

# REPORT ON MACHINERY.

No. 83810

of writing Report *3<sup>rd</sup> Dec 1920* When handed in at Local Office *14 DEC 1920* Port of *Ipwich*  
 in Survey held at *Gt Yarmouth* Date, First Survey *May 6<sup>th</sup> 1920* Last Survey *1<sup>st</sup> Dec 1920*  
 Book. on the *S.S. "Crossbill"* (Number of Visits *20*)

ter Built at *Gt Yarmouth* By whom built *Crabtree & Co Ltd* No 179 Tons { Gross }  
 nes made at *Gt Yarmouth* By whom made *Crabtree & Co Ltd* No 575 when made *1920*.  
 ert made at *Hebburn* By whom made *Palmers Shipbuilding & Iron Co Ltd* when made *1920*.  
 stered Horse Power Owners *R. & W. Paul Ltd* *Ipwich* Port belonging to *Ipwich*  
 Horse Power as per Section 28 *62* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *No*

INES, &c.—Description of Engines *Compound* No. of Cylinders *2* No. of Cranks *2*  
 of Cylinders *16" x 34"* Length of Stroke *23"* Revs. per minute *77 1/4* as per rule *77 1/4* as fitted *73 1/4* Material of screw shaft *Steel*  
 e 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  
 e 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  
 en 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 *2' 8"*  
 of Tunnel shaft as per rule *Yes* Dia. of Crank shaft journals as per rule *7 1/2"* as fitted *7 1/2"* Dia. of Crank pin *7 1/2"* Size of Crank webs *10" x 5"* Dia. of thrust shaft under  
 s *7 1/2"* Dia. of screw *8" x 8"* Pitch of Screw *9" x 9"* No. of Blades *4* State whether moveable *No* Total surface *26 sq ft*  
 of Feed pumps *one* Diameter of ditto *2 1/2"* Stroke *10 7/8"* Can one be overhauled while the other is at work *Yes*  
 of Bilge pumps *one* Diameter of ditto *2 1/2"* Stroke *10 7/8"* Can one be overhauled while the other is at work *Yes*  
 of Donkey Engines *one* Sizes of Pumps *5 1/4" x 3 1/2" x 5" Duplex* No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room *Two 2" and one 2" donkey pump direct in Holds, &c. Three 2"*  
 e Bilge Injections *1* sizes *3"* Connected to condenser, or to circulating pump *cp.* Is a separate Donkey Suction fitted in Engine room & size *Yes 2"*  
 ll 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*  
 ll connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Cocks & valves*  
 hey 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*  
 hey 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*  
 pipes are carried through the bunkers *None* How are they protected *Yes*  
 ll Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*  
 he Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *Yes*  
 e Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Yes*

ERS, &c.—(Letter for record *S.*) Manufacturers of Steel *John Spencer & Sons Ltd*  
 Heating Surface of Boilers *1120 sq ft* Is Forced Draft fitted *No* No. and Description of Boilers *One Single Ended*  
 ing Pressure *140 lbs per sq in* Tested by hydraulic pressure to *250 lbs per sq in* Date of test *6-8-20* No. of Certificate *9445*  
 each boiler be worked separately *Yes* Area of fire grate in each boiler *35 sq ft* No. and Description of Safety Valves to  
 boiler *3 Spring Loaded* Area of each valve *4' 9"* Pressure to which they are adjusted *144 lbs per sq in* Are they fitted with easing gear *Yes*  
 est distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers Length Material of shell plates  
 ness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams  
 seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps  
 entages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell  
 f compensating ring No. and Description of Furnaces in each boiler Material Outside diameter  
 h of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings  
 ing pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
 of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules  
 ial of stays Area at smallest part Area supported by each stay Working pressure by rules End plates in steam space:  
 ial Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays  
 at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom  
 erness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules  
 ter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays  
 across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and  
 erness of girder at centre Length as per rule Distance apart Number and pitch of stays in each  
 ing pressure by rules Steam dome description of joint to shell % of strength of joint  
 ter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes  
 of rivets Working pressure of shell by rules Crown plates Thickness How stayed  
 REHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to  
 f Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler  
 ter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

