

REPORT ON MACHINERY.

3761

Port of Belfast

Received at London Office

18

Date, first Survey 12th Nov. 1889 Last Survey 3rd Sept 1890(Number of Visits 39)Tons 998Tons 3491

3761

Survey held at Belfast

Book. Sup.

on the Machinery of the S. S. MarlayBuilt at Belfast By whom built Workman & Clark When built 1890Made at Belfast By whom made Victor Coates & Co. when made 1890Made at Belfast By whom made Victor Coates & Co. when made 1890Registered Horse Power 150 Owners R. Sedcastle & Co. Port belonging to Dublin

INES, &c.—

Description of Engines

CompoundD. A. S. C.2 cyl. + 2 cranks.Diameter of Cylinders 32 & 59 Length of Stroke 39 No. of Rev. per minute 70 Point of Cut off, High Pressure 24 $\frac{1}{2}$ Low Pressure 22Diameter of Screw shaft 11 Diam. of Tunnel shaft 10 $\frac{1}{2}$ Diam. of Crank shaft journals 10 $\frac{1}{2}$ Diam. of Crank pin 10 $\frac{1}{2}$ size of Crank webs 16 $\frac{1}{2}$ x 8Diameter of screw 13-0 Pitch of screw 18-0 to 17-6 No. of blades 4 state whether moveable no total surface 54.25 sq. ft.No. of Feed pumps 2 diameter of ditto 3 $\frac{3}{4}$ Stroke 19 $\frac{1}{2}$ Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 diameter of ditto 4 $\frac{3}{4}$ Stroke 19 $\frac{1}{2}$ Can one be overhauled while the other is at work YesWhere do they pump from Feed from hotwell. Bilge from all holds, E. & B. space & tunnel.No. of Donkey Engines Three Size of Pumps Work. 6" cy. 4 pump 6" st. & 2 $\frac{1}{2}$ suction Where do they pump from Bilge in all holds andand B. spaces. Sea, ballast tanks, hotwell, exhaust tank and tunnel.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 YesNo. of bilge injections One and sizes 5" Are they connected to condenser, or to circulating pump Circulating suction.Are the pumps worked By levers and levers from after engine.Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Cocks and Valves.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 YesAre the pipes carried through the bunkers For hold bilge suction How are they protected Cased in with wood.Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times YesAre the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges YesWere stern tube, propeller, screw shaft, and all connections examined in dry dock Hamilton C.D. 29th Aug. 1890.Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper deck.

BOILERS, &c.—

Number of Boilers Two Description Single ended, multi-cyl. Whether Steel or Iron Steel.Working Pressure 90 lbs. Tested by hydraulic pressure to 180 lbs. Date of test 24th July 1890. No. of Boilers TwoDescription of ~~superheating apparatus~~ or steam chest Circ. horizontal with hemispherical ends. Common to bothCan each boiler be worked separately Yes Can the ~~superheater~~ be shut off and the boiler worked separately NoArea of square feet of fire grate surface in each boiler 57 Description of safety-valves Cocks No. to each boiler TwoArea of each valve 12.56 sq. in. Are they fitted with easing gear Yes No. of safety valves to ~~superheater~~ none area of each valve ✓Are they fitted with easing gear ✓ Smallest distance between boilers and bunkers or woodwork 7'-3" Diameter of boilers 12'-6"Length of boilers 10'-6" description of riveting of shell long. seams blde. riveted blde. circum. seams blde. riveted Thickness of shell plates 3 $\frac{1}{4}$ Diameter of rivet holes 1" whether punched or drilled drilled pitch of rivets 4 Lap of plating 10" x $\frac{9}{16}$ B. StrapsPercentage of strength of longitudinal joint 75 & 78 working pressure of shell by rules 94 lbs. size of manholes in shell 18" x 13"No. of compensating rings 11: heels patent No. of Furnaces in each boiler ThreeSide diameter 39 length, top 6'-6" bottom 9'-6" thickness of plates $\frac{7}{16}$ description of joint Welded if rings are fitted YesGreatest length between rings 3'-4" working pressure of furnace by the rules 90 lbs. combustion chamber plating, thickness, sides 15 $\frac{1}{32}$ back 5 $\frac{1}{32}$ top 5 $\frac{1}{32}$ Pitch of stays to ditto, sides 8 $\frac{1}{2}$ back 9 top Curved If stays are fitted with nuts or riveted heads nutted and washers working pressure of plating byrules ✓ Diameter of stays at smallest part 1 $\frac{1}{8}$ x $\frac{1}{2}$ working pressure of ditto by rules 90 lbs. end plates in steam space, thickness 3 $\frac{1}{4}$ Pitch of stays to ditto 15 $\frac{1}{4}$ x 15 $\frac{1}{2}$ how stays are secured blde. nuts & 9" x 3" washers riveted plates. working pressure by rules 93 lbs. diameter of stays atsmallest part 1 $\frac{1}{16}$ " steel working pressure by rules 96 lbs. Front plates at bottom, thickness 5 $\frac{1}{8}$ Back plates, thickness 4 $\frac{1}{8}$ Greatest pitch of stays 14" working pressure by rules 99 lbs. Diameter of tubes 3 $\frac{1}{2}$ pitch of tubes 4 $\frac{1}{4}$ thickness of tubePlating, front 3 $\frac{1}{4}$ back 4 $\frac{1}{8}$ how stayed stay tubes pitch of stays 14 $\frac{1}{4}$ " width of water spaces Side C.C. 8" x 5 $\frac{1}{2}$ "Diameter of Superheater or Steam chest 4'-0" length 8'-0" thickness of plates 13 $\frac{1}{32}$ description of longitudinal joint Lap and diam. of rivet holes 7 $\frac{1}{2}$ "Pitch of rivets 2" working pressure of shell by rules 95 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 13 $\frac{1}{32}$ how stayed HemisphericalIs the Superheater or steam chest; how connected to boiler By copper pipes - Stop valves on boilers

