

# REPORT ON MACHINERY.

10210

No. 10210

Port of *Glasgow.*

Received at London Office

MON 20 OCT 1890

No. in Survey held at *Glasgow.*

Date, first Survey *2<sup>nd</sup> Aug<sup>r</sup> 1889* Last Survey *15<sup>th</sup> October 1890*

Reg. Book.

(Number of Visits *49*)

on the

*S. S. Ethelwold*

Tons { Gross *956*  
Net *533*

Master *Bermphole* Built at *Belfast* By whom built *Workman, Black & Co<sup>rs</sup>* When built *1890.*

Engines made at *Glasgow* By whom made *David Rowan & Son* when made *1890.*

Boilers made at *Glasgow* By whom made *David Rowan & Son* when made *1890.*

Registered Horse Power *by rules 130.* Owners *Golts, Lowden & Co* Port belonging to *Glasgow.*

## ENGINES, &c.—

Description of Engines *Triple Expansion.* No. of Cylinders *Three*  
Diam. of Cylinders *18", 27" & 45"* Length of Stroke *36"* Rev. per minute *80.* Point of Cut off, High Pressure *Var* Low Pressure *—*  
Diameter of Screw shaft *9 1/4"* Diam. of Tunnel shaft *8 1/2"* Diam. of Crank shaft journals *9 1/4"* Diam. of Crank pin *9 1/4"* size of Crank webs *built*  
Diameter of screw *12'-6"* Pitch of screw *15'-6"* No. of blades *4.* state whether moveable *yes* total surface *52 sq<sup>ft</sup>*  
No. of Feed pumps *Two* diameter of ditto *2 3/4"* Stroke *18"* Can one be overhauled while the other is at work *yes*  
No. of Bilge pumps *Two* diameter of ditto *2 3/4"* Stroke *18"* Can one be overhauled while the other is at work *yes*  
Where do they pump from *all compartments*  
No. of Donkey Engines *Two* Size of Pumps *2 1/2 x 6 x 10 x 11"* Where do they pump from *Sea, bilges and hotwell*

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 *4"* Are they connected to condenser, or to circulating pump *yes.*  
How are the pumps worked *by levers*  
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 *—*  
What pipes are carried through the bunkers *bilge pipes* How are they protected *wood casing*  
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 *See Belfast Report attached.*  
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform*

## BOILERS, &c—

No. of Boilers *One* Description *Multitubular* Material *Steel* Letter (for record) *B.*  
Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.* Date of test *5<sup>th</sup> May 1890.*  
Description of superheating apparatus or steam chest *none*  
Can each boiler be worked separately *—* Can the superheater be shut off and the boiler worked separately *—*  
No. of square feet of fire grate surface in each boiler *60* Description of safety valves *direct spring* No. to each boiler *two*  
Area of each valve *16* 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 *12"* Diameter of boilers *13'-6"*  
Length of boilers *14'-0"* description of riveting of shell long. seams *d. butt str.* circum. seams *lap* Thickness of shell plates *1 3/16*  
Diameter of rivet holes *1 1/4"* whether punched or drilled *drilled* pitch of rivets *7.5 x 3 1/2"* Lap of plating *18 x 1 straps*  
Per centage of strength of longitudinal joint *83%* working pressure of shell by rules *160 lbs* size of manholes in shell *17' x 12"*  
Size of compensating rings *31' x 28' x 1 3/16"* No. of Furnaces in each boiler *Six* Description of Furnaces *Corrugated.*  
Outside diameter *40"* length *6'-9"* thickness of plates *17/32* description of joint *welded* if rings are fitted *—*  
Greatest length between rings *—* working pressure of furnace by the rules *162 lbs* combustion chamber plating, thickness, sides *9/16* back *—* top *9/16*  
Pitch of stays to ditto, sides *7 1/2' x 7 3/4"* back *—* top *7' x 7 3/4"* 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 3/8* working pressure of ditto by rules *169 lbs* end plates in steam space, thickness *27/32* *his straps*  
Pitch of stays to ditto *16 1/2' x 15 1/2"* how stays are secured *d. nuts* working pressure by rules *160 lbs.* diameter of stays at smallest part *2 3/4* bars working pressure by rules *162 lbs* Front plates at bottom, thickness *12/16* Back plates, thickness *—*  
Greatest pitch of stays *—* working pressure by rules *—* Diameter of tubes *3 3/4"* pitch of tubes *5' x 5 1/2"* thickness of tube plates, front *7/8* back *7/8* how stayed *stubs* pitch of stays *10' x 11"* width of water spaces *about 6"*  
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 *—*

CLS 161-0043



10210 glb

DONKEY BOILER— Description *Vertical with Cross tubes*  
 Made at *Glasgow* by whom made *D. Rowan & son* when made *1890* where fixed *Stoke hole &c.*  
 Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *2663* fire grate area *21 sq ft* description of safety  
 valves *direct spring* No. of safety valves *two* area of each *4.46* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *6'-0"* length *9'-9"* description of riveting *double & single*  
 Thickness of shell plates *9/16* diameter of rivet holes *1"* whether punched or drilled *drilled* pitch of rivets *3 1/4"* lap of plating *4 3/4"*  
 per centage of strength of joint *69* thickness of crown plates *1/16* stayed by *Eight stays & uptake*  
 Diameter of furnace, top *4'-8 1/4"* bottom *5'-3 1/2"* length of furnace *5'-10 1/2"* thickness of plates *9/16* description of joint *welded*  
 Thickness of furnace crown plates *9/16* stayed by *as above* working pressure of shell by rules *96*  
 Working pressure of furnace by rules *90 lbs* diameter of uptake *15"* thickness of plates *8/16 in* thickness of water tubes *7/16 in*

SPARE GEAR. State the articles supplied:— *Main bearing & coupling bolts. Top & bottom end bolts. Spare valves for all the pumps. Air pump rod. Bolts, nuts & springs &c. —*

The foregoing is a correct description,  
*David Rowan & son* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The above mentioned engines and boilers have been built under special survey, and are now completed onboard the vessel in a satisfactory manner. The machinery which is of good workmanship & material is now in our opinion eligible to the notation: +L.M.C. 10.90. —*

*It is submitted that this vessel is eligible to have +L.M.C. 10.90 recorded*  
*M.A.*  
*20.10.90*

The amount of Entry Fee .. £ *2* : - : - received by me,  
 Special .. .. £ *19* : *10* : -  
 Donkey Boiler Fee .. .. £ - : - : -  
 Certificate (if required) .. £ - : - : - *16/10/1890*  
 To be sent as per margin.

Committee's Minute .. *FRI 24 OCT 1890*  
*+ Lmb 10/90*

*James Morrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Clyde District*