

REPORT ON MACHINERY.

MON. SEP 2 1901

Port of Middlesbrough

Received at London Office

Survey held at Middlesbrough-on-Tees Date, first Survey 23rd Aug 1900 Last Survey 16th Aug 1901

on the S. S. "Lizzie"

built at Fevgs. Arendal By whom built Fevgs Jernsteilsbyggeri When built 1901

made at Middlesbrough By whom made Richardsons Westgarth & Co Ltd when made 1901

made at ditto By whom made ditto when made 1901

red Horse Power Owners C Ford Port belonging to Landskrona

Horse Power as per Section 28 127 Is Refrigerating Machinery fitted no Is Electric Light fitted no

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

Cylinders 14"-27"-45" Length of Stroke 33" Revs. per minute 8.80 Dia. of Screw shaft 9 3/4 Lgth. of stern bush 3'-9"

Tunnel shaft 8 1/2" Dia. of Crank shaft journals 9" Dia. of Crank pin 9" Size of Crank webs 13 1/2 x 6 1/2 Dia. of thrust shaft under

9" Dia. of screw 12'-6" Pitch of screw 12'-6" No. of blades 4 State whether moveable no Total surface 49 sq. ft.

Feed pumps 2 Diameter of ditto 2" Stroke 18" Can one be overhauled while the other is at work yes

Bilge pumps 2 Diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work yes

Donkey Engines 2 Sizes of Pumps Feed. 4 1/2 x 3 1/4. Ballast 6 x 6 1/6 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Three 2 1/2" In Holds, &c. Fore Hold two 2 1/2"

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 4"

Are the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes 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

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

Are the pipes carried through the bunkers none How are they protected see letter 9.10.01

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

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

Were the 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 upper grating

HEATERS, &c.—(Letter for record (R.)) Total Heating Surface of Boilers 2024 sq. ft. Is forced draft fitted no

Description of Boilers One Cylind. Mult. Single ended Working Pressure 140 Tested by hydraulic pressure to 340

Can each boiler be worked separately one only Area of fire grate in each boiler 60 sq. ft. No. and Description of safety valves (to

each boiler Two direct Spring Area of each valve 9.6 sq. in. Pressure to which they are adjusted 175 lbs Are they fitted with easing gear yes

Least distance between boilers or uptakes and bunkers or woodwork 11 1/2" Mean dia. of boilers 14'-10 3/16" Length 10'-6" Material of shell plates Steel

Range of tensile strength 27/32 Are they welded or flanged no Descrip. of riveting: cir. seams D.R. Lap long. seams D. Butt Straps

Number of rivet holes in long. seams 1 3/16" Pitch of rivets 7 1/8" one row 3 1/16" two rows Lap of plates or width of butt straps 1'-6" x 1 1/2" thick

Strength of strength of longitudinal joint rivets 88.3 Working pressure of shell by rules 170.1 lbs Size of manhole in shell 16" x 12"

Compensating ring 35" x 28" x 1 3/16" No. and Description of Furnaces in each boiler 3 Deightons Material Steel Outside diameter 46"

Thickness of plain part top 7'-0" Thickness of plates crown 17 Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 177.9 Combustion chamber plates: Material Steel Thickness: Sides 19/32 Back 5/8 Top 5/8 Bottom 15/16

Number of stays to ditto: Sides 8" x 8 3/4" Back 9 1/4" x 8 1/2" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 171.1

Material of stays Iron & Steel Diameter at smallest part 1.63" Area supported by each stay 78.6 sq. in. Working pressure by rules 197.5 End plates in steam space:

Material Steel Thickness 1" Pitch of stays 17 3/4" x 15" How are stays secured D. Nuts & W. Working pressure by rules 175.4 Material of stays Steel

Diameter at smallest part 2.53 Area supported by each stay 266 sq. in. Working pressure by rules 194.8 Material of Front plates at bottom Steel

Thickness 13/16 Material of Lower back plate Steel Thickness 13/16 Greatest pitch of stays 14" x 8 1/2" Working pressure of plate by rules 170

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

Distance across wide water spaces 14 1/4" Working pressures by rules 176.5 B 248.8 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 9" x 1 5/8" Length as per rule 30" Distance apart 9" Number and pitch of Stays in each two 8 1/2"

