

Rpt. 5a.

REPORT ON BOILERS.

No. 69638.

Received at London Office

2/2/17

Date of writing Report 17 Feb 1917 When handed in at Local Office 20 Feb 1917 Port of NEWCASTLE ON TYNE

No. in Survey held at Newcastle-on-Tyne Date, First Survey 10 July '16 Last Survey 2nd April 1917
Reg. Book. on the S.S. "LITHIUM" (New Cochrane steam h^o 729 vessel) Tons } Gross 340
Net

Master Built at Selby By whom built Cochrane steam When built 1914.
Engines made at Horth Sheds By whom made Shields Eng. & Dry Dock Coy L^{td} When made 1914.
Boilers made at Hellenon-on-Tyne By whom made Palmers S^{rs} & Coy L^{td} When made 1914.
Registered Horse Power Owners United Alkali Co. L^{td} Port belonging to Liverpool

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.—Manufacturers of Steel Spencer steam L^{td}

(Letter for record 5.) Total Heating Surface of Boilers 1175 sq. ft. Is forced draft fitted No. and Description of Boilers One 2: 2000 lbs. pressure engine Working Pressure 180 lbs. Tested by hydraulic pressure to 260 lbs. Date of test 16/2/17.

No. of Certificate 8925. Can each boiler be worked separately Area of fire grate in each boiler No. and Description of safety valves to each boiler

Are they fitted with easing gear In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers 12' 5" Length 10' 0"

Material of shell plates Steel Thickness 1" Range of tensile strength 29 to 33 tons Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams Lap & Double long. seams D.S.S. Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7/16" 3-4/8

Lap of plates or width of butt straps 15 3/8" Per centages of strength of longitudinal joint rivets 88.6 plate 85.4 Working pressure of shell by rules 184 lbs

Size of manhole in shell 16" x 12" Size of compensating ring 7" x 1" No. and Description of Furnaces in each boiler 2: Morrison Material Steel Outside diameter 42 3/8" Length of plain part top 6' 3" Thickness of plates crown 3/8" bottom 7/16"

Description of longitudinal joint head No. of strengthening rings four Working pressure of furnace by the rules 205 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1" Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8 1/2" x 8 1/2"

Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186 lbs. Material of stays Steel Area Diameter at smallest part 2.03" Area supported by each stay 72.2" Working pressure by rules 253 lbs. End plates in steam space: Material Steel Thickness 1 3/4"

Pitch of stays 1 1/2" x 1 1/2" How are stays secured Double nuts Working pressure by rules 185 lbs. Material of stays Steel Area Diameter at smallest part 6.1"

Area supported by each stay 306" Working pressure by rules 206 lbs. Material of Front plates at bottom Steel Thickness 1" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 189 lbs. Diameter of tubes 3 1/2"

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 1/2" Pitch across wide water spaces 15" Working pressures by rules 182 lbs 223 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2" x 12" Length as per rule 28 1/2" Distance apart 8 1/2" Number and pitch of Stays in each 2: 8 1/2"

Working pressure by rules 238 lbs. 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 holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened 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

The foregoing is a correct description,
J. Cameron Manufacturer.

Dates of Survey } During progress of work in shops - 10.14.21.31 Aug 9.14 Sep 1.25.29 Oct. 12.16.23. Is the approved plan of boiler forwarded herewith Yes.
while building } During erection on board vessel - - - - -
Total No. of visits 26

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This main boiler was built under special survey and the materials and workmanship are good on completion it was tested by hydraulic pressure and found tight and sound.

Survey Fee ... £ 3 : 18 : } When applied for, 20 FEB 1917
Travelling Expenses (if any) £ : : } When received, 20/2/17 1917

Wm. Austin.
Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute FRI. 13 APR. 1917
Assigned See Sub. J. Exp. No 29858

