

REPORT ON MACHINERY.

No. 83641

Received at London Office 26-10-20

Writing Report

When handed in at Local Office

Port of Spawick

Survey held at Great Yarmouth

Date, First Survey 5th March 1919 Last Survey 5th Oct 1920

on the Steel Screw Lug "St. Aristell" (Rescue Type)

(Number of Visits 45)

Tons } Gross
Net

Built at Go Yarmouth By whom built Crabtree & Co Ltd No 175 When built 1920

Engines made at Go Yarmouth By whom made Crabtree & Co Ltd No 568 when made 1920

Engines made at Stockton By whom made Riley Bros Ltd Nos 5167 } when made 1919 Fitted 1920

Indicated Horse Power Owners Admiralty Port belonging to London

Horse Power as per Section 28 208 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

No. of Cylinders 18 1/4 - 28 1/2 - 48 1/2 Length of Stroke 28" Revs. per minute as per rule 9.64" Material of Steel

screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight

propeller boss Yes If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part

in the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two

are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 42"

Tunnel shaft as per rule 8.52" Dia. of Crank shaft journals as per rule 8.95" Dia. of Crank pin 9" Size of Crank webs 16 1/4 x 6 1/8" Dia. of thrust shaft under

as fitted 8 3/4" Dia. of screw 10-7" Pitch of Screw 12-0" No. of Blades 4 State whether moveable No Total surface 34 sq ft

Feed pumps two Diameter of ditto 3 1/8" Stroke 13 1/2" Can one be overhauled while the other is at work Yes

Bilge pumps two Diameter of ditto 3 1/8" Stroke 13 1/2" Can one be overhauled while the other is at work Yes

Donkey Engines two & 2 1/2 sizes of Pumps G.S. 6" 4 1/2" 6" Duplex No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room One 2 1/2" in Engine Room, One 2 1/2" Boiler room In Holds, &c. One 3" in fore & after peaks, & one 3" in

each compartment. All Suctions connected to Ejector & valves operated from deck.

Bilge Injections one sizes 6" Connected to condenser, or to circulating pump opp. Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"

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

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

Are the pipes carried through the bunkers Aux exhaust to atmosphere How are they protected Lagged & Iron casing

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

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Yes

Boilers, &c.—(Letter for record S) Manufacturers of Steel Messrs. J. Spencer & Sons

Heating Surface of Boilers 3384 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Two Single Ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 9-9-19 No. of Certificate 6029

Can each boiler be worked separately Yes Area of fire grate in each boiler 43.5 sq ft No. and Description of Safety Valves to

each boiler Two Spring Loaded Area of each valve 7.06 sq ft Pressure to which they are adjusted 183 lbs Are they fitted with easing gear Yes

Least distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers _____ Length _____ Material of shell plates _____

Range of tensile strength _____ Are the shell plates welded or flanged _____ Descrip. of riveting: cir. seams _____

Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Lap of plates or width of butt straps _____

Angles of strength of longitudinal joint _____ Working pressure of shell by rules _____ Size of manhole in shell _____

Compensating ring _____ No. and Description of Furnaces in each boiler _____ Material _____ Outside diameter _____

Thickness of plain part _____ Thickness of plates _____ Description of longitudinal joint _____ No. of strengthening rings _____

Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____

Working pressure of stays to ditto: Sides _____ Back _____ Top _____ If stays are fitted with nuts or riveted heads _____ Working pressure by rules _____

Area of stays _____ Area at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ End plates in steam space: _____

Thickness _____ Pitch of stays _____ How are stays secured _____ Working pressure by rules _____ Material of stays _____

Area supported by each stay _____ Working pressure by rules _____ Material of Front plates at bottom _____

Material of Lower back plate _____ Thickness _____ Greatest pitch of stays _____ Working pressure of plate by rules _____

Pitch of tubes _____ Material of tube plates _____ Thickness: Front _____ Back _____ Mean pitch of stays _____

Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and _____

Length as per rule _____ Distance apart _____ Number and pitch of stays in each _____

Steps dome: description of joint to shell _____ % of strength of joint _____

Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____

Working pressure of shell by rules _____ Crown plates _____ Thickness _____ How stayed _____

