Rpt. 5a.

REPORT ON BOILERS.

No. 49636

Received at London Office 25 SEP 1929

Date of writing Report 19.9. 1929 When handed in at Local Office 23.9. 1929 Port of Glasgow

No. in Reg. Book. Survey held at Dalmuir Date, First Survey 7.8.29 Last Survey 18.9. 1929.

on the S.S. "Asperity" (Number of Visits 21) Tons Gross / Net

Master Built at Greenock By whom built J. Brown & Co. Ltd. Yard No. 170 When built 1929.

Engines made at Dalmuir By whom made Wm. Beardmore & Co. Ltd. Engine No. 657 When made 1929.

Boilers made at Dalmuir By whom made Wm. Beardmore & Co. Ltd. Boiler No. 657 When made 1929.

Nominal Horse Power Owners F. T. Everard & Sons Ltd. Port belonging to London

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MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wm. Beardmore & Co. Ltd. (Letter for Record S.)

Total Heating Surface of Boilers 2464 ft. Is forced draught fitted No. Coal or Oil fired Coal

No. and Description of Boilers 1 - Multitubular SB **Working Pressure** 180

Tested by hydraulic pressure to 320 Date of test 7-8-29 No. of Certificate 18386 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 66 ft. No. and Description of safety valves to each boiler 2 - S.L.F.L.

Area of each set of valves per boiler { per Rule 8.025 sq. in. / as fitted 9.817 sq. in. } Pressure to which they are adjusted 185 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 ~~[illegible]~~ 8½" Is oil fuel carried in the double bottom under boilers No

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

Largest internal dia. of boilers 16'-0" Length 10'-6" **Shell plates:** Material S Tensile strength 28-32

Thickness 1 5/16" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R. / inter. None

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 7/16" / long. seams 1 3/8" } Pitch of rivets { 4.05" / 9.5"

Percentage of strength of circ. end seams { plate 85.6 / rivets 91.7 } Percentage of strength of circ. intermediate seam { plate ✓ / rivets ✓

Percentage of strength of longitudinal joint { plate 64.5 / rivets 80.5 / combined 89.4 } Working pressure of shell by Rules 183

Thickness of butt straps { outer 1" / inner 1 1/16" } **No. and Description of Furnaces in each Boiler** 3 - Morison.

Material S Tensile strength 26-30 Smallest outside diameter 3'-11 1/4"

Length of plain part { top ✓ / bottom } Thickness of plates { crown 19/32" / bottom } Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 182

End plates in steam space: Material S Tensile strength 26-30 Thickness 1 7/32" Pitch of stays 19" x 16½"

How are stays secured D.N. Working pressure by Rules 217

Tube plates: Material { front S / back S } Tensile strength { 26-30 / " - " } Thickness { 7/8. / 11/16" } Working pressure { front 220 / back 190 }

Mean pitch of stay tubes in nests 11 1/8" Pitch across wide water spaces 14 1/4" X

Girders to combustion chamber tops: Material S Tensile strength 28-32 Depth and thickness of girder at centre 7 3/4" x 1 3/4" Length as per Rule 31 3/4" Distance apart 8 5/16" No. and pitch of stays in each 2-10 3/8" x 8 5/16" Working pressure by Rules 180

Combustion chamber plates: Material S Tensile strength 26-30 Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom 7/8"

Pitch of stays to ditto: Sides 10 3/8" x 8 3/16" Back 10" x 8 3/16" Top 10 3/8" x 8 5/16" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 180 **Front plate at bottom:** Material S Tensile strength 26-30

Thickness 7/8" **Lower back plate:** Material S Tensile strength 26-30 Thickness 7/8"

Pitch of stays at wide water space 14 11/16" x 8 3/16" Are stays fitted with nuts or riveted over nuts

Working Pressure 200 **Main stays:** Material S Tensile strength 28-32

Diameter { At body of stay, or Over threads 3" } No. of threads per inch 6 Area supported by each stay 313 sq. in.

Working pressure by Rules 216 **Screw stays:** Material S Tensile strength 26-30

Diameter { At turned off part, or Over threads 1 3/4" } No. of threads per inch 9 Area supported by each stay 84 sq. in.

Working pressure by Rules 180 Are the stays drilled at the outer ends Yes Margin stays: Diameter { At turned off part. / Over threads 1 7/8"

No. of threads per inch 9 Area supported by each stay 105 sq. in. Working pressure by Rules 200

Tubes: Material Iron External diameter { Plain 3 1/4" / Stay 3 1/4" } Thickness { 9 L.S.G. 1/4", 5/16", 3/8" } No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules **Manhole compensation:** Size of opening in shell plate 20 5/8" x 16 5/8" Section of compensating ring 30" x 34" x 1 6/16" No. of rivets and diameter of rivet holes 36 - 1 7/16"

Outer row rivet pitch at ends 9 1/2" Depth of flange if manhole flanged — **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 None Manufacturers of { Tubes / 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 , 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 WILLIAM BEARDMORE & CO., LIMITED

