

REPORT ON MACHINERY.

No. 28178

Received at London Office 21 OCT. 1921

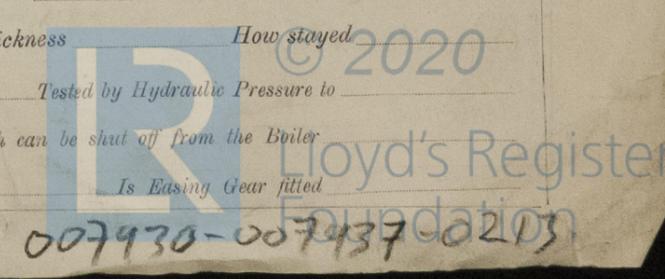
Date of writing Report 12-10-1921 When handed in at Local Office 21 OCT 1921 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey July 1st 1920 Last Survey 15th Oct 1921
 Reg. Book. 11975 on the new steel S/S "CHARTERED" (Number of Visits 38) Gross Tons 2021
 Master Howden Built at Sunderland By whom built J. Brown & Sons Ltd (S/S No 167) When built 1921
 Engines made at Sunderland By whom made N.E. Marine Eng Co Ltd (No 2374) when made 1921
 Boilers made at Sunderland By whom made N.E. Marine Eng Co Ltd (No 2374) when made 1921
 Registered Horse Power _____ Owners Gas Light & Coke Co Port belonging to London
 Nom. Horse Power as per Section 28 214 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
 Dia. of Cylinders 20 1/2" 33" 54" Length of Stroke 39" Revs. per minute 76 Dia. of Screw shaft 11 1/8" Material of screw shaft as per rule 11 1/8"
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes 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 no If the liner does not fit tightly at the port between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes
 If two liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 3-11 1/2"
 Dia. of Tunnel shaft 10-33" Dia. of Crank shaft journals 10-83" Dia. of Crank pin 11" Size of Crank webs 16 1/4" x 7" Dia. of thrust shaft under collars 11"
 Dia. of screw 14-6" Pitch of Screw 14-6" No. of Blades 4 State whether moveable no Total surface 650 ft
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 1-9" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 1-9" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 5 1/2" & 3 1/2" x 5" 9" & 11" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 @ 2 1/2" In Holds, &c. No 2 hold - 2 @ 2 1/2" No 4 hold - 2 @ 2 1/2"
 No. of Bilge Injections 1 sizes 4 1/2" Connected to condenser, or to circulating pump 6 P. Is a separate Donkey Suction fitted in Engine room & size yes, 2 1/2"
 Are all 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
 What pipes are carried through the bunkers forward hold suction How are they protected under timber boards
 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 none Is it fitted with a watertight door no worked from no

BOILERS, &c.—(Letter for record (5)) Manufacturers of Steel John Spencer & Sons Ltd.
 Total Heating Surface of Boilers 35240 ft Is Forced Draft fitted no No. and Description of Boilers two, single ended marine
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 16-11-20 No. of Certificate 3734
 Can each boiler be worked separately yes Area of fire grate in each boiler 460 ft No. and Description of Safety Valves to each boiler two, direct opening
 Area of each valve 4.90" Pressure to which they are adjusted 185 Are they fitted with easing gear yes
 Smallest distance between boilers 5-0" Mean dia. of boilers 14-0" Length 10-6" Material of shell plates steel
 Thickness 1 1/8" Range of tensile strength 29-33 tons are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR
 long. seams DRS, TR Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 9 13/16" Lap of plates or width of butt straps 19 1/4"
 Per centages of strength of longitudinal joint rivets 87.6 Working pressure of shell by rules 180 Size of manhole in shell 16" x 12"
 plate 87.27 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 3-2 3/4"
 Length of plain part top 16-2 3/8" Thickness of plates crown 23" Description of longitudinal joint welded No. of strengthening rings none
 bottom 5-7" bottom 32" Working pressure of furnace by the rules 182 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 25/32" Top 3/4" Bottom 3/4"
 Pitch of stays to ditto: Sides 11 1/4" x 9" Back 11 1/4" x 9 3/4" Top 9" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181
 Material of stays steel Area at smallest part 2.030" Area supported by each stay 1010" Working pressure by rules 183 End plates in steam space: Material steel Thickness 1 5/16" Pitch of stays 18" x 24" How are stays secured BN & W Working pressure by rules 181 Material of stays steel
 Area at smallest part 7.670" Area supported by each stay 4320" Working pressure by rules 184 Material of Front plates at bottom steel
 Thickness 13/16" Material of Lower back plate steel Thickness 29/32" Greatest pitch of stays 14 3/4" x 9 3/4" Working pressure of plate by rules 182
 Diameter of tubes 3 1/4" Pitch of tubes 4 3/4" x 4 5/8" Material of tube plates steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 10 1/2"
 Pitch across wide water spaces 4 1/2" + 5/8" Working pressures by rules 185 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 208" x 1 1/8" Length as per rule 31" Distance apart 9" Number and pitch of stays in each 2 @ 9"
 Working pressure by rules 194 Steam dome: description of joint to shell _____ % of strength of joint _____
 Diameter _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____
 Pitch of rivets _____ Working pressure of shell by rules _____ Crown plates _____ Thickness _____ How stayed _____

