

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 2nd Aug^r 1889 Last Survey 15th October 1890

Reg. Book.

(Number of Visits 49)

on the

S. S. Ethelwold

Tons } Gross 956
Net 533

Master Berrupohle Built at Belfast By whom built Workean, Black & Co^{rs} 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^y Port belonging to Glasgow.

ENGINES, &c.—

Description of Engines Triple Expansion. No. of Cylinders Three

Num. 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 520 sq^t

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 5th 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 fl. No. of Furnaces in each boiler Six Description of Furnaces Corrugated.

Outside diameter 40" length 6'-9" thickness of plates 12/32 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 x 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 —

10210 Gb

DONKEY BOILER— Description *Vertical with Cross-tubes*
 Made at *Glasgow* by whom made *D. Rowan & Son* when made *1890* where fixed *Stokehold Fr.*
 Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *2663* fire grate area *21 1/2* 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 1/2"* 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 1/2"* 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.
W.A.
20.10.90

[Large blue handwritten signature]

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.

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

Committee's Minute .. **FRI 24 OCT 1890**
+ L.M.C. 10/90

Clyde District
 Lloyd's Register Foundation