

REPORT ON MACHINERY.

3829

No. 3829 ✓ Port of Belfast
 No. in Survey held at Belfast Date, first Survey 12th Feby. Last Survey 27th Nov 1890
 Reg. Book. Supt. Received at London Office THURS 4 DEC 1890
 25 on the Steel Screw Steamer "Memphis" (Number of Visits 28)
 Master John Wiltshire Built at Belfast By whom built Harland & Wolff Tons { Gross 3190
 Engines made at Belfast By whom made Harland & Wolff when made 1890 Net 2052
 Boilers made at - do. - By whom made - do. - when made 1890
 Registered Horse Power 300 Owners A. L. Jones Port belonging to Liverpool
Lloyd's T.P. 271
1500 at Sea Reg. Speed 10 1/2 knots.

ENGINES, &c.—

Description of Engines Tri-Compound D. A. I. S. C. 43 cranks No. of Cylinders Three
 Diam. of Cylinders 22" 36" 60" Length of Stroke 48" Rev. per minute 72 Point of Cut off, High Pressure .66 Low Pressure .55
 Diameter of Screw shaft 12 1/2" Diam. of Tunnel shaft 12" Diam. of Crank shaft journals 12 1/2" Diam. of Crank pin 1 1/2" size of Crank webs 16" x 9"
 Diameter of screw 16-0 Pitch of screw 17-3 No. of blades 4 state whether moveable no total surface 79 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. Bilge pumps 2 diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
 Where do they pump from Sea from hotwell. Bilge from all holds, & 4th space, & Tunnel.
 No. of Donkey Engines Three Size of Pumps 3 1/2" x 6" 4" pump 2 1/2" Suct. Where do they pump from Sea, hotwell, fresh water and ballast tanks, boilers, all bilges, in holds, & 4th space & 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 Yes
 No. of bilge injections One and sizes 5 1/2" Are they connected to condenser, or to circulating pump Circ. Suction.
 How are the pumps worked By links and levers from two after engines.
 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 below
 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 4th Octr. 1890 before launching
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper deck.

BOILERS, &c.—

No. of Boilers Two Description Double ended Cyl. Mult. Material Steel (Siemens) Letter (for record) 20-11-89
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 17th Octr 1890 - No 95.
 Description of superheating apparatus or steam chest None fitted.
 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 61 Description of safety valves D. Cockburn's No. to each boiler Two
 Area of each valve 8.3 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 or woodwork 13" Diameter of boilers 11'-6"
 Length of boilers 17'-0" description of riveting of shell long. seams double & single circum. seams double & single Thickness of shell plates 1/8"
 Diameter of rivet holes 1 1/4" whether punched or drilled drilled pitch of rivets 8 1/2" Lap of plating 18 1/2 x 3 1/2 B.S.
 Per centage of strength of longitudinal joint 85 working pressure of shell by rules 180 lbs. size of manholes in shell 12" x 16"
 Size of compensating rings 27 x 23 x 1 1/2 in No. of Furnaces in each boiler 4 Description of Furnaces Purves' ribbed
 Outside diameter 38" length 6'-9" thickness of plates 9/16" description of joint welded if rings are fitted ✓
 Greatest length between rings ✓ working pressure of furnace by the rules 184 lbs. combustion chamber plating, thickness, sides 19/32 back ✓ top 5/8"
 Pitch of stays to ditto, sides 7 1/4" back ✓ top 8 1/4 x 7 1/4" If stays are fitted with nuts or riveted heads nuts in C.P. and riveted in shell. working pressure of plating by rules 180 lbs. Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 197 lbs. end plates in steam space, thickness 1"
 Pitch of stays to ditto 18" x 16 1/4" how stays are secured with nuts & large washers riveted to front plate. working pressure by rules 186 lbs. with 240 for C. diameter of stays at smallest part 2 3/4" working pressure by rules 190 lbs. Front plates at bottom, thickness 13/16" Back plates, thickness ✓
 Greatest pitch of stays ✓ working pressure by rules ✓ Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 1/2" thickness of tube plates, front 7/16" back 3/4" how stayed stay tubes pitch of stays 9" x 9" width of water spaces C.P. side 7/16" bottom 1 1/4"
 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 ✓

DONKEY BOILER— Description *For Cir. Single ended Mault. with 2 furnaces & of Steel.*
Made at *Belfast* by whom made *Harland & Wolff* when made *1890* where fixed *Upper deck*
Working pressure *70 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *96* fire grate area *23.75 sq ft* description of safety
valves *2 Cockburns* No. of safety valves *2* area of each *5.94 sq ft* fitted with easing gear *Yes* if steam from main boilers can
enter the donkey boiler *No* diameter of donkey boiler *9'-0"* length *9'-0"* description of riveting *Lap & double riveted*
Thickness of shell plates *17/32* diameter of rivet holes *15"* whether punched or drilled *Drilled* pitch of rivets *3 1/4"* lap of plating *4 1/2"*
per centage of strength of joint *71* thickness of ~~crown~~ ^{end} plates *1 1/2"* stayed by *3 1/4" iron stays, stay tubes & screw stays*
Diameter of furnace, ~~top~~ ^{top} *2'-7"* bottom *1'-9"* length of furnace *4'-9"* thickness of plates *7/16"* description of joint *Double butt strap & single*
Thickness of ~~furnace~~ ^{C.C.} crown plates *2"* stayed by *W.I. screw stays 1 1/4" dia., top with girders* working pressure of shell by rules *77 lbs*
Working pressure of furnace by rules *74 lbs* diameter of uptake *1"* thickness of plates *1/8"* thickness of water tubes *1/8"*
one propeller.

SPARE GEAR. State the articles supplied:— *2 Con. rod top end and 2 bottom end bolts and*
nuts; 2 main bearing bolts & nuts; 1 set of coupling bolts; 1 set of feed
and bilge pump valves; set piston packing rings for each cyl.; F and L.P.
slide valve spindle; 1 set of circulating pump valves. etc etc.

The foregoing is a correct description,
Harland & Wolff Ltd Manufactured.

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

The machinery of this steamer is similar to that fitted on the
ss. "Sobraon" Bel. rept. No 3806 and has been constructed in
accordance with the Secretary's letter dated 20-11-89; the Rules of the
Society for New Machinery, or equal thereto and to the entire
satisfaction of the undersigned.

The main and auxiliary boilers and main steam pipes
have been tested by water to twice the working pressure and
safety valves adjusted under steam to 180 lbs. on main & 70 lbs. on
donkey boiler.

The main & auxiliary engines were tried under steam at
full speed and gave satisfaction.

All shafting when finished was examined & found free from a
visible defect.

The material used in the construction of the machinery and
the workmanship throughout are good and satisfactory and
I would respectfully recommend that the Notification
+ L.M.C 11-90 be granted and recorded in the Reg. Book.

The electric light is fitted throughout vessel on the single
wire system (double wires in vicinity of chart house & standard compass)
and the principal requirements of Notice No 483 carried out.

It is submitted that this vessel is capable
to have + L.M.C 11-90 recorded.

Machinery Certificate
Written.
The amount of Entry Fee *£ 3 : 0 : 0* *received by me,*
Special *£ 35 : 0 : 0*
Donkey Boiler Fee *£ :*
Certificate (if required) *£ 5 ratio* *4/12/90*
To be sent as per margin.
(Travelling Expenses, if any, £ *✓*)

Committee's Minute *FRI 5 DEC 1890*
+ L.M.C 11/90
James Maxton
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Lloyd's Register Foundation