See further particulars  
 Report No 73410



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? ☒

SPARE GEAR. State the articles supplied:— *2 con rod top & 2 bottom end bolts & nuts. 2 main bearing bolts & nuts. 1 set coupling bolts & nuts. 1 set feed & bilge pump valves. A quantity of assorted bolts & nuts. Iron of various sizes*

The foregoing is a correct description,

CRABTREE & CO. LTD

*J. A. Chamberlain.* Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *1920 May 6-28. June 3-29.30 July 14-26 Aug 10-16.24-27. Sep 1-29. Oct 5-26 Nov 4-15.23-24 Dec 1*  
{ During erection on board vessel - - - }  
Total No. of visits *20*

Is the approved plan of main boiler forwarded herewith *Yes.*

Dates of Examination of principal parts—Cylinders *14-5-20 3-6-20 14-7-20* Slides *14-5-20 26-7-20* Covers *14-5-20 26-7-20* Pistons *14-5-20 26-7-20* Rods *14-5-20 26-7-20*  
Connecting rods *14-5-20 26-7-20* Crank shaft *26-7-20* Thrust shaft *13-9-20* Tunnel shafts *✓* Screw shaft *13-6-20 10-8-20 24-8-20* Propeller *16-6-20 24-8-20*  
Stern tube *10-8-20* Steam pipes tested *✓* Engine and boiler seatings *13-9-20* Engines holding down bolts *26-10-20*  
Completion of pumping arrangements *23-11-20* Boilers fixed *29-9-20* Engines tried under steam *23-11-20*  
Completion of fitting sea connections *1-9-20* Stern tube *1-9-20* Screw shaft and propeller *1-9-20*  
Main boiler safety valves adjusted *23-11-20* Thickness of adjusting washers *P 29/64, S 28/64*

Material of Crank shaft *Steel* Identification Mark on Do. *5060 JRW.* Material of Thrust shaft *Steel* Identification Mark on Do. *163 abt.*

Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shaft *Steel* Identification Marks on Do. *162 abt.*

Material of Steam Pipes *Copper.* Test pressure *280 lbs.*

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 *No* If so, state name of vessel ☒

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under Special Survey, in accordance with the approved plans & the Society's Rules. The workmanship & materials are good and sound. The engines together with the boiler have been examined whilst being installed in the vessel, afterwards tried under full power working conditions and found satisfactory. Boiler examined under steam and safety valves adjusted.*

*The Machinery of this vessel is now in good working condition and eligible in our opinion to have the Record L.M.C. 12.20 in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12.20*

*Roll*

*20/12/20*

The amount of Entry Fee ... £ *1* : - - - When applied for, *14 DEC 1920*  
Special ... £ *8* : *14/6*  
Donkey Boiler Fee ... £ *5* : *6* : *6* When received, *23.2.21 JSW*  
Travelling Expenses (if any) £ *5* : *6* : *6*

Committee's Minute

Assigned

TUE. JAN. 4 1921

*+ L.M.C. 12.20*

*Robert Rae & A.E. Farminer*  
Engineer Surveyor to Lloyd's Register of Shipping.



© 2020

Lloyd's Register Foundation

Rpt. 5a.

Date of writing Report

No. in Survey he Reg. Book.

on the

Master

Engines made at

Boilers made at

Registered Horse P

MULTITUBU

(Letter for record

Boilers *1. Hony*

No. of Certificate

safety valves to ea

Are they fitted wi

Smallest distance

Material of shell

Descrip. of riveti

Lap of plates or

rules *140 Ws*

boiler *2 Pla*

Description of lon

plates: Material

Top *9 1/2 x 8 1/2*

smallest part *1*

Pitch of stays *16*

Area supported

Lower back plat

Pitch of tubes *L*

water spaces

girder at centre

Working pressu

Diameter

Pitch of rivets

SUPERHEA

Date of Test

Diameter of Safe

Is a Report also sent on the Hull of the Ship?

Dates of Survey while building { During work on board

GENERAL

mal

Survey F

Travelling

Committee

Assigned