BEL 57-0165

DONKEY BOILER— Description *Vertical with uptake and cross water tubes*
Made at *Belfast* by whom made *Nickel Coates & Co* when made *1890* where fixed *Fore end of Stokeloid*
Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs*. No. of Certificate *82 24/99* grate area *15.90 sq ft* description of safety
valves *Cais* No. of safety valves *One* area of each *7.07* if fitted with easing gear *Yes* if steam from main boilers can
enter the donkey boiler *No* diameter of donkey boiler *5'-0"* length *12'-0"* description of riveting *Lap & double riveted*
Thickness of shell plates *13/32"* diameter of rivet holes *13/16"* whether punched or drilled *Drilled* pitch of rivets *2 3/4"* lap of plating *4"*
per centage of strength of joint *90* thickness of crown plates *9/16"* stayed by *Four 1 1/2" iron stays - Uptake*
Diameter of furnace, top *3'-7"* bottom *4'-4"* length of furnace *6'-6"* thickness of plates *7/16"* description of joint *Lapped and single riveted*
Thickness of furnace crown plates *9/16"* stayed by *Four 1 1/2" iron stays, uptake & convexity* working pressure of shell by rules *94 lbs*
Working pressure of furnace by rules *90 lbs* diameter of uptake *13 1/2" to 15"* thickness of plates *1/2"* thickness of water tubes *3/8" 12, 12, 12 in*

SPARE GEAR. State the articles supplied:— *2 Con. rod top end, ditto bottom end bolts and nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, (Patent piston springs), 12 pump ring bolts, 6 iron bars of various sizes, four dozen bolts & nuts etc etc.*

The foregoing is a correct description,
Nickel Coates & Co Manufacturer.
W. H. Stevenson

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

The Machinery of this Steamer has been constructed in accordance with the approved plan of main boilers, the Secretary's letter of the 3rd June 1889; the Rules of the Society for new Machinery, or equal thereto and to the satisfaction of the undersigned.

The main and donkey boilers, steam receiver and main steam pipes were tested by hydraulic pressure to 180 lbs per sq. inch being twice the working pressure.

The Safety valves were adjusted under steam to 90 lbs. working pressure, both the main and donkey boilers.

All shafting when finished was examined and found free from any visible defect.

The material used in the construction and the workmanship throughout were good and satisfactory and I am of opinion that the Machinery is eligible for the Notification **+L.M.C. 9-90**

It is submitted that this vessel is eligible to have +L.M.C. 9-90 recorded
N.A.
8-9-90

The amount of Entry Fee .. £ *2 : 8 : 0* received by me

Special .. £ *22 : 10 : 0*

Donkey Boiler Fee .. £ *1 :*

Certificate (if required) .. £ *Gratis* 10/9/90

To be sent as per margin.

(Travelling Expenses, if any, £ *✓*)

Committee's Minute

TUES 8 SEPT 1890

+ L.M.C. 9/90

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

Lloyd's Register
Foundation