

Sirius Hpl.

No. 21216
M.V. 3578

REPORT ON MACHINERY.

Port of *Sunderland*

MAY 14 1903

Survey held at *Sland & Stockton* Date, first Survey *11th Sept.* Last Survey *19th Dec. 1902*
Received at London Office *5th May 1903*

on the *Steel Screw Steamer "Dicio"* (Number of Visits *21*) Tons { Gross *1478.23*
Net *917.92*

Built at *Stockton* By whom built *Messrs Craig Taylor & Co. Ltd.* When built *1903*

made at *Sunderland* By whom made *The N.E. M.E. Coy Ltd.* when made *1902*

made at " By whom made " " " " " " when made "

rated Horse Power Owners *The Trinidad S.S. Co. Ltd* Port belonging to *London*

Horse Power as per Section 28 *168.3* Is Electric Light fitted *No*

RES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*

Number of Cylinders *19"-31"-51"* Length of Stroke *36"* Revolutions per minute *About 80* Diameter of Screw shaft *as per rule 11.1"*

Diameter of Tunnel shaft *as fitted 9.211"* Diameter of Crank shaft journals *9 3/4"* Diameter of Crank pin *9 3/4"* Size of Crank webs *15 1/2" x 6"*

Diameter of screw *13-3"* Pitch of screw *14-6"* No. of blades *4* State whether moveable *No* Total surface *55 sq ft*

Feed pumps *2* Diameter of ditto *2 3/4"* Stroke *1-9"* Can one be overhauled while the other is at work *Yes*

Bilge pumps *2* Diameter of ditto *3"* Stroke *1-9"* Can one be overhauled while the other is at work *Yes*

Donkey Engines *2* Sizes of Pumps *6x7x9 8 1/2 x 3 x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *2 of 2 1/2" 1 of 3"* In Holds, &c. *2 of 3" in each & 1 of 3" in*

Funnel well

Bilge injections *1* sizes *3 1/2"* Connected to condenser, or to circulating pump *C.P.* Is a separate donkey suction fitted in Engine room & size *Yes 2 1/2"*

Are the bilge suction pipes fitted with roses *Yes* Are the roses in Engine room always accessible *No* Are the sluices on Engine room bulkheads always accessible *None*

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*

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*

How are they protected *Yes*

Are pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*

Are bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *Yes*

Were stern tube, propeller, screw shaft, and all connections examined in dry dock *New vessel* Is the screw shaft tunnel watertight *See ship report*

Is it fitted with a watertight door *yes* worked from *Main deck*

RES, &c.— (Letter for record *S*) Total Heating Surface of Boilers *2710 sq ft* Is forced draft fitted *No*

Description of Boilers *2 Ordinary Marine* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *74.25 sq ft* No. and Description of safety valves to

each boiler *2 Spring* Area of each valve *4.9 sq ft* Pressure to which they are adjusted *160 lbs* Are they fitted

with easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or woodwork *18"* Mean diameter of boilers *12-3 3/16"*

Material of shell plates *S* Thickness *1 1/16"* Description of riveting: circum. seams *D.R.L* long. seams *D.R.D.B.*

Number of rivet holes in long. seams *1 3/16"* Pitch of rivets *6 5/16"* Lap of plates or width of butt straps *12 5/8"*

Percentage of strength of longitudinal joint *83.5* Working pressure of shell by rules *162.3 lbs* Size of manhole in each *16" x 12"*

Compensating ring *Flanged* No. and Description of Furnaces in each boiler *2 plain* Material *S* Outside diameter *3-6"*

Height of plain part *6-11"* Thickness of plates *3/4"* Description of longitudinal joint *Welded* No. of strengthening rings *1*

Working pressure of furnace by the rules *169 lbs* Combustion chamber plates: Material *S* Thickness: Sides *2 1/32"* Back *1/16"* Top *2 1/32"* Bottom *1"*

Number of stays to ditto: Sides *10 1/4" x 8 3/4"* Back *10 1/4" x 9 3/4"* Top *9 1/4" x 8 3/4"* If stays are fitted with nuts or riveted heads *BOTH* Working pressure by rules *168.2 lbs*

Area of stays *S* Diameter at smallest part *1.79 sq ft* Area supported by each stay *99.94 sq ft* Working pressure by rules *161.5 lbs* End plates in steam space:

Material *S* Thickness *1/32"* Pitch of stays *18 1/8" x 17 1/4"* How are stays secured *N.T.W.* Working pressure by rules *161 lbs* Material of stays *S*

Area at smallest part *5.05 sq ft* Area supported by each stay *312.65 sq ft* Working pressure by rules *161.6 lbs* Material of Front plates at bottom *S*

Material of Lower back plate *S* Thickness *1 1/16"* Greatest pitch of stays *13 3/4" x 9 3/4"* Working pressure of plate by rules *160.4 lbs*

