

REPORT ON MACHINERY.

Copy 909 Cl. 6317

No. **6317** Port of **Glasgow** Received at London Office 18
 No. in Survey held at **Glasgow** Date, first Survey **1st May** Last Survey **Nov 13th 1883**
 Reg. Book. **"Enterprise"** (Number of Visits **15**) Tons Gross **1476.78**
Net **989.85**
 on the **Screw Steamer** Built at **Glasgow** By whom built **A. Stephen & Sons** When built **1883**
 Master **J. S. Tonkin** Engines made at **Glasgow** By whom made **A. Stephen & Sons** when made **1883**
 Boilers made at **—** By whom made **—** when made **1883**
 Registered Horse Power **180** Owners **The Enterprise Steam Ship Co. Ltd.** Port belonging to **Cardiff**

ENGINES, &c.—

Description of Engines **Inverted Direct Acting - Compound Surface Condensing** No. of Cylinders **—**
 Diam. of Cylinders **32" x 60"** Length of Stroke **39"** Rev. per minute **55** Point of Cut off, High Pressure **20"** Low Pressure **20"**
 Diameter of Screw shaft **10 1/2"** Diam. of Tunnel shaft **10"** Diam. of Crank shaft journals **10 1/2"** Diam. of Crank pin **11"** size of Crank webs **12 1/4" x 7"**
 Diameter of screw **14" x 6"** Pitch of screw **17" - 11"** No. of blades **4** state whether moveable **loose** total surface **44 3/4 sq ft**
 No. of Feed pumps **2** diameter of ditto **3 1/2"** Stroke **24"** Can one be overhauled while the other is at work **Yes**
 No. of Bilge pumps **2** diameter of ditto **3 1/2"** Stroke **24"** Can one be overhauled while the other is at work **Yes**
 Where do they pump from **Bilges Holds & Tanks**
 No. of Donkey Engines **Two 5 hand** Size of Pumps **Donkey 8" x 2 1/2" x 10" Mistee** Where do they pump from **Bilges Holds & Tanks**
 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 **3 1/2"** Are they connected to condenser, or to circulating pump **Circulating**
 How are the pumps worked **By levers from crosshead of both engines.**
 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**
 What pipes are 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 **Before Launching**
 Is the screw shaft tunnel watertight **Yes** and fitted with a sluice door **Yes** worked from **Engine room at Deck.**

BOILERS, &c.—

No. of Boilers **Two** Description **Cylindrical - Multitubular** Material **"Iron Shell"** Letter (for record) **—**
 Working Pressure **80 lbs** Tested by hydraulic pressure to **160 lbs** Date of test **Oct 20th 1883.**
 Description **Horizontal** steam chest **Horizontal**
 Can each boiler be worked separately **Yes** Can the superheater be shut off and the boiler worked separately **Yes**
 No. of square feet of fire grate surface in each boiler **36 1/2** feet Description of safety valves **direct spring** No. to each boiler **Two**
 Area of each valve **15.9 sq in** 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 **9"** Diameter of boilers **12" - 6"**
 Length of boilers **11' - 0"** description of riveting of shell long. seams **double riv butt** circum. seams **Lap - double** Thickness of shell plates **1"**
 Diameter of rivet holes **1 3/16"** whether punched or drilled **drilled** pitch of rivets **4 1/8"** Lap of plating **1 1/2" butt**
 Percentage of strength of longitudinal joint **weld 70** working pressure of shell by rules **90 lbs** size of manholes in shell **15" x 11 1/2"**
 Size of compensating rings **4 1/2" x 5 7/8"** No. of Furnaces in each boiler **Two** Description of Furnaces **—**
 Outside diameter **4' - 0"** length **7' - 6"** bottom **10' - 3"** thickness of plates **7/16"** description of joint **weld** if rings are fitted **Yes**
 Greatest length between rings **computed** working pressure of furnace by the rules **102 lbs** combustion chamber plating, thickness, sides **7/16"** back **7/16"** top **7/16"**
 Pitch of stays to ditto, sides **8"** back **13 1/4"** top **—** If stays are fitted with nuts or riveted heads **Nuts** working pressure of plating by rules **84 lbs** Diameter of stays at smallest part **1 3/8" screw** working pressure of ditto by rules **118 lbs** end plates in steam space, thickness **7/8"**
 Pitch of stays to ditto **1" - 5" x 1" - 4 1/2"** how stays are secured **Nuts** working pressure by rules **95 lbs** diameter of stays at smallest part **2 1/2"** working pressure by rules **105 lbs** Front plates at bottom, thickness **7/8"** Back plates, thickness **7/8"**
 Greatest pitch of stays **15" nearly** working pressure by rules **80 lbs** Diameter of tubes **3 1/2"** pitch of tubes **4 3/4" x 4 5/8"** thickness of tube plates, front **7/8"** back **7/16"** how stayed **tubes** pitch of stays **15" x 9 1/4"** width of water spaces **5"**
 Diameter of Superheater or Steam chest **3' - 0"** length **11' - 0"** thickness of plates **7/16"** description of longitudinal joint **Lap** diam. of rivet holes **13/16"**
 Pitch of rivets **2 1/2"** working pressure of shell by rules **115 lbs** 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 **2"** how stayed **one stay 1 1/2" dia**
 Superheater or steam chest; how connected to boiler **two nuts 15" dia 7/8" thick**

REPORT ON MACHINERY

DONKEY BOILER— Description *Vertical - with three cross tubes*
 Made at *Glasgow* by whom made *Alex^r Stephen & Sons* when made *1883* where fixed *In Steerhold*
 Working pressure *50 lbs* tested by hydraulic pressure to *100 lbs* No. of Certificate *1198* fire grate area *23 1/4 sq ft* description of safety
 valves *direct springs* No. of safety valves *2* area of each *7 1/2 in²* fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *6' 6"* length *10' 6"* description of riveting *Lap double*
 Thickness of shell plates *7/16"* diameter of rivet holes *13/16"* whether punched or drilled *punch^d* pitch of rivets *2 1/2"* lap of plating *4"*
 per centage of strength of joint *67.2* thickness of crown plates *2"* stayed by *8 stays 1 1/2" dia*
 Diameter of furnace, top *5' 5"* bottom *5' 10"* length of furnace *5' 5"* thickness of plates *7/16"* description of joint *Lap-single*
 Thickness of furnace crown plates *7/16"* stayed by *As above & uptake* working pressure of shell by rules *60 lbs*
 Working pressure of furnace by rules *50 lbs* diameter of uptake *15"* thickness of plates *7/16"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Top & bottom end connecting rod bolts & nuts,*
Two main bearing bolts, set of coupling bolts, feed & bilge pump valves
Bolts & nuts assorted. Iron of various sizes:

The foregoing is a correct description,
 (Sgd) *Alex^r Stephen & Sons* Manufacturer.

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

These engines & boilers have been constructed under Special Survey, they are of good material & workmanship, they have been well fitted on board - satisfactorily tested under steam & I am of opinion they are eligible to be classed ✠ Lloyd's M.C. 11.83 in the Register Book.

The approved plan of boiler, also reports on steel tests & forgings are herewith enclosed.

Certificate (if required) to be sent to
 The amount of Entry Fee .. £ : : received by me,
 Special £ : :
 Donkey Boiler Fee £ : :
 18

(Sgd) *Walter C. Robson*
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

(Travelling Expenses, if any, £)

Committee's Minute

