

( 69865 )  
 No. 69639  
 2/2/17  
 MAR 1917

# REPORT ON BOILERS.

Received at London Office

Date of writing Report 17<sup>th</sup> Feb 1917 When handed in at Local Office 20<sup>th</sup> Feb 1917 Port of NEWCASTLE ON TYNE

Survey held at Newcastle on Tyne Date, First Survey 10<sup>th</sup> July 1916 Last Survey 12<sup>th</sup> May 1917

Reg. Book. on the S.S. "HELIUM" (Name of vessel)

Built at Selby By whom built Cochrane & Sons When built 1914

Engines made at Korn Shields By whom made Shields Eng. & Ship Dock Coy When made 1914

Boilers made at Helium-on-Tyne By whom made Palmer's Eng. & Ship Dock Coy When made 1914

Registered Horse Power Owners United Alkali Co. Ltd Port belonging to Liverpool

**MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.**—Manufacturers of Steel Spencer & Sons Ltd

Letter for record S. ) **Total Heating Surface of Boilers** 1175 sq. ft. Is forced draft fitted No. **No. and Description of**  
**Boilers** One: Cylindrical multi Single **Working Pressure** 180 lb Tested by hydraulic pressure to 260 lb Date of test 16/2/17

No. of Certificate 8926 Can each boiler be worked separately ✓ **Area of fire grate in each boiler** ✓ **No. and Description of**  
 Safety valves to each boiler ✓ **Area of each valve** ✓ **Pressure to which they are adjusted** ✓

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 31 tons Are the shell plates welded or flanged No.

Descrip. of riveting: cir. seams Lap & Double long. seams Double **Diameter of rivet holes in long. seams** 1 1/16" **Pitch of rivets** 7 1/16"

Spacing of plates or width of butt straps 15 1/8" **Per centages of strength of longitudinal joint** 88.6 **Working pressure of shell by**  
184 lb **Size of manhole in shell** 16" x 12" **Size of compensating ring** Y 1/2" x 1" **No. and Description of Furnaces in each**  
**Boiler** 2: horizontal **Material** Steel **Outside diameter** 42 1/8" **Length of plain part** 6' 3" **Thickness of plates** 9"  
**Description of longitudinal joint** Weld **No. of strengthening rings** None **Working pressure of furnace by the rules** 205 lb **Combustion chamber**  
**plates:** **Material** Steel **Thickness:** **Sides** 5" **Back** 5" **Top** 5" **Bottom** 1" **Pitch of stays to ditto:** **Sides** 8 1/2" x 8 1/2" **Back** 8 1/2" x 8 1/2"  
8 1/2" x 8 1/2" **If stays are fitted with nuts or riveted heads** Nuts **Working pressure by rules** 186 lb **Material of stays** Steel **Area**  
**Smallest part** 2.03 sq. ft. **Area supported by each stay** 3/24 sq. ft. **Working pressure by rules** 253 lb **End plates in steam space:** **Material** Steel **Thickness** 1 3/32"  
**Pitch of stays** 14 1/2" x 14 1/2" **How are stays secured** Double nuts & washers **Working pressure by rules** 155 lb **Material of stays** Steel **Area**  
**Area supported by each stay** 306 sq. ft. **Working pressure by rules** 206 lb **Material of Front plates at bottom** Steel **Thickness** 1" **Material of**  
**Lower back plate** Steel **Thickness** 5/8" **Greatest pitch of stays** 14 1/2" **Working pressure of plate by rules** 189 lb **Diameter of tubes** 5 1/2"  
**Pitch of tubes** 4 3/4" x 4 3/4" **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 lb 225 lb **Girders to Chamber tops:** **Material** Steel **Depth and thickness of**  
**Order at centre** 8 1/2" x 1 1/2" **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** 235 lb **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**  
**Plates** **Pitch of rivets** **Working pressure of shell by rules** **Diameter of flue** **Material of flue plates** **Thickness**  
**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** Yes

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

Dates 1916 During progress of Jan 10-14, 25-31, Aug 9-14, Sept 1-2, 5-29, Oct 11-12, 15-23 Is the approved plan of boiler forwarded herewith See Report 69639  
 Survey work in shops Nov: 1-21, 24-25, Dec 4-13, 27 (1917), Jan 4-15-26, Feb 8-13-16. on A 846 Boiler.  
 while During erection on  
 building board vessel

**Total No. of visits** 25

**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 as required by the Rules & found tight and sound.

Survey Fee ... £ 3 : 18 : 0 When applied for, 20.2.1917  
 Travelling Expenses (if any) £ : : When received, 26.4.1917 MRD

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

Committee's Minute FRI. 18 MAY. 1917  
 Assigned See Sub. A. Expt attached  
No 29868

