

REPORT ON MACHINERY.

No. 5064

Port of Dundee

MONDAY 3 OCT 1887

Received at London Office

No. in Survey held at Reg. Book.

Date, first Survey May 12th

Last Survey 26th Sept. 1887

(Number of Visits)

Tons 3096

145 on the

Master Calvert

Built at Dundee

By whom built Gourlay Bros

When built 1881

Engines made at Dundee

By whom made Gourlay Bros

when made 1884

Boilers made at

By whom made

when made 1887

Registered Horse Power 320

Owners Williamson Milligan & Co

Port belonging to Liverpool

ENGINES, &c.

Description of Engines Triple expansion Surface Condensing 4 cylinders
 Diameter of Cylinders 19" 41" 68" Length of Stroke 48" No. of Rev. per minute 65 Point of Cut off, High Pressure 5 Low Pressure 48
 Diameter of Screw shaft Diam. of Tunnel shaft Diam. of Crank shaft journals Diam. of Crank pin size of Crank webs
 Diameter of screw Pitch of screw No. of blades state whether moveable total surface
 No. of Feed pumps diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Bilge pumps diameter of ditto Stroke Can one be overhauled while the other is at work
 Where do they pump from
 No. of Donkey Engines Size of Pumps Where do they pump from
 Are all the bilge suction pipes fitted with roses Are the roses always accessible Are the sluices on Engine room bulkheads always accessible
 No. of bilge injections and sizes Are they connected to condenser, or to circulating pump
 How are the pumps worked
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate
 What pipes are carried through the bunkers How are they protected
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock
 Is the screw shaft tunnel watertight and fitted with a sluice door worked from

BOILERS, &c.

Number of Boilers Two Description Circular tubular Whether Steel or Iron Steel
 Working Pressure 160 Tested by hydraulic pressure to 320 Date of test 10/8/87
 Description of superheating apparatus or steam chest Longitudinal circular
 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 77.5 Description of safety valves Spring No. to each boiler Two
 Area of each valve 8.29" 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 10" Diameter of boilers 12' 9"
 Length of boilers 16' 0" description of riveting of shell long. seams Double butt circum. seams Lap joint Thickness of shell plates 1 5/32
 Diameter of rivet holes 1 3/16 whether punched or drilled Drilled pitch of rivets 8" Lap of plating 17 5/8" straps
 Per centage of strength of longitudinal joint 85% working pressure of shell by rules 166 size of manholes in shell 17" x 13"
 Size of compensating rings 4" x 4" x 3/4" No. of Furnaces in each boiler Six
 Outside diameter 3' 2 1/2" length, top 6' 5" bottom 7' 11 1/2" thickness of plates 1/2" description of joint Fox's Corrugated flue if rings are fitted No
 Greatest length between rings working pressure of furnace by the rules 168 combustion chamber plating, thickness, sides 17/32 back 9/16 top 9/16
 Pitch of stays to ditto, sides 7 7/8 x 7 7/8 back 7 7/8 x 7 7/8 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 160
 Diameter of stays at smallest part 1 7/32 working pressure of ditto by rules 160 end plates in steam space, thickness 1"
 Pitch of stays to ditto 16" x 14 1/2" how stays are secured nuts & riv. washers working pressure by rules 160 diameter of stays at smallest part 2 7/8 working pressure by rules 160 Front plates at bottom, thickness 3/4 Back plates, thickness
 Greatest pitch of stays working pressure by rules Diameter of tubes 3 1/2" pitch of tubes 5' x 5" thickness of tube plates, front 13/16 back 7/8 how stayed Stayed pitch of stays 10 x 10" width of water spaces 5 1/2"
 Diameter of Superheater Steam chest 2' 6" length 3' 6" thickness of plates 7/16 description of longitudinal joint Double rivet diam. of rivet holes 3/4"
 Pitch of rivets 2 1/2" working pressure of shell by rules 143 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 by one solid stay 2 1/2" dia Superheater on steam chest; how connected to boiler by 12" pipe 3/4" flange

DONKEY BOILER— Description *Vertical. Two in number.*
 Made at *Dundee* by whom made *Gourlay Bro' & Co* when made *1887* where fixed *On deck*
 Working pressure *70 lb* tested by hydraulic pressure to *140* No. of Certificate *505* fire grate area *17'4" sq ft.* description of safety
 valves *Spring* No. of safety valves *One* area of each *7'05"* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *5'6"* length *11'0"* description of riveting *Double riv. lap*
 Thickness of shell plates *3/8"* diameter of rivet holes *1/16"* whether punched or drilled *Drilled* pitch of rivets *2 3/8"* lap of plating *3 3/8"*
 per centage of strength of joint *70* thickness of crown plates *9/16"* stayed by *seven solid stays. 2 ins dia.*
 Diameter of furnace, top *4'4"* bottom *4'8 1/2"* length of furnace *5'11"* thickness of plates *1/2"* description of joint *Single riv. lap.*
 Thickness of furnace crown plates *1/2"* stayed by *seven solid stays; 2 ins dia.* working pressure of shell by rules *79 lb*
 Working pressure of furnace by rules *70 lb* diameter of uptake *15"-16"* thickness of plates *3/8"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Gourlay Brothers Manufacturer.

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

The Machinery of this vessel has been built under special survey. Two new high pressure cylinders each 19 ins dia one placed over the old cylinders and the diameter of one of the old cylinders by the inversion of a taper is reduced to 68 ins by these means the old compound engines of 44" and 78" dia are formed into triple expansion engines with two high pressure cylinders each 19" dia the intermediate cylinder 41 ins dia and the low pressure cylinder of 68 ins dia. The steel plates used in the construction of the boiler have been tested at the steelworks by one of the Society's surveyors, and the Certificate of Tests are annexed. The workmanship is good. The safety valves have been tested under steam with satisfactory result. Those of the main boiler blowing off at 100 lb and those of the donkey boiler at 70 lb. The engines are tried under steam and are working well. This vessel is in my opinion eligible to remain as before and to have the Notifications + L.M.C. q. 87 and N.B. q. 87 recorded in the Registerbook.

Submitted that this vessel is eligible to have the notification + L.M.C. q. 87 and + N.B. 87

The amount of Entry Fee .. £ : : received by me,
 Special .. £ 18 : 0 :
 Donkey Boiler Fee .. £ : :
 Certificate (if required) .. £ : :
 To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

TUESDAY 4 OCT 1887

W. H. Bell
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.