Number of tubes *3 1/4"* Pitch of tubes *4 3/4" x 4 1/2"* Material of tube plates *S* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *9 1/2" x 9"*

Working pressures by rules *245 lbs* Girders to Chamber tops: Material *S* Depth and

Distance apart *9 1/4"* Number and pitch of Stays in each *2 of 8 3/4"*

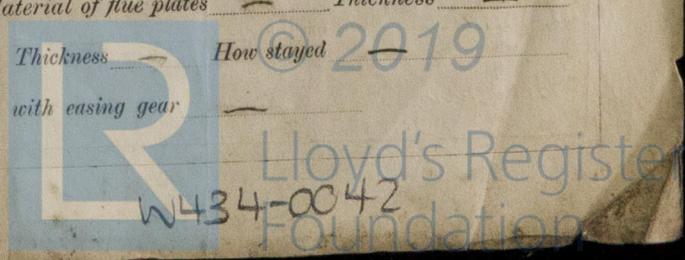
Can the superheater be shut off and the boiler worked

by — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet

Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —

End plates: Thickness — How stayed —

Working pressure by rules — Area of safety valves to superheater — Are they fitted with easing gear —



DONKEY BOILER— Description *One Vertical Cochran's patent*
 Made at *Annan* By whom made *Cochran & Co.* When made *1902* Where fixed *Stokehold*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *6477* Fire grate area *25 sq ft* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *4.9* Pressure to which they are adjusted *100 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *7'-0"* Length *15'-0"* Material of shell plates *Steel* Thickness *1/32*
 Description of riveting long. seams *double* Diameter of rivet holes *29/32* Whether punched or drilled *drilled* Pitch of rivets *2 3/4*
 Lap of plating *4 1/2* Per centage of strength of joint Rivets *76* Plates *67* Thickness of shell crown plates *15/32* Radius of do. *3-6* No. of Stays to do. *none*
 Dia. of stays. *✓* Diameter of furnace Top *3-0* Bottom *✓* Length of furnace *✓* Thickness of furnace plates *21/32* Description of joint *riveted* Thickness of furnace crown plates *21/32* Stayed by *none* Working pressure of shell by rules *101 lbs*
 Working pressure of furnace by rules *109 lbs* Diameter of uptake tubes *2 1/2* Thickness of uptake plates *3/4 x 7/8* Thickness of water tubes *1/4*

SPARE GEAR. State the articles supplied:— *Set of top & bottom end, main bearing & coupling bolts & nuts. Set of air, air, feed, & bilge pump valves, propeller shaft, assorted bolts, nuts, & iron*

The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING CO. LTD Manufacturer.
Walter Rattray

Dates of Survey while building
 During progress of work in shops— 1902. - Sept. 11. Oct. 2. 10. 15. 17. 21. 27. 29. 31. Nov. 5. 19. 20. 28. Dec. 1. 5. 8. 10. 11. 12.
 During erection on board vessel— 15. 19. Mch. 1902. Apr. 21. Dec. 3. 1903. Jan. 6. 23. 27. 28. Feb. 6. 13. 24. Mar. 24. May 5.
 Total No. of visits *21* Mch. 11

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

ENGINES—Length of stern bush *3'-9"* Diameter of crank shaft journals *as per rule 9.671"* Diameter of thrust shaft under collars *9 3/4"*
as fitted 9 3/4"

BOILERS—Range of tensile strength *29/32 T3*. Are they welded or flanged *No* **DONKEY BOILERS**—No. *one* Range of tensile strength *27/32*

Is the approved plan of main boiler forwarded herewith *Yes* Is the approved plan of donkey boiler forwarded herewith *no*

Material of screw shaft *Scraper iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No*

Is the after end of the liner made water tight in the propeller boss *Yes* If the liner is in more than one length are the joints burned *✓*

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *No* If two liners are fitted, is the shaft lapped or protected between the liners *Lapped at ends*

The machinery & boilers herein described have been built under Special Survey, the material & workmanship are good & efficient. Main boiler & steam pipes tested to double working pressure.

The whole examined under steam at working pressure & found satisfactory.

In our opinion this vessel is worthy of the Record of *L.M.C. 5-03* in the Register Books.

It is submitted that this vessel is eligible for THE RECORD *L.M.C. 5-03*.

RETAIN

The amount of Entry Fee... £ *2* : : When applied for, *19-1-03*
 Special ... £ *25* : *4* : :
 Donkey Boiler Fee ... £ : : :
 Travelling Expenses (if any) £ : : : *23-1-18*

W. J. Fillmore R.D. Shilston
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI 15 MAY 1903**
 Assigned *+ L.M.C. 5-03*

Certificate (if required) to be sent to Sunderland
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

MACHINERY CERTIFICATE
 WRITTEN



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