

REPORT ON MACHINERY.

5841

CH 5841
No. 23134
No. in Survey held at
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Port of Newcastle

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Date, first Survey 6th Decr/88 Last Survey 22nd June 1889

(Number of Visits 25) 47

on the

S. S. Emerald

Tons 20

Master Built at Leith By whom built Marr Bros When built 1889
Engines made at North Shields By whom made J. O. Spence when made 1889
Boilers made at South Shields By whom made R. J. Marshall when made 1889
Registered Horse Power 18 Owners John Forrest & Co Port belonging to N Shields

ENGINES, &c.—

Description of Engines *Screw, Compound, surface condensing*
Diameter of Cylinders *10 1/2" . 20"* Length of Stroke *14"* No. of Rev. per minute *100* Point of Cut off, High Pressure *5"* Low Pressure *5"*
Diameter of Screw shaft *4"* Diam. of Tunnel shaft *4"* Diam. of Crank shaft journals *4"* Diam. of Crank pin *4"* size of Crank webs *5 x 2 1/2"*
Diameter of screw *5-11"* Pitch of screw *8-3"* No. of blades *3* state whether moveable *no* total surface
No. of Feed pumps *one* diameter of ditto *2"* Stroke *6 1/2"* Can one be overhauled while the other is at work ☒
No. of Bilge pumps *one* diameter of ditto *2"* Stroke *6 1/2"* Can one be overhauled while the other is at work ☒
Where do they pump from *bilge (1)*
No. of Donkey Engines *one* Size of Pumps *5 x 2 1/2"* Where do they pump from *from bilge (1) sea to boiler on deck overboard*
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 ☒
No. of bilge injections *✓* and sizes *✓* Are they connected to condenser, or to circulating pump *✓*
How are the pumps worked *Levers over condenser on After 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
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*
Is the screw shaft tunnel watertight *none* and fitted with a sluice door *✓* worked from *✓*

BOILERS, &c.—

Number of Boilers *One* Description *Cyl. Multi Single Ended* Whether Steel or Iron *all steel except stays and tubes*
Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *27.3.89*
Description of superheating apparatus or steam chest *Vertical dome*
Can each boiler be worked separately ☒ Can the superheater be shut off and the boiler worked separately ☒
No. of square feet of fire grate surface in each boiler *10 1/2* Description of safety valves *spring* No. to each boiler *2*
Area of each valve *4.9* 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 *3 1/2"* Diameter of boilers *4'-8"*
Length of boilers *8'-0"* description of riveting of shell long. seams *lap triple* circum. seams *lap single* Thickness of shell plates *3/16"*
Diameter of rivet holes *3/8"* whether punched or drilled *drilled* pitch of rivets *4"* Lap of plating *6"*
Per centage of strength of longitudinal joint *78* working pressure of shell by rules *79.7 lbs* size of manholes in shell *16" x 12"*
Size of compensating rings *6" x 3/16"* No. of Furnaces in each boiler *Two*
Outside diameter *29"* length, top *5'-0"* bottom *4'-0"* thickness of plates *3/16"* description of joint *Double butt single rings are fitted no*
Greatest length between rings *✓* working pressure of furnace by the rules *118 lbs* combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*
Pitch of stays to ditto, sides *9 3/4" x 8"* back *9 3/4"* top *16"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *80* Diameter of stays at smallest part *1 3/8"* working pressure of ditto by rules *93 lbs* end plates in steam space, thickness *3/4"*
Pitch of stays to ditto *15 3/4"* how stays are secured *Nuts Washers in nut* working pressure by rules *92 lbs* diameter of stays at smallest part *2 3/8"* working pressure by rules *107 lbs* Front plates at bottom, thickness *3/8"* Back plates, thickness *1/2"*
Greatest pitch of stays *9 3/4"* working pressure by rules *80 lbs* Diameter of tubes *3"* pitch of tubes *4 1/4"* thickness of tube plates, front *3/8"* back *5/8"* how stayed *stays* pitch of stays *12 3/4"* width of water spaces *5"*
Diameter of ~~superheater~~ or Steam chest *2'-0"* length *3'-0"* thickness of plates *3/8"* description of longitudinal joint *Welded* diam. of rivet holes *✓*
Pitch of rivets *✓* working pressure of shell by rules *✓* diameter of flue *✓* thickness of plates *✓* It stiffened with rings *✓*
Distance between rings *✓* working pressure by rules *✓* end plates of ~~superheater~~ or steam chest; thickness *1/2"* how stayed *3 stays*
1 1/2" effective dia Superheater or steam chest; how connected to boiler *Steel neck riveted*

Report made by J. O. Spence and R. J. Marshall

47H558-0243

DONKEY BOILER— Description *none*

Made at _____ by whom made _____ when made _____ where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ fire grate area _____ description of safety
 valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers can
 enter the donkey boiler _____ diameter of donkey boiler _____ length _____ description of riveting _____
 Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____
 per centage of strength of joint _____ thickness of crown plates _____ stayed by _____
 Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of plates _____ description of joint _____
 Thickness of furnace crown plates _____ stayed by _____ working pressure of shell by rules _____
 Working pressure of furnace by rules _____ diameter of uptake _____ thickness of plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *2 top & 2 bottom end conn. rod. bolts & nuts 2 main
 bearing bolts & nuts one set coupling bolts, one set bilge & feed pump valves
 piston springs Bolts & nuts assorted Bar iron of various sizes*

The foregoing is a correct description,

Robt Marshall

Manufacturer of Boiler

Jos Spence

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

The machinery of this

*vessel has been constructed under special survey, the material
 & workmanship are sound & good & renders the vessel eligible in
 our opinion to be classed with the Record + LMC 7-89 in the Register
 Book of the Society subject to the following being completed.*

*The spare gear as per above list has been made & not placed
 on board this vessel, owing to a dispute between the owners and
 engine builders & respectfully beg to submit that the notification
 be withheld until this be done*

*It is submitted that this vessel will
 be eligible to have + LMC 6-89
 recorded, when the spare gear has
 been put on board*

*W.D.
 14.8.89*

Dr to Lth 8/11/89

The amount of Entry Fee .. £ 1 : -

Special .. £ 8 : -

Donkey Boiler Fee .. £ - : -

Certificate (if required) .. £ - : -

(Travelling Expenses, if any, £ ..)

FRIDAY 16 AUGUST 1889

Committee's Minute

Dr to Lth 31/10/89

+ LMC 6, 89

Jas Barclay Richd. Napier
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI 17 OCT 1889

to show spare gear

Lloyd's Register
 Foundation