160 lbs.* Tested by hydraulic pressure to *330 lbs.* Date of test *April 10th 1890*

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 *x*

No. of square feet of fire grate surface in each boiler *103 sq* Description of safety valves *Spring* No. to each boiler *2*

Area of each valve *14.19 sq* 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 *15"* Diameter of boilers *14' 0"*

Length of boilers *16' 0"* description of riveting of shell long. seams *t. r. butt.* circum. seams *2 + t. r. lap* Thickness of shell plates *1 1/2"*

Diameter of rivet holes *1 5/16"* whether punched or drilled *a* pitch of rivets *8 1/4" + 4 1/2"* Lap of plating *18" Straps*

Percentage of strength of longitudinal joint *85.04* working pressure of shell by rules *160 lbs.* size of manholes in shell *16" x 13"*

Size of compensating rings *6" x 1 1/2"* No. of Furnaces in each boiler *6* Description of Furnaces *Box*

Outside diameter *3' 5 1/2"* length *6' 6"* thickness of plates *1/2"* description of joint *corrugated* if rings are fitted *✓*

Greatest length between rings *✓* working pressure of furnace by the rules *168* combustion chamber plating, thickness, sides *1/2"* back *✓* top *1/2"*

Pitch of stays to ditto, sides *12 x 13* back *12 x 13* top *12 x 13* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by

rules *162* Diameter of stays at smallest part *1.33 in* working pressure of ditto by rules *168* end plates in steam space, thickness *1" doubling plates*

Pitch of stays to ditto *16" x 15 1/2"* how stays are secured *2 nuts & washers* working pressure by rules *163 lbs.* diameter of stays at

smallest part *3 1/2"* working pressure by rules *178 lbs.* Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"*

Greatest pitch of stays *9 1/2"* working pressure by rules *160 lbs.* Diameter of tubes *3 1/2"* pitch of tubes *9 1/2"* thickness of tube

plates, front *3/4"* back *1/2"* how stayed *stay tubes* pitch of stays *9 1/2"* width of water spaces *12"*

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

No. of rivets *—* working pressure of shell by rules *—* diameter of flue *—* thickness of plates *—* If stiffened with rings *—*

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

Superheater or steam chest; how connected to boiler *—*



Lloyd's Register Foundation



DONKEY BOILER— Description *Vertical "Cochran patent"*  
Made at *Birkenhead*, by whom made *Cochran & Co.* when made *1890* where fixed *Stokehole*  
Working pressure *60 lbs.* tested by hydraulic pressure to *120 lbs.* No. of Certificate *871* fire grate area *25 sq.* descrip.  
valves *spring* No. of safety valves *2* area of each *7.07* if fitted with easing gear *yes* if steam from main bo.  
enter the donkey boiler *720* diameter of donkey boiler *4' 6"* length *15' 6"* description of riveting *2, r. 1, 1/2*  
Thickness of shell plates *7/16"* diameter of rivet holes *1 1/8"* whether punched or drilled *2* pitch of rivets *3 1/4"* lap of plating *4"*  
per centage of strength of joint *70.4%* thickness of crown plates *3/8"* stayed by *hemispherical*  
Diameter of furnace, top *3' 11"* rad. bottom *—* length of furnace *6' 3"* thickness of plates *3"* description of joint *5, 1/2, r. 1, 1/2*  
Thickness of furnace crown plates *3"* stayed by *Hemispherical* working pressure of shell by rules *70*  
Working pressure of furnace by rules *80 lbs.* diameter of uptake *18 x 20"* thickness of plates *3"* thickness of water tubes *—*

SHAPE GEAR. State the articles supplied:— *2 propeller blades, boiler tubes, 1 set of Cornish*  
*rod top & bottom end bolts & nuts, 2 main bearing bolts, 1 set of coupling*  
*bolts, 1 set of feed helge pump valves, nut bolts & more assorted.*

The foregoing is a correct description,

*William Douglas Son* Manufacturer, *main engines & boilers*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery and boilers of*  
*this vessel have been constructed under special survey of good*  
*materials & workmanship. the main steam pipes were tested to two*  
*the working pressure; when tried under steam the machinery*  
*boilers were satisfactory in my opinion this vessel is eligible for*  
*notification in the Register Book of + L.M.C. 5/90*

*It is submitted that this*  
*vessel is eligible to have*  
*+ L.M.C. 4. 90 accorded*  
*72*

*M.L.*  
*12.5.90*

The amount of Entry Fee .. £ *3* : : *received by me*

Special .. £ *42* : *10* :

Donkey Boiler Fee .. £ : : :

Certificate (if required) .. £ : : : *12.5.1890*

(Travelling Expenses, if any, £ : : :)

Committee's Minute

TUES 13 MAY 1890

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

*+ L.M.C. 5/90*