

REPORT ON MACHINERY.

3726

No. 3726 Port of Belfast Received at London Office THURS 10 JULY 1890

No. in Survey held at Belfast Date, first Survey 7 Nov. 1889 Last Survey 5th July 1890

Reg. Book. Sup. 70 on the Steel s/s "Plassey" (Number of Visits 33) Tons 2046
3176
2962

Master Jos. Wadley Built at Belfast By whom built Harland & Wolff When built 1890

Engines made at Belfast By whom made Harland & Wolff when made 1890

Boilers made at do. By whom made do. when made 1890

Registered Horse Power 300 Owners The African S.S. Co. Port belonging to Liverpool

ENGINES, &c.— Registered Speed 10 1/2 knots.

Description of Engines Triple expansion 3 cylinders 3 cranks D.A.S.C.

Diameter of Cylinders 22.36.60 Length of Stroke 48" No. of Rev. per minute 72 Point of Cut off, High Pressure .66 MP-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 12 1/2" size of Crank webs 15 3/4" x 9"

Diameter of screw 16-0" Pitch of screw 17-3" No. of blades 4 state whether moveable no total surface 79.0 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. of 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, peak & funnel.

No. of Donkey Engines Three Size of Pumps 1 duplex 6" cyl. 10" stroke 2 1/2" suction. Ballast 10" cyl. 16" stroke 10" suction. Small 5" cyl. 8" stroke 5" suction. Where do they pump from Sea, ballast tank, evaporator, all bilges in hold, engine room space peak, boilers, fresh water tank and hotwell.

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 Circulating suction.

How are the pumps worked By links and levers from crossheads of the two after engines

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Cocks & 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 except the air pump.

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 22nd May 1890 before launching

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from upper deck

OILERS, &c.—

Number of Boilers 2 Description blended riv. multitubular Whether Steel or Iron Steel

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 28th May 1890
cert. No 48.

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 2

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 12" Diameter of boilers 11-6"

Length of boilers 17-0" description of riveting of shell long. seams double butt straps circum. seams inner tube outer double Thickness of shell plates 1 1/2"

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" or 18"

Percentage of strength of longitudinal joint 85.3 plate rivet working pressure of shell by rules 181 lbs. size of manholes in shell 12" x 16"

Size of compensating rings 23" x 27" x 1 1/8" McNeil's patent ring. No. of Furnaces in each boiler Four

Outside diameter 38" length, top 6-9" bottom — thickness of plates 5 1/8" description of joint welded if rings are fitted rolled

Greatest length between rings 9" working pressure of furnace by the rules 210 combustion chamber plating, thickness, sides 19" bot 5 1/2" top 5 1/8"

Thickness of stays to ditto, sides 7 3/4" back — top 7 3/4" x 8 1/2" If stays are fitted with nuts or riveted heads nutted in riveted working pressure of plating by rules 180 lbs. Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 197 end plates in steam space, thickness 7"

Thickness of stays to ditto 18" x 16 1/4" how stays are secured double nuts and lap working pressure by rules 228 lbs. with C-240 diameter of stays at smallest part 2 3/4" working pressure by rules 190 lbs. Front plates at bottom, thickness 1 3/16" Back plates, thickness —

Greatest pitch of stays 14 1/4" working pressure by rules 180 lbs. Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 1/2" thickness of tube —

Plating, front 7 1/8" back 3 1/4" how stayed stay tubes pitch of stays 9" x 9" width of water spaces bet. tubes 1 1/2" x 1 1/2"

Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —

Thickness 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 —

Purves Patent Description of furnaces

5800-25-13 BEL-57-0085

Lloyd's Register Foundation

DONKEY BOILER— Description *For Cir. Single ended. Mult^l. with 2 furnaces. 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 *79* fire grate area *23.75 sq. ft.* description of safety
 valves *Cockburn's Sp.* No. of safety valves *2* area of each *5.24* if 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 and double riveted*
 Thickness of shell plates *17/32* diameter of rivet holes *15/16* 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 ~~plates~~ ^{top 5/16} ~~plates~~ ^{bottom 3/16} stayed by *2 1/4" solid iron stays, stay tubes & screw stays.*
 Diameter of furnace, top *2'-7"* bottom *2'-7"* length of furnace *5'-10"* thickness of plates *7/16"* description of joint *lap bolts, traps and*
 Thickness of ~~furnace~~ ^{C.C. side shell} ~~plates~~ ^{bottom} stayed by *Screw stays W.I. 1 1/2" dia. top with guides* working pressure of shell by rules *77*
 Working pressure of furnace by rules *74 lbs.* diameter of uptake *✓* thickness of plates *✓* thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *2 connecting rod top end bolts and 2 low*
rod bottom end bolts with nuts; 2 main bearing bolts & nuts; 1 set of
coupling bolts & nuts; 1 set of feed and bilge pump valves; a piston
ring (from bottom) for each piston; 1 F.P.L.P. valve spindle; 1 set of air and cir
pump valves.

The foregoing is a correct description,
Harland & Wolff Manufacturer.

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

The machinery of this steamer has been constructed in accordance with the approved plans of main and donkey boilers, the Secretary's letters dated 7th August & 2nd December 1889; the Rules of the Society for new machinery, or equal thereto and to the satisfaction of the undersigned.

The steel used in the construction of the boilers has been tested as required by the Rules and signed invoices examined.

The main and auxiliary boilers and main steam pipe were tested by hydraulic to 360 lbs. pressure and showed no signs of weakness or leakage.

The boilers were tested under steam and safety valves adjusted to 180 lbs. & 70 lbs. working pressure on main and auxiliary boilers respectively.

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

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

The electric light was fitted throughout the vessel, the generator being a 4000 watt machine. 72 lights of 16 candle power.

The system is Swan's single wire.

The material used in the construction of the machinery and the workmanship throughout are good & satisfactory & I would respectfully recommend that the Notification **+ L.M.C. 790** be granted and recorded in the Register Book.

The amount of Entry Fee .. £ 3 : 0 : 0 received by me,
 Special £ 35 : 0 : 0
 Donkey Boiler Fee £ 7 : : :
 Certificate (if required) .. £ 5 ratio: 10/11/90
 To be sent as per margin.
 (Travelling Expenses, if any, £)

It is submitted that this vessel is eligible to have + L.M.C. 790 recorded. W.A. 10-7-90

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

Committee's Minute **+ L.M.C. 790**