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

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?



IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two connecting rod top and bottom end bolts and nuts, two main bearing bolts, one set of coupling bolts, one set of feed and lilge pump valves, iron and bolts of various sizes.*

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO^Y LD

C. T. Adams.

Manufacturers.

Dates of Survey while building	During progress of work in shops --	1920 July 1. Aug. 16. 20. 26. Sep. 2. 16. 18. Oct. 6. 12. 22. Nov. 1. 8. 25. 30. Dec. 8. 13. 23-19. 21. Jan. 5. 25.	
		During erection on board vessel --	27. Feb. 25. Mar. 11. Apr. 2. 11. June 10. 11. July 13. 20. Sep. 19. 21. 22. 23. 27. Oct. 3. 4. 6. 13. 15.
			Total No. of visits

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

Dates of Examination of principal parts—Cylinders *12-10-20* Slides *25-2-21* Covers *12-10-20* Pistons *8-11-20* Rods *23-12-20*

Connecting rods *8-12-20* Crank shaft *25-11-20* Thrust shaft *5-1-21* Tunnel shafts *none* Screw shaft *21-9-21* Propeller *14-3-21*

Stern tube *10-6-21* Steam pipes tested *21, 22 & 27-9-21* Engine and boiler seatings *19-9-21* Engines holding down bolts *3-10-21*

Completion of pumping arrangements *13-10-21* Boilers fixed *27-9-21* Engines tried under steam *4-10-21*

Completion of fitting sea connections *19-9-21* Stern tube *19-9-21* Screw shaft and propeller *23-9-21*

Main boiler safety valves adjusted *4-10-21* Thickness of adjusting washers *Port. boiler, - both 1 1/2". Starboard boiler F 1 1/2". A 1 1/2"*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S NO 2374* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S NO 2374*

Material of Tunnel shafts *none* Identification Marks on Do. *L.C.P. 25-11-20* Material of Screw shafts *Super Iron* Identification Marks on Do. *L.C.O.*

Material of Steam Pipes *solid drawn copper* Test pressure *400 lbs per sq"*

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 *s/s "Borde". Sld Rpt N° 28050*

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

The materials and workmanship are good. The machinery has been constructed under special survey and is eligible in my opinion for classification and the record + L.M.C. 10, 21.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. - 10, 21.

L. G. 26/10/21. ARK

The amount of Entry Fee ...	£ 4 :	When applied for.
Special ...	£ 53 : 10	21 OCT 1921
Donkey Boiler Fee ...	£ :	When received.
Travelling Expenses (if any) £	:	9. 11. 19

L. C. Davis.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. OCT. 23 1921*
Assigned *+ L.M.C. 10, 21*

MACHINERY CERT
WRITTEN.



Certificate (if required) to be sent to SUNDERLAND.

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