

# REPORT ON MACHINERY.

9540

No. 9540

No. in Survey held at *Glasgow & Greenock*, Date, first Survey *8<sup>th</sup> Dec<sup>r</sup> 1884* Last Survey *7<sup>th</sup> July 1888*

Received at London Office *12* 1888  
Number of Plates *40*  
Tons *2313.79*  
*1517.62*

on the *Screw Steamer Aldborough.*

Master *E. H. O'Neal* Built at *Port Glasgow.* By whom built *Russell & Coy.* When built *1888.*

Engines made at *Glasgow.* By whom made *Jas. Howden & Coy.* when made *1888.*

Boilers made at *Glasgow.* By whom made *Jas. Howden & Coy.* when made *1888.*

Registered Horse Power *220.* Owners *Aldborough Co. Ltd.* Port belonging to *London*  
*(F. Woods, Manager)*

GINES, &c.—  
Description of Engines *Triple Expansion Three Cranks.*

Diameter of Cylinders *22 1/2, 35 1/2, 58 1/2* Length of Stroke *39"* No. of Rev. per minute *75* Point of Cut off, High Pressure *var.* Low Pressure *var.*

Diameter of Screw shaft *11 1/2"* Diam. of Tunnel shaft *11"* Diam. of Crank shaft journals *11 1/2"* Diam. of Crank pin *11 1/2"* size of Crank webs *built*

Diameter of screw *14'-6"* Pitch of screw *16 to 17 feet* No. of blades *4* state whether moveable *al.* total surface *66 sq. ft.*

No. of Feed pumps *2.* diameter of ditto *3"* Stroke *19"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2.* diameter of ditto *4 1/2"* Stroke *19"* Can one be overhauled while the other is at work *yes.*

Where do they pump from *All compartments*

No. of Donkey Engines *2* Ballast Size of Pumps *C-S-P* *10 x 12 x 9"* Where do they pump from *Hot tank, sea.*  
*Stanks & bilges.* Feed *8" x 6" x 5"*

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 *5 1/2"* Are they connected to condensers, or to circulating pump *yes*

Are the pumps worked *by levers from the L.P. Engine Cross head*

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*

Are all 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*

Were stern tube, propeller, screw shaft, and all connections examined in dry dock *see Greenock Report No. 9521 attached*

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

BOILERS, &c.—  
Number of Boilers *Two* Description *Multitubular* Whether Steel or Iron *Steel*

Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *21<sup>st</sup> April 1888.*

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 *—*

Area of square feet of fire grate surface in each boiler *37.* Description of safety valves *direct spring* No. to each boiler *two*

Area of each valve *8.3"* 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 *19"* Diameter of boilers *19'-0"*

Height of boilers *11'-0"* description of riveting of shell long. seams *doub. butt str. tubercum.* seams *d. riv. lap* Thickness of shell plates *1 1/8"*

Diameter of rivet holes *1 1/16"* whether punched or drilled *drilled* pitch of rivets *7 1/16" & 3 1/16"* Lap of plating *17 3/4 butts str.*

Percentage of strength of longitudinal joint *84%* working pressure of shell by rules *160 lbs* size of manholes in shell *12" x 16"*

No. of compensating rings *doubling plate riv. to boiler* No. of Furnaces in each boiler *three*

Side diameter *39"* length, top *8'-0"* bottom *10'-6"* thickness of plates *9/16"* description of joint *welded* if rings are fitted *yes*

Closest length between rings *1'-11"* working pressure of furnace by the rules *160 lbs* combustion chamber plating, thickness, sides *10/16"* back *9/16"* top *10/16"*

Number of stays to ditto, sides *8 5/8"* back *7 3/4"* top *8 5/8"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *160 lbs* Diameter of stays at smallest part *1 3/8"* working pressure of ditto by rules *160 lbs* end plates in steam space, thickness *1 3/16" & doub. plate*

Number of stays to ditto *14" x 15"* how stays are secured *d. Nuts* working pressure by rules *160 lbs* diameter of stays at smallest part *2 3/8"* working pressure by rules *160 lbs* Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"*

Closest pitch of stays *13/16"* working pressure by rules *—* Diameter of tubes *2 1/2"* pitch of tubes *3 3/8"* thickness of tube plates, front *13/16"* back *1/16"* how stayed *d. tubes* pitch of stays *6 3/4"* width of water spaces *6"*

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

Number 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 *—*

Lloyd's Register  
GRK308-0194

**DONKEY BOILER**— Description *Crestus Patent Steel*  
 Made at *Gateshead* by whom made *Clark Chapman & Co.* when made *1888* where fixed *Stokehold*  
 Working pressure *80 lbs.* tested by hydraulic pressure to *160 lbs.* No. of Certificate *2483.* fire grate area *17 sq ft* description of  
 valves *direct spring* No. of safety valves *one* area of each *8.5"* if fitted with easing gear *yes* if steam from main boiler  
 enter the donkey boiler *no* diameter of donkey boiler *6'-0"* length *13'-0"* description of riveting *double rivet*  
 Thickness of shell plates *7/16"* diameter of rivet holes *7/8"* whether punched or drilled *drilled* pitch of rivets *3 3/16"* lap of plating *4 1/2"*  
 per centage of strength of joint *72%* thickness of crown plates *9/16"* stayed by *2 uptakes & six stays*—  
 Diameter of furnace, top *2'-8"* bottom *5'-2"* length of furnace *—* thickness of plates *7/16 & 1/2"* description of joint *single rivet*  
 Thickness of furnace crown plates *9/16"* stayed by *as above* working pressure of shell by rules *90 lbs.*  
 Working pressure of furnace by rules *80 lbs.* diameter of uptakes *10"* thickness of plates *7/16"* thickness of water tubes *7/16"*

**SPARE GEAR.** State the articles supplied:— *Propeller, Top and bottom end bolts. Main bearing and coupling bolts. Feed and bilge pump valves. Piston Springs. Bolts & nuts assorted.*

The foregoing is a correct description,  
 Manufacturer.

*James Howard & Co.*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The above mentioned Engines and Boilers are now completed outboard in a satisfactory manner and this vessel's machinery which is of good workmanship and material is now in my opinion eligible to be noted in the Society's Register Book: L.M.C. 7.88. The Boilers have been fitted with Howard's Patent Force draught arrangements.*

*It is submitted that this vessel is eligible to have the notification + done 7.8.88 recorded*  
*D.P.*  
*12/7/88*

The amount of Entry Fee .. £ *2* : - : - received by me,  
 Special .. £ *31* : - : -  
 Donkey Boiler Fee .. £ - : - : -  
 Certificate (if required) .. £ - : - : - *9/4/1888*  
 To be sent as per margin. *Counterfoil 10379*  
 (Travelling Expenses, if any, £ - *2/6*)  
 Committee's Minute **FRIDAY 13 JULY 1888**  
*+ done 7/88*

*John Anderson*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Ships  
 Glasgow.  
 Lloyd's Register Foundation