

# REPORT ON BOILERS.

No. 71055

Received at London Office

25 SEP 1946

Date of writing Report..... When handed in at Local Office..... 16 9 46 Port of **GLASGOW.**

No. in Reg. Book..... Survey held at **GLASGOW.** Date, First Survey..... 4. 4. 45 Last Survey **6th Sept. 1946.**

on the **S.S. "EMPIRE TEDRITA".** (Number of Visits..... 19) Tons { Gross **890.** Net **370.**

Master..... Built at **GLASGOW.** By whom built **A. & J. INGLIS, LD.** Yard No. **1314.** When built **1946.**

Engines made at **GLASGOW.** By whom made **BRITISH POLAR ENGINES LTD.** Engine No. **592** When made **1946.**

Boilers made at **CARFIN.** By whom made **ALEX. ANDERSON & SONS LTD.** Boiler No. **3933/4** When made **1945.**

Nominal Horse Power..... Owners **MINISTRY OF TRANSPORT.** Port belonging to **GLASGOW.**

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel..... **Colvilles, Ltd.,** (Letter for Record..... (s).....)

Total Heating Surface of Boilers..... **1,038 sq.ft.** Is forced draught fitted..... **No** Coal or Oil fired..... **Oil**

No. and Description of Boilers..... **Two - Marine Return Tube.** Working Pressure **180 lb/sq.in.**

Tested by hydraulic pressure to..... **320 lb** Date of test..... **28-11-46.** No. of Certificate..... **22054.** Can each boiler be worked separately..... **Yes**

Area of Firegrate in each Boiler..... No. and Description of safety valves to each boiler..... **One - 2" Double Spring.**

Area of each set of valves per boiler { per Rule..... **3.33 sq.in.** as fitted..... **6.28 sq.in.** Pressure to which they are adjusted..... **180 lb.** Are they fitted with easing gear..... **Yes**

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..... **20 inches** Is oil fuel carried in the double bottom under boilers..... **No**

Smallest distance between shell of boiler and tank top plating..... **12 inches.** Is the bottom of the boiler insulated..... **Yes**

Largest internal dia. of boilers..... **8'-0"** Length..... **8'-0"** Shell plates: Material..... **Steel** Tensile strength..... **29/33 tons.**

Thickness..... **23/32** Are the shell plates welded or flanged..... **No** Description of riveting: circ. seams { end..... **D.R.** inter..... **-**

long. seams..... **D.R. D.B.S.** Diameter of rivet holes in { circ. seams..... **15/16"** long. seams..... **15/16"** Pitch of rivets { **2 7/8"** **4.699"**

Percentage of strength of circ. end seams { plate..... **67.6** rivets..... **54.9** Percentage of strength of circ. intermediate seam { plate..... **80** rivets..... **-**

Percentage of strength of longitudinal joint { plate..... **94.5** rivets..... **-** Working pressure of shell by Rules..... **-**

combined.....

Thickness of butt straps { outer..... **5"** inner..... **3"** No. and Description of Furnaces in each Boiler..... **One - Morison.**

Material..... **Steel** Tensile strength..... **26/30 Tons** Smallest outside diameter..... **3-5 1/4"**

Length of plain part { top..... **-** bottom..... **-** Thickness of plates { crown..... **17/32"** bottom..... **-** Description of longitudinal joint..... **Welded.**

Dimensions of stiffening rings on furnace or e.c. bottom..... Working pressure of furnace by Rules..... **-**

End plates in steam space: Material..... **Steel** Tensile strength..... **26/30 tons** Thickness..... **13/16"** Pitch of stays..... **13" and 14"**

How are stays secured..... **Double Nuts and rivetted doubler.** Working pressure by Rules.....

Tube plates: Material { front..... **Steel** back..... **-** Tensile strength..... **26/30 tons** Thickness { **13/16"** **3/4"**

Mean pitch of stay tubes in nests..... **10"** Pitch across wide water spaces..... **10 1/2"** Working pressure { front..... **-** back..... **-**

Girders to combustion chamber tops: Material..... **Steel** Tensile strength..... **28/32 tons** Depth and thickness of girder.....

at centre..... **2 @ 5/8" x 6"** Length as per Rule..... **20.11/16"** Distance apart..... **7" and 8"** No. and pitch of stays.....

in each..... **2 @ 7"** Working pressure by Rules..... **-** Combustion chamber plates: Material..... **Steel**

Tensile strength..... **26/30 tons** Thickness: Sides..... **9/16"** Back..... **9/16"** Top..... **9/16"** Bottom..... **9/16"**

