

# 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 Received at London Office 14 DEC 1920  
 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 } Net }  
 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 as per rule 774 Material of } 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 ✓ 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 ✓  
 e are fitted, is the shaft lapped or protected between the liners Yes If two  
 of Tunnel shaft as per rule ✓ Dia. of Crank shaft journals as per rule 7 1/2" Dia. of Crank pin 7 1/8" Size of Crank webs 10" x 5" Dia. of thrust shaft under  
 s 7 1/8" Dia. of screw 8" x 8" Pitch of Screw 9" x 9" No. of Blades 4 State whether moceable No Total surface 26 sq  
 of Feed pumps one Diameter of ditto 2 1/2" Stroke 10 7/8" Can one be overhauled while the other is at work ✓  
 of Bilge pumps one Diameter of ditto 2 1/2" Stroke 10 7/8" Can one be overhauled while the other is at work ✓  
 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"  
 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 ✓  
 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 ✓ Is it fitted with a watertight door ✓ worked from ✓

ERS, &c.—(Letter for record S.) Manufacturers of Steel John Spencer & Sons Ltd  
 Heating Surface of Boilers 1120 Is Forced Draft fitted No No. and Description of Boilers One Single Ended  
 ing Pressure 140 lbs per sq Tested by hydraulic pressure to 250 lbs per sq Date of test 6-8-20 No. of Certificate 9445  
 ach boiler be worked separately ✓ Area of fire grate in each boiler 35 sq No. and Description of Safety Valves to  
 boiler 3 Spring Loaded Area of each valve 4.9 sq Pressure to which they are adjusted 144 lbs per sq 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 \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of plates \_\_\_\_\_ 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 \_\_\_\_\_  
 rial of stays \_\_\_\_\_ Area at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ End plates in steam space: \_\_\_\_\_  
 rial \_\_\_\_\_ 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 \_\_\_\_\_  
 ness \_\_\_\_\_ 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 \_\_\_\_\_  
 ession 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 \_\_\_\_\_  
 RHEATER. 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  
 in Report No. 75410



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 & helix pump valves. A quantity of assorted bolts & nuts. Iron of various sizes*

The foregoing is a correct description,

GRABTREE & 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, 31. 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* Slides *14-5-20* Covers *14-5-20* Pistons *14-5-20* Rods *14-5-20*  
*3-6-20* *26-7-20* *26-7-20* *26-7-20* *26-7-20*  
*14-7-20* *23-6-20* *13-9-20* *13-9-20* *13-9-20*

Connecting rods *14-5-20* Crank shaft *26-7-20* Thrust shaft *13-9-20* Tunnel shafts *✓* Screw shaft *13-6-20* Propeller *16-8-20*  
*26-7-20* *24-8-20* *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 ab7*

Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shaft *Steel* Identification Marks on Do. *162 ab7*

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 boilers 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  
J.M.*

The amount of Entry Fee ... £ *1* : -  
Special ... £ *4* : *4/6*  
Donkey Boiler Fee ... £ :  
Travelling Expenses (if any) £ *5* : *6* : *6* *23.2.21 J.S.W.*

Committee's Minute *TUE. JAN. 4 1921*  
Assigned *+ L.M.C. 12.20*

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



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. Harvey*  
No. of Certificate  
safety valves to ea  
Are they fitted wit  
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 1/2*  
Pitch of stays *16*  
Area supported  
Lower back plat  
Pitch of tubes  
water spaces  
girder at centre  
Working pressu  
Diameter  
Pitch of rivets  
SUPERHEA  
Date of Test  
Diameter of Safe  
Dates of Survey while building { Dur  
while { Dur  
building } bo  
GENERAL  
mal  
Survey F  
Travelling  
Committe  
Assigned

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

CERTIFICATE WRITTEN