

REPORT ON MACHINERY.

4673

Received at London Office THURSDAY 18 DEC 1883

No. 294

No. in Survey held at Dundee

Date, first Survey 25/1/83

Last Survey 24 Nov 1883

Reg. Book.

(Number of Visits) 1022.29

296 on the S.S. "Virgo"

Tons 658.34

Master Zaing Built at Dundee By whom built Gourlay Bros & Co When built 1870

Engines made at Dundee By whom made Gourlay Bros & Co when made 1883

Boilers made at Dundee By whom made Gourlay Bros & Co when made 1883

Registered Horse Power 140 Owners General Steam Nav. Co Port belonging to London

ENGINES, &c.—

Description of Engines *Direct acting Compound Int. Cyl. Surface Condensing*
 Diameter of Cylinders *30" & 54"* Length of Stroke *36"* No. of Rev. per minute *80* Point of Cut off, High Pressure *9/16"* Low Pressure *1/2"*
 Diameter of Screw shaft *10 1/2"* Diam. of Tunnel shaft *9 3/4"* Diam. of Crank shaft journals *10 1/2"* Diam. of Crank pin *10 1/2"* size of Crank webs *7" x 11 3/4"*
 Diameter of screw *14" 0"* Pitch of screw *14" 6"* No. of blades *4* state whether moveable *2nd* total surface *48 feet*
 No. of Feed pumps *two* diameter of ditto *3 1/2"* Stroke *20"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *two* diameter of ditto *3 1/2"* Stroke *20"* 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 *6" x 4" x 3 1/2"* Where do they pump from *sea, Hot tank, all compartments*
to boilers. thro ship side, and on deck
 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 1/2"* Are they connected to condenser, or to circulating pump *Circulating*
 How are the pumps worked *by levers from after engine*
 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 in dry dock *in dry dock*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *top of cylinders*

BOILERS, &c.—

Number of Boilers *two* Description *Circular Tubular* Whether Steel or Iron *Steel & iron stays*
 Working Pressure *75 lbs* Tested by hydraulic pressure to *150 lbs* Date of test *23 June 1883*
 Description of ~~superheating apparatus~~ steam chest *Horizontal dome*
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *—*
 No. of square feet of fire grate surface in each boiler *34 feet* Description of safety valves *Direct Spring load* No. to each boiler *two*
 Area of each valve *9.62 sq"* 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 *11" 3"*
 Length of boilers *9" 3"* description of riveting of shell long. seams *Lap Ribble R* circum. seams *Lap D R* Thickness of shell plates *5/8"*
 Diameter of rivet holes *1" steel R* whether punched or drilled *drilled* pitch of rivets *3 7/8"* Lap of plating *6 7/8" & 4 1/2"*
 Per centage of strength of longitudinal joint *74 & 76 %* working pressure of shell by rules *78 lbs* size of manholes in shell *17" x 13"*
 Size of compensating rings *angle 4" x 4" x 3 1/4"* No. of Furnaces in each boiler *two*
 Outside diameter *38 1/2"* length, top *6' 6"* bottom *6' 6"* thickness of plates *1 1/2"* description of joint *butt R. R.* if rings are fitted *no*
 Greatest length between rings *—* working pressure of furnace by the rules *77 lbs* combustion chamber plating, thickness, sides *7/16"* back *1 1/2"* top *1 1/2"*
 Pitch of stays to ditto, sides *9" x 8 1/2"* back *9" x 9 1/2"* top *round* If stays are fitted with nuts or riveted heads *both both ends* working pressure of plating by rules *79 lbs* Diameter of stays at smallest part *3 1/2"* side *1 1/2"* working pressure of ditto by rules *56 7/8 lbs* end plates in steam space, thickness *3/4"*
 Pitch of stays to ditto *17" x 15"* how stays are secured *thru ends thru* working pressure by rules *79 lbs* diameter of stays at smallest part *2 3/8" & 2 3/16"* working pressure by rules *57 6/8 lbs* Front plates at bottom, thickness *7/16"* Back plates, thickness *7/16"*
 Greatest pitch of stays *14" x 9 1/2"* working pressure by rules *57 2/4 lbs* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4" x —* thickness of tube plates, front *7/16"* back *7/16"* how stayed *tubes thru* pitch of stays *14 1/2" x 9 1/2"* width of water spaces *1 1/4"*
 Diameter of ~~superheater~~ Steam chest *3' 3"* length *8' 0"* thickness of plates *7/16"* description of longitudinal joint *Lap D. R.* diam. of rivet holes *3/4"*
 Pitch of rivets *2 1/2"* working pressure of shell by rules *154 lbs* diameter of flue *—* thickness of plates *—* If stiffened with rings *—*
 Distance between rings *—* working pressure by rules *—* end plates of ~~superheater~~ steam chest; thickness *4"* how stayed *by 4 bolts*
1 1/2" diam. thru ends thru Superheater or steam chest; how connected to boiler *by two malleable heads*

DONKEY BOILER— Description *one Round Vertical (not new) but has been repaired*
 Made at *Repaired* by whom made *Lowrey Bros & Co* when made *1883* where fixed *on Deck*
 Working pressure *50 lb* tested by hydraulic pressure to *100 lb* No. of Certificate *—* fire grate area *—* description of safety
 valves *Direct-Load* No. of safety valves *Two* area of each *—* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *6.2* length *11.7* description of riveting *—*
 Thickness of shell plates *—* diameter of rivet holes *—* whether punched or drilled *—* pitch of rivets *—* lap of plating *—*
 per centage of strength of joint *—* thickness of crown plates *—* stayed by *—*
 Diameter of furnace, top *—* bottom *—* length of furnace *—* thickness of plates *—* description of joint *—*
 Thickness of furnace crown plates *—* stayed by *—* working pressure of shell by rules *—*
 Working pressure of furnace by rules *—* diameter of uptake *—* thickness of plates *—* thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *Half Crank Shaft, one screw Shaft 6 Coupling*
Bolts 2 each Top Bottom Connecting Rod bolts 2 main bearing bolts
lot of bolts assorted, piston springs, air-circulating pump valves
50 Condenser Tubes & C.C.

The foregoing is a correct description,

John Hurrock Manufacturer

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines and Boilers of this*)
Vessel have been built under special survey.

The material and workmanship are of the best description
The boilers have been tested under steam and the safety valves set
to 75 lbs per square inch working pressure. and the machinery seen at
work, and in my opinion all are in good and safe working order and
eligible to be entered into the Register Book with the distinctive mark

✠ L.M.C 11.83.

It is submitted that this vessel
is eligible to have the notations
L.M.C and N.B.B. entered
11/6/83

The amount of Entry Fee .. £ : : received by me,

Special .. £ 21 : 0 : 0

Donkey Boiler Fee .. £ : :

Certificate (if required) .. £ : 2 : 6 29th Nov 1883.

To be sent as per margin.

(Travelling Expenses, if any, £ ..)

Committee's Minute

John Hurrock
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Dundee District

+ L.M.C 11.83
+ N.B.B. 11.83
+ H.F.