Pitch of stays to ditto: Sides..... **8" x 7"** Back..... **8" x 7"** Top..... **8" x 7"** Are stays fitted with nuts or riveted over..... **Yes**

Working pressure by Rules..... **-** Front plate at bottom: Material..... **Steel** Tensile strength..... **26/30 tons.**

Thickness..... **13/16"** Lower back plate: Material..... **Steel** Tensile strength..... **26/30 tons** Thickness..... **13/16"**

Pitch of stays at wide water space..... Are stays fitted with nuts or riveted over..... **-**

Working pressure..... **-** Main stays: Material..... **Steel** Tensile strength..... **28/32 tons.**

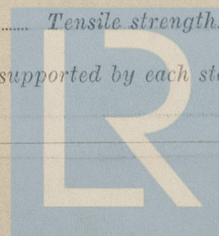
Diameter { At body of stay..... **2 1/2"** No. of threads per inch..... **6** Area supported by each stay..... **-**

Over threads..... **2 1/2"**

Working pressure by Rules..... **-** Screw stays: Material..... **Steel** Tensile strength..... **26/30 tons.**

Diameter { At turned off part..... **1 3/8"** No. of threads per inch..... **9** Area supported by each stay..... **-**

Over threads..... **1 3/8"**



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Working pressure by Rules. Are the stays drilled at the outer ends. **No** Top Margin stays: Diameter { At turned off part, or Over threads..... **1 5/8"**

No. of threads per inch. **9** Area supported by each stay. Working pressure by Rules. **9 W.G.**

Tubes: Material **S.D. Steel** External diameter { Plain..... **2 1/2"** Stay..... **2 1/8"** Thickness { **5/16"** and **3/8"** No. of threads per inch. **9**

Pitch of tubes. **3 5/8"** Working pressure by Rules. Manhole compensation: Size of opening

shell plate. **15 1/2" x 19 1/2"** Section of compensating ring. **(6 1/2" x 7") 2** No. of rivets and diameter of rivet holes. **46 - 15/16"**

Outer row rivet pitch at ends. **4.6"** Depth of flange if manhole flanged. **3"** Steam Dome: Material. **None**

Tensile strength. Thickness of shell. Description of longitudinal joint.

Diameter of rivet holes. Pitch of rivets. Percentage of strength of joint { Plate..... Rivets.....

Internal diameter. Working pressure by Rules. Thickness of crown. No. and diameter

stays. Inner radius of crown. Working pressure by Rules.

How connected to shell. Size of doubling plate under dome. Diameter of rivet holes and pitch

of rivets in outer row in dome connection to shell.

Type of Superheater. **None** Manufacturers of { Tubes..... Steel forgings..... Steel castings.....

Number of elements. Material of tubes. Internal diameter and thickness of tubes.

Material of headers. Tensile strength. Thickness. Can the superheater be shut off and

the boiler be worked separately. Is a safety valve fitted to every part of the superheater which can be shut off from the boiler.

Area of each safety valve. Are the safety valves fitted with easing gear. Working pressure as per

Rules. Pressure to which the safety valves are adjusted. Hydraulic test pressure

tubes. forgings and castings. and after assembly in place. Are drain cocks

valves fitted to free the superheater from water where necessary.

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with.

ALEX. ANDERSON & SONS LTD  
The foregoing is a correct description,  
Per *S.W.C. Fleming* Manufacturer

Dates of Survey { During progress of work in shops - - { *1945 Apr 4 Oct 17 Dec 16 22 28 1946 Jun 27* Are the approved plans of boiler and superheater forwarded herewith. **Yes**  
while building { During erection on board vessel - - - { *Apr 8-11, 24 30 Jun 1, 6 31 Jul 2 Aug 1 23 Sep 3 4* (If not state date of approval.)  
Total No. of visits. **19**

Is this Boiler a duplicate of a previous case. **Yes** If so, state Vessel's name and Report No. **"EMPIRE BELGRAVE" Report No. 69**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **These boilers have been constructed under**

**Special Survey in accordance with the Society's Rules, the approved plans and the specification**

**The materials and workmanship are good.**

**The boilers have been satisfactorily fitted on board the vessel and tried under steam. The**

**safety valves have been adjusted to 180 pounds per square inch.**

Survey Fee ... £ 6 : 18 : } When applied for, **24 SEP 1946**  
SPECIFICATION  
Travelling Expenses (if any) £ 1 : 14 : 6 } When received.....19.....

*MR Dale*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute.....**GLASGOW 24 SEP 1946**.....

Assigned.....**SEE ACCOMPANYING MACHINERY REPORT**.....