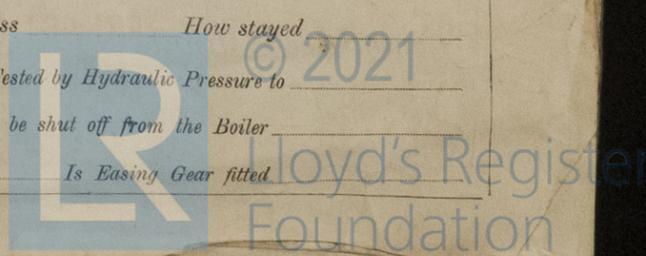
Superheater. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____

Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

No 10497
Mr. J. Spencer & Sons
The Middleburgh

012501-012507-0073



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 con rod top end, 2 con rod bottom end bolts, 2 main bearing bolts & nuts, 1 pair eccentric strap bolts & nuts. 6 couple bolts & nuts. 2 bilge & 2 feed pump valves. 2 cwt of assorted bolts & nuts of various sizes. 2 safety valve springs. 1 air pump rod. 1 set of spring rings for each piston. 4 escape valve springs. 24 plain & 4 stay bolts, 1 set of white metal thrust faces complete. Eccentric rod & strap. One pair main bearing brasses. etc

The foregoing is a correct description,

GRASTRUB & CO., LTD.

J. A. Chamberlain.

Manufacturer.

Dates of Survey while building: During progress of work in shops (1919) May 5-11, Apr 1-11-20, May 3-13, June 6-13-25, July 2, Aug 13-21, Sep 12-22-25-31, Nov 12-20-26, Dec 31 (1920) Jan 8-14, Feb 6-19-20-21-27, March 2-5-12-25, Apr 9, May 6, June 20, July 1-15-26, Sep 7-20-21-23-24-29, Oct 5. Total No. of visits *45.*

Is the approved plan of main boiler forwarded herewith?

Dates of Examination of principal parts: Cylinders 2-7-19, 31-10-19; Slides 20-11-19; Covers 13-5-19, 31-10-19; Pistons 13-5-19, 31-10-19; Rods 13-5-19, 31-10-19; Connecting rods 25-6-19, 31-10-19; Crank shaft 31-10-19; Thrust shaft 12-9-19, 31-10-19; Tunnel shafts 31-10-19; Screw shaft 2-7-19, 12-9-19; Propeller 26-10-19; Stern tube 23-9-19, 26-11-19; Steam pipes tested Part 80-6-20; Engine and boiler seatings 26-11-19; Engines holding down bolts 6-5-20.

Completion of pumping arrangements 23-9-20; Boilers fixed 6-5-20; Engines tried under steam 23-9-20.

Completion of fitting sea connections 8-1-20; Stern tube 8-1-20; Screw shaft and propeller 8-1-20.

Main boiler safety valves adjusted 23-9-20; Thickness of adjusting washers For P 1 1/2" S 1 1/2", AFT P 1 1/2" S 5/16"

Material of Crank shaft *Steel* Identification Mark on Do. *4865-JRW* Material of Thrust shaft *Steel* Identification Mark on Do. *27*

Material of Tunnel shafts *Steel* Identification Marks on Do. *14 A67* Material of Screw shafts *Steel* Identification Marks on Do. *46*

Material of Steam Pipes *Steel & Copper* Test pressure *Open made & tested at Birmingham & Nant*

Is an installation fitted for burning oil fuel? *No* Is the flash point of the oil to be used over 150°F?

Have the requirements of Section 49 of the Rules been complied with?

Is this machinery duplicate of a previous case? *Yes* If so, state name of vessel *Rescue Tugs.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel*

has been built under Special Survey, the materials and workmanship are good. The Engines & Boilers were examined whilst being installed in vessel, afterwards tried under full working conditions, and found satisfactory.

The machinery of this vessel is in a good & efficient condition & eligible in our opinion to be classed with the record L.M.C. 10-20 in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.20 FD

R. M. G. 28/10/20

The amount of Entry Fee ... £ : : When applied for, 26 OCT 1920 To Admiralty
Special Reso Bdr fee £ 64 = 16 = 0
Donkey Boiler Fee ... £ 53 : 10 : 4 When received, 15-12-19 20 7/10
Travelling Expenses (if any) £ : :
Committee's Minute FRI. OCT. 29 1920

Robert Rae
Engineer Surveyor to Lloyd's Register of Shipping,

Assigned *+ L.M.C. 10.20 F.D.*