Working pressure by rules 224.4 Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

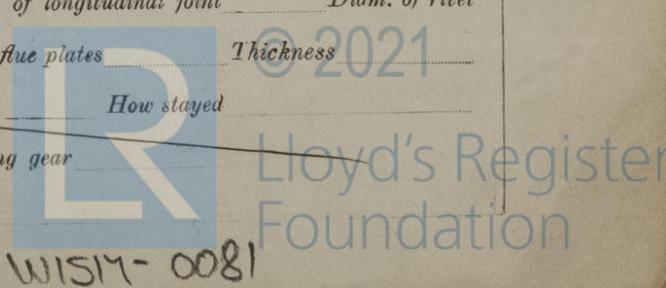
separately

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

Strengthened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



W1517-0081

DONKEY BOILER— No. *One*. Description *Vertical Cross tube*.
 Made at *Stockton* By whom made *Sudron & Co* When made *7-1901* Where fixed *Stokehold*.
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *2523* Fire grate area *31 ft²* Description of safety valves *Direct Spring*
 No. of safety valves *one* Area of each *15.97* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *4'-0"* Length *14'-0"* Material of shell plates *Steel* Thickness *7/16"* Range of tensile strength *27/32* Descrip. of riveting long. seams *D. R. Lap* Dia. of rivet holes *13/16* Whether punched or drilled *punched* Pitch of rivets *2 3/4*
 Lap of plating *4 1/4* Per centage of strength of joint *100* Rivets *43* Thickness of shell crown plates *9/16"* Radius of do. *5'-9"* No. of Stays to do. *8*
 Dia. of stays. *1 3/4"* Diameter of furnace Top *5'-3"* Bottom *6'-4 1/2"* Length of furnace *5'-9"* Thickness of furnace plates *3/16"* Description of joint *Lap* Thickness of furnace crown plates *9/16"* Stayed by Working pressure of shell by rules *81 lbs*
 Working pressure of furnace by rules *83 lbs* Diameter of uptake *16"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *2 Con. Rod Top End - 2 Bottom End - 2 Main Bearing - 1 set Coupling Bolts & Nuts. 6 Junk Ring Bolts. 1 Feed Check Valve 1 set of valves for each Feed, Bilge, Air, & Circulating Pumps. 2 Piston rings for each H.P. & M.P. 2 Piston Valve Rings. 2 Safety Valve Springs. Bolts & Nuts. For RICHARDSONS, WESTGARTH & Co. Ltd. Propeller & Tail shaft*
 The foregoing is a correct description,

Manufacturer. *Jimmistrick*
 Main Engines & Boilers

MANAGING DIRECTOR.

Dates of Survey while building
 During progress of work in shops— *1900 Aug 1 Sept 4 Oct 9 Nov 13 Dec 6 1901 Jan 9 Feb 8 Mar 9 Apr 5 May 10*
 During erection on board vessel— *June 11 July 5 Aug 12*
 Total No. of visits *102*

Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *Stock Size*

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

Material of screw shaft *Iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no liners* *Cedervall's Patent lubricating box fitted*
 Is the after end of the ~~stern~~ *stern tube* 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 *✓* If two liners are fitted, is the shaft lapped or protected between the liners *✓*

This vessels Engines and Boilers have been constructed under special survey in accordance with rule requirements. When completed and fitted on board they were tried under steam with satisfactory results. The materials and workmanship are good and efficient. They are eligible in my opinion to have the notation L.M.C. 8-01 inserted in the Society's Register Book

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.01.

C.M.
2.9.01.

R.S.
2.9.01

The amount of Entry Fee... £ *2* : *0* : *0* When applied for, *29 Aug 1901*
 Special ... £ *19* : *1* : *0*
 Donkey Boiler Fee ... £ *-* : *-* : *-* When received, *31 Aug 1901*
 Travelling Expenses (if any) £ *-* : *-* : *-*

Richard D. Shilston
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. SEP 3 1901

Assigned

+ LMC 8.01

MACHINERY CERTIFICATE WRITTEN.



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Certificates (if required) to be sent to Messrs Richardson Westgarth & Co. Ltd. Middlesbrough

The Surveyors are requested not to write on or below the space for Committee's Minute.