

REPORT ON BOILERS.

No. 64315

Received at London Office 10 SEP 1941

Date of writing Report 19 8.9.1941 When handed in at Local Office 8.9.1941 Port of Glasgow

No. in Survey held at Reg. Book. 1051 on the S.S. "Empire Dalling" Date, First Survey 24.7.40 Last Survey 28.8.1941

(Number of Visits ✓) Tons { Gross 6327 Net 4592

Master Glasgow Built at Glasgow By whom built C. Council & Co. Yard No. 434 When built 1941

Engines made at Glasgow By whom made D. Brown & Co. Engine No. 1072 When made 1941

Boilers made at do By whom made do Boiler No. 1072 When made 1941

Nominal Horse Power 439 Owners Ministry of War Transport Port belonging to

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Bohills Ltd. (Letter for Record S)

Total Heating Surface of Boilers 59209 Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers 2 Single tubes. Working Pressure 220 lb.

Tested by hydraulic pressure to 380 lb. Date of test 13.6.41 No. of Certificate 20778 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 66.64 No. and Description of safety valves to each boiler 2 - 3 1/2 Spring loaded.

Area of each set of valves per boiler { per Rule 16.74 as fitted 16.58 Pressure to which they are adjusted 220 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 on uptakes and bunkers on woodwork 29" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 25" Is the bottom of the boiler insulated No.

Largest internal dia. of boilers 16'-1 29/64" Length 12'-0" Shell plates: Material S Tensile strength 29/33 Tons

Thickness 1 35/64" Are the shell plates welded or flanged No Description of riveting: circ. seams { end South inter. North

Seams D.B.S. TR. Diameter of rivet holes in { circ. seams 3 1/16 F 1 3/8" Pitch of rivets 8 1/4 196 F 3 1/4" long. seams 1 9/16"

Percentage of strength of circ. end seams { plate 86.50 rivets 47: 44.5 Percentage of strength of circ. intermediate seam { plate 86.50 rivets 85.26 combined 88.13

Percentage of strength of longitudinal joint { plate 86.50 rivets 85.26 combined 88.13 Working pressure of shell by Rules 220

Thickness of butt straps { outer 1 1/64" inner 1 1/64" No. and Description of Furnaces in each Boiler 4 Diagonal

Material S Tensile strength 26/30 Tons Smallest outside diameter 3'-5 1/2"

Length of plain part { top 5" bottom 5" Thickness of plates { crown 5" bottom 5" Description of longitudinal joint butt.

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 221

Stays in steam space: Material S Tensile strength 26/30 Tons Thickness 1 13/32" Pitch of stays 20" x 23 1/2"

Are stays secured D. Nuts. Working pressure by Rules 220

Stays plates: Material { front S back S Tensile strength { 26/30 Tons Thickness { 1 15/16" 25/32"

Minimum pitch of stay tubes in nests 9.54 Pitch across wide water spaces 14" Working pressure { front 229 back 232

Stays to combustion chamber tops: Material S Tensile strength 28/32 Tons Depth and thickness of girder

Centre 2 @ 10' x 2 1/8" Length as per Rule 3'-0 9/16" Distance apart W 9 3/8": C. 4 1/2" No. and pitch of stays

Each 3 @ 8 3/4" Working pressure by Rules 220 Combustion chamber plates: Material Steel

Tensile strength 26/30 Tons Thickness: Sides 25/32" Back 21/32" Top 25/32" Bottom 3/32"

of stays to ditto: Sides 8 3/4 x 9 3/8" Back 4 1/6 x 8' 0" Top 8 2 x 4 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 221 Front plate at bottom: Material S Tensile strength 26/30 Tons

Thickness 5 1/16" Lower back plate: Material S Tensile strength 26/30 Tons Thickness 5 3/64"

Working pressure by Rules 226 of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over Nuts

Working Pressure 226 Main stays: Material S Tensile strength 28/32 Tons

At body of stay, 3 1/4 x 3 1/2" No. of threads per inch 6 Area supported by each stay 450 & 370

At turned off part, 1 5/8" Screw stays: Material S Tensile strength 26/30 Tons Area supported by each stay 680

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Working pressure by Rules **223** Are the stays drilled at the outer ends **No.** Margin stays: Diameter { At turned off part, or Over threads **1 3/4"**

No. of threads per inch **9** Area supported by each stay **84** Working pressure by Rules **220**

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

Pitch of tubes **4 1/8" x 4 3/16"** Working pressure by Rules **Manhole compensation: Size of opening in shell plate.**

Section of compensating ring No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends Depth of flange if manhole flanged **4"** Steam Dome: Material **Iron**

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 **Iron.** 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 casing 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 or 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

The foregoing is a correct description,
For David Rowan & Co. Ltd. Manufact
Arch. H. Grierson

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - - }

SEE ACCOMPANYING MACHINERY REPORT.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Is this Boiler a duplicate of a previous case **No.** If so, state Vessel's name and Report No. **Empire Glen No. Report No. 643068**

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

The materials and workmanship are good.

The boilers have been constructed under special survey, satisfactorily fitted in the vessel and their safety valves adjusted under steam.

9-9-41

Survey Fee ... £ : : } When applied for, 19

Travelling Expenses (if any) £ : : } When received, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 9 SEP 1941

Assigned SEE ACCOMPANYING MACHINERY REPORT.

