

REPORT ON MACHINERY

4853

No. 4853

MONDAY 21 MARCH 1884
Received at London Office

No. in Survey held at Glasgow Date, first Survey 10th Oct^r 1883 Last Survey March 18th 1884
 Reg. Book. — on the Screw Steamer "Harold" (Number of Visits 34) Tons 536.36
 Master J. Miller Built at Belfast By whom built Worthman & Clark When built 1884
 Engines made at Glasgow By whom made Hutton & Corbett when made 1884
 Boilers made at " By whom made " when made 1884
 Registered Horse Power 98 Owners Colin Lowden & Co Port belonging to Glasgow

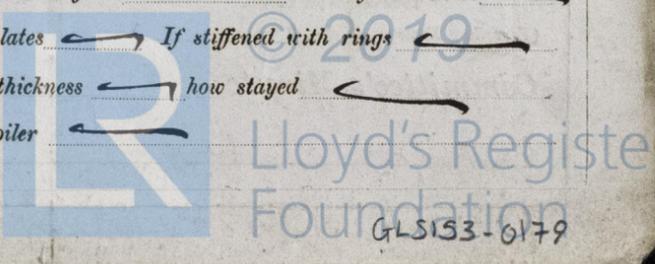
ENGINES, &c.—

Description of Engines Triple Expansion
 Diameter of Cylinders 14" 14" 44" Length of Stroke 36" No. of Rev. per minute 84 Point of Cut off, High Pressure 3/8 Low Pressure 1/16
 Diameter of Screw shaft 9" Diam. of Tunnel shaft 8 3/8" Diam. of Crank shaft journals 9" Diam. of Crank pin 9" size of Crank webs 10 3/4" x 6"
 Diameter of screw 11" x 4" Pitch of screw 13" x 6" No. of blades four state whether moveable yes total surface 34.5 sq ft
 No. of Feed pumps Two diameter of ditto 2 1/4" 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 One Size of Pumps 8" x 3 3/4" x 10" Where do they pump from Sea, Bilge & Hotwell 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 3/4" pipe Are they connected to condenser, or to circulating pump & Circulating
 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 yes
 What pipes are carried through the bunkers bilge pipe to fore hold 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 On Slip previous to being launched
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Upper platform

BOILERS, &c.—

Number of Boilers One Description Round Horizontal Whether Steel or Iron Steel
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 28th January 1884
 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 54 sq ft Description of safety valves Direct Spring No. to each boiler Two
 Area of each valve 4" 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 9" Diameter of boilers 13" x 6"
 Length of boilers 17 feet 0" description of riveting of shell long. seams Double riveted circum. seams Double riveted Thickness of shell plates 1 1/32"
 Diameter of rivet holes 13/16" whether punched or drilled Drilled pitch of rivets 4 1/8" 8" x 4" Lap of plating Straps
 Per centage of strength of longitudinal joint 84% working pressure of shell by rules 164 lbs size of manholes in shell 16" x 12"
 Size of compensating rings Doubling piece fitted No. of Furnaces in each boiler Three
 Outside diameter 3' x 2" length, top 4' 1 1/2" bottom 10' 10" thickness of plates 3/16" description of joint Corrugated if rings are fitted —
 Greatest length between rings — working pressure of furnace by the rules 164 lbs combustion chamber plating, thickness, sides 3/16" back 3/16" top 3/16"
 Pitch of stays to ditto, sides 6 1/8" x 4" back 6 7/8" x 6 7/8" top 7" x 4" If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 160" Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 160 lbs plates in steam space, thickness 10/16"
 Pitch of stays to ditto 14" x 14" how stays are secured by double nuts & washers working pressure by rules 160 lbs diameter of stays at smallest part 2 1/2" Solid (Iron) working pressure by rules 164 lbs Front plates at bottom, thickness 13/16" Back plates, thickness 13/16"
 Greatest pitch of stays 10" x 4" working pressure by rules — Diameter of tubes 3 1/2" pitch of tubes 4 3/4" x 4 3/4" thickness of tube plates, front 14/16" back 14/16" how stayed by tubes pitch of stays 9 1/2" x 9 1/2" width of water spaces 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 —

(State if Report is also sent on the Masts of the ship)



7853 gls

DONKEY BOILER— Description *Round Vertical*
 Made at *Glasgow* by whom made *Hutton & Corbett* when made *1884* where fixed *In Steehold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1467* fire grate area *10 1/2* description of safety
 valves *Direct Spring* No. of safety valves *One* area of each *4"* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *5 1/2* length *9' 6"* description of riveting *Double riveted*
 Thickness of shell plates *6/16* diameter of rivet holes *13/16* whether punched or drilled *Drilled* pitch of rivets *3"* lap of plating *4"*
 per centage of strength of joint *40* thickness of crown plates *1 1/16* stayed by *Uptake + 6 2" stay bars*
 Diameter of furnace, top *3' 8"* bottom *4 1/2'* length of furnace *4 1/2'* thickness of plates *8/16* description of joint *Lap single*
 Thickness of furnace crown plates *9/16* stayed by *as above* working pressure of shell by rules *84 lbs*
 Working pressure of furnace by rules *83 lbs* diameter of uptake *12"* thickness of plates *6/16* thickness of water tubes *6/16 x 9 1/2* dia

SPARE GEAR. State the articles supplied: *Two connecting rod bolts & nuts (top & bottom) 2 main bearing bolts, one set coupling bolts, 3 piston bolts & nuts, Huffer piston spring for each piston, one feed & buttrick pump valve also donkey pump valves, 2 propeller blades, assortment of bolts nuts iron &c*

The foregoing is a correct description,
 J. Hutton & Corbett Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers are of good workmanship & materials and are now in good order and safe working condition and eligible in my opinion to be noted in the Register Book* Lloyd's M.C. 3/84)

It is submitted that this vessel is eligible to have the registration fee on £ 3. 8. 7 recorded
 W.P.
 2/13/87

JAMES MOLLISON
 ENGINEER SURVEYOR

The amount of Entry Fee .. £ 1 : - : - received by me.
 Special .. £ 14 : 14 : -
 Donkey Boiler Fee .. £ - : - : -
 Certificate (if required) .. £ - : - : - 18/3/1887
 To be sent as per margin.
 (Travelling Expenses, if any, £ 8/-)

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

Committee's Minute
 TUESDAY 22 MARCH 1887
 + J.M.