

REPORT ON MACHINERY.

110
MON 14 JULY 1890

Port of Sunderland

No. 15541 Imbro 92-110
No. in Survey held at Sunderland

Date, first Survey 24th January Last Survey July 1890

Received at London Office 18

Reg. Book. on the S.S. "Salado"

(Number of Visits 20)

Tons } Gross 2187.65
Net 1404.99
When built 1890

Master Built at Middlesbrough By whom built Raylton Dixon & Co

Engines made at Sunderland By whom made North Eastern Marine Eng Co when made 1890

Boilers made at Sunderland By whom made North Eastern Marine Eng Co when made 1890

Registered Horse Power 200 Owners A. Holland & Co Port belonging to London
Rule " " 199

ENGINES, &c.—

Description of Engines Triple compound, three cranks No. of Cylinders 3

Diam. of Cylinders 21.35.54 Length of Stroke 39" Rev. per minute 60 Point of Cut off, High Pressure 1/2 stroke Low Pressure 1/2 stroke

Diameter of Screw shaft 10 3/4" Diam. of Tunnel shaft 10 3/4" Diam. of Crank shaft journals 10 3/4" Diam. of Crank pin 10 3/4" size of Crank webs 4" x 16"

Diameter of screw 14-6" Pitch of screw 15-3" No. of blades 4 state whether moveable not total surface 55 sq

No. of Feed pumps 2 diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 4" Stroke 21" Can one be overhauled while the other is at work yes

Where do they pump from fore hold, engine room, after well & sea & tanks

No. of Donkey Engines 2 Size of Pumps 8 x 9 & 3 1/2 x 5 Where do they pump from 3 tanks, sea, hot well

after well engine room & fore hold

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" Are they connected to condenser, or to circulating pump circulating pump

How are the pumps worked by levers on intermediate 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 New vessel

Is the screw shaft tunnel watertight — and fitted with a sluice door yes worked from top platform in Engine Room

OILERS, &c.—

No. of Boilers 2 Description Ordinary marine type Material Steel excepting tubes Letter (for record) S

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 11-6-1890

Description of superheating apparatus or steam chest none

Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no superheater

No. of square feet of fire grate surface in each boiler 45 sq Description of safety valves direct spring No. to each boiler 2

Area of each valve 4.04 sq Are they fitted with casing gear yes No. of safety valves to superheater — area of each valve —

Are they fitted with casing gear — Smallest distance between boilers and bunkers or woodwork 15" Diameter of boilers 13-14"

Length of boilers 9-9" description of riveting of shell long. seams double butt strap circum. seams double riv-lap Thickness of shell plates 1 3/16"

Diameter of rivet holes 1 5/8" whether punched or drilled drilled pitch of rivets 4" & 3 1/2" Lap of plating 16" straps

Percentage of strength of longitudinal joint 83.9% working pressure of shell by rules 162 lbs size of manholes in shell 16" x 12"

Size of compensating rings 8" x 1 3/16" No. of Furnaces in each boiler 3 Description of Furnaces plain

Outside diameter 3-0" length 6 feet thickness of plates 3/4" description of joint welded if rings are fitted no

Greatest length between rings — working pressure of furnace by the rules 183 lbs combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"

Pitch of stays to ditto, sides 4 3/4" x 4 3/4" back 4 3/4" x 4 3/4" top 4 3/4" x 4 3/4" stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 161 lbs Diameter of stays at smallest part 1.33 working pressure of ditto by rules 144 lbs plates in steam space, thickness 1 7/16"

Pitch of stays to ditto 15 7/8" x 15 3/4" how stays are secured nuts working pressure by rules 160 lbs diameter of stays at

smallest part 2 5/8" working pressure by rules 161 lbs Front plates at bottom, thickness 3/4" Back plates, thickness 7/8"

Greatest pitch of stays 11 1/2" working pressure by rules 144 lbs Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 1/2" thickness of tube

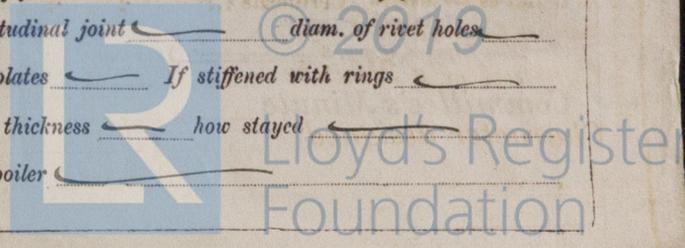
plates, front 1 3/16" back 3/4" how stayed stay tubes pitch of stays 9" x 9" width of water spaces 1 1/4"

Diameter of Superheater or Steam chest none 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 —

Total heating surface 3060 sq Superheater or steam chest; how connected to boiler —



DONKEY BOILER— Description *Single ended below deck boiler with 2 furnaces*
 Made at *Hockley* by whom made *Riley Bros.* when made *1790* where fixed *on level of deck*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1064* fire grate area *20 sq feet* description of safety
 valves *Spring* No. of safety valves *2* area of each *50 sq in* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *8' 6"* length *8' 0"* description of riveting *Long Lap Double*
 Thickness of shell plates *9/16* diameter of rivet holes *1 1/8"* whether punched or drilled *Drilled* pitch of rivets *3"* lap of plating *4 1/2"*
 per centage of strength of joint *68%* thickness of crown plates *5/8"* stayed by *1 1/2" Sp. Iron Stays 13 1/2" x 13" pitch*
 Diameter of furnace, top *27 1/2"* bottom *27 1/2"* length of furnace *3' 6"* thickness of plates *3/16"* description of joint *Lap Single*
 Thickness of furnace crown plates *1 1/2"* stayed by *1 1/2" Sp. Iron Stays 13 1/2" x 13" pitch* working pressure of shell by rules *81 lbs*
 Working pressure of furnace by rules *82 lbs* diameter of uptake *6' 0"* thickness of plates *1/2"* thickness of water tubes *3/4"*

SPARE GEAR. State the articles supplied:— *Top and bottom end connecting rod bolts & nuts
 two main bearing bolts & nuts, one set of coupling bolts & nuts
 feed and bilge pump valves, piston springs, bolts, nuts &
 iron assorted.*

The foregoing is a correct description,
North & South Main Engines & Boilers
J. H. Smith Manufacturer of Main Engines & Boilers

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

The main steam pipes have been tested by hydraulic pressure to 320 lbs. The machinery of the above mentioned vessel has been constructed under special survey, the material and workmanship are good and efficient and the engines when tried under steam worked satisfactorily. In my opinion the machinery of the above vessel is in good order & safe working condition and eligible for the notification in the Register Book of L.M.C. 6-90 when the following work is done to the satisfaction of a surveyor to this Society viz. Sluices to fit on bulkheads, suction to connect to fore hold & after well and engine room, donkey boiler to be fitted with mountings and tried under steam.

The above mentioned work has been satisfactorily completed.

Wm. R. Austin

8th July 1890

[Large blue ink signature]

It is submitted that this vessel is eligible to have L.M.C. 6-90 recorded.

The amount of Entry Fee .. £ *2* : .. received by me,
 Special .. £ *29* : *14* : ..
 Donkey Boiler Fee .. £ .. : ..
 Certificate (if required) .. £ .. : .. *12. 7. 1890*
 To be sent as per margin.

[Handwritten initials]

(Travelling Expenses, if any, £ ..)

John Salmon
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES 15 JULY 1890**

+ L.M.C. 6.90

Freight Certificate Written

Machinery Certificate Written

