

REPORT ON BOILERS.

No. 66732

Received at London Office - 3 MAR 1943

Date of writing Report 19 1.3.43 When handed in at Local Office 1.3.43 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 24th Dec 1941 Last Survey 23rd Feb. 1943

Reg. Book. on the M/V. "EMPIRE COURAGE" (Number of Visits 26)

Master Glasgow Built at Glasgow By whom built Banley Clark & Co. Yard No. 689 When built 1943

Engines made at Glasgow By whom made Banley Clark & Co. Ltd. Engine No. 690 When made 1943

Boilers made at -do- By whom made -do- Boiler No. 689 When made 1943

Nominal Horse Power 685 Owners Ministry of War 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 1667 sq ft Is forced draught fitted No Coal or Oil fired Oil ✓

No. and Description of Boilers One Oil fired & Exhaust Heat Working Pressure 120 lb. ✓

Tested by hydraulic pressure to 230 lb. Date of test 26-5-42 No. of Certificate 21069 Can each boiler be worked separately -

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 2 1/4" I.H.L. auto

Area of each set of valves per boiler { per Rule 7.70" as fitted 7.940" Pressure to which they are adjusted 120 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 well clear Is oil fuel carried in the double bottom under boilers Yes ✓

Smallest distance between shell of boiler and tank top plating 18" Is the bottom of the boiler insulated -

Largest internal dia. of boilers 11'-0" Length 11'-0" Shell plates: Material S Tensile strength 29/33 tons ✓

Thickness 21/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end auto inter. - } long. seams DBS TR Diameter of rivet holes in { circ. seams 13/16" long. seams 13/16" } Pitch of rivets { 2.816" 4.375" }

Percentage of strength of circ. end seams { plate 71.3 rivets 44.48 } Percentage of strength of circ. intermediate seam { plate 81.42 rivets 80.52 } Working pressure of shell by Rules 89.7

Thickness of butt straps { outer 17/32" inner 21/32" } No. and Description of Furnaces in each Boiler One Daylight 10 ✓

Material S Tensile strength 26/30 tons ✓ Smallest outside diameter 40 1/4" ✓

Length of plain part { top - bottom - } Thickness of plates { crown 3/8" bottom - } Description of longitudinal joint welded ✓

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

End plates in steam space: Material S Tensile strength 26/30 tons ✓ Thickness 13/16" Pitch of stays 13 1/2" x 17" ✓

How are stays secured DN Working pressure by Rules -

Tube plates: Material { front S back S } Tensile strength { 26/30 tons ✓ } Thickness { 23/32" 11/16" }

Mean pitch of stay tubes in nests 10 5/8" Pitch across wide water spaces 13 5/8" Working pressure { front - back - }

Girders to combustion chamber tops: Material S Tensile strength 28/32 tons ✓ Depth and thickness of girder at centre 20 8 1/4" x 9/16" Length as per Rule Distance apart 10" ✓ No. and pitch of stays in each 20 10" Working pressure by Rules - Combustion chamber plates: Material S

Tensile strength 26/30 tons ✓ Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 19/32"

Pitch of stays to ditto: Sides 10" x 10" Back 9 1/2" x 10 1/2" Top 10" x 10" Are stays fitted with nuts or riveted over Nuts ✓

Working pressure by Rules - Front plate at bottom: Material S Tensile strength 26/30 tons ✓

Thickness 23/32" Lower back plate: Material S Tensile strength 26/30 tons ✓ Thickness 11/16"

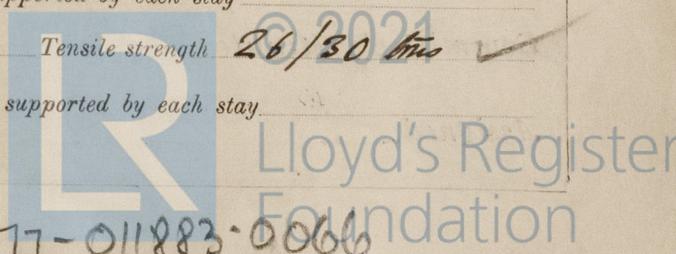
Pitch of stays at wide water space 14 1/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure - Main stays: Material S Tensile strength 28/32 tons ✓

Diameter { At body of stay, 2 1/8" or - } No. of threads per inch 6 Area supported by each stay -

Working pressure by Rules - Screw stays: Material S Tensile strength 26/30 tons ✓

Diameter { At turned off part, 1 1/2" or - } No. of threads per inch 9 Area supported by each stay -



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Working pressure by Rules *10* ✓ Are the stays drilled at the outer ends *No* ✓ Margin stays: Diameter (At turned off part or Over threads) *1 5/8"* ✓
 No. of threads per inch *9* ✓ Area supported by each stay *3" Ex. To 1 9/4" x 11 9/16"* ✓ Working pressure by Rules *10 W.G.* ✓
 Tubes: Material *S* ✓ External diameter (Plain Stay) *3"* ✓ Thickness *1/4", 5/16" & 3/8"* ✓ No. of threads per inch *9* ✓
 Pitch of tubes *4 1/4" x 4 1/4"* ✓ Working pressure by Rules *10 W.G.* ✓
 shell plate *20" x 16"* ✓ Section of compensating ring *7 1/2" x 2 1/32"* ✓ Manhole compensation: Size of opening in
 Outer row rivet pitch at ends *5 1/4"* ✓ Depth of flange if manhole flanged *3 1/2"* ✓ No. of rivets and diameter of rivet holes *44 @ 1"* ✓
 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 of
 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 _____
 Number of elements _____ Material of tubes _____ Tubes _____
 Material of headers _____ Tensile strength _____ Steel forgings _____
 the boiler be worked separately _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____ Steel castings _____
 Area of each safety valve _____ Are the safety valves fitted with easing gear _____ Thickness _____ Can the superheater be shut off and
 Rules _____ Pressure to which the safety valves are adjusted _____ Working pressure as per
 tubes _____ forgings and castings _____ and after assembly in place _____ Hydraulic test pressure: _____
 valves fitted to free the superheater from water where necessary _____ Are drain cocks or _____
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes* _____



For Barclay, Curle & Co., Ltd
The foregoing is a correct description,
Alexander Macneil, Chief Draughtsman, Manufacturer.

Dates of Survey while building	During progress of work in shops	1941 Dec 24-29, 1942 Jan 7, Mar 27, Apr 10, 24, 29	Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)	Yes
	During erection on board vessel	1942 May 6, 26, Jun 4, 5, 29, Aug 7, Sep 23	Total No. of visits	26

Is this Boiler a duplicate of a previous case *No* If so, state Vessel's name and Report No. _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. A has been satisfactorily installed in the vessel and the safety valves have been adjusted to the working pressure. The specification requirements have been carried out satisfactorily.*

Job 1/3/43

Survey Fee	£ 11 : 8 :	When applied for,	19
Travelling Expenses (if any)	£ 2 : 15 :	When received,	19

Checked on Macneil's Report.

A. J. Brown
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 2 MAR 1943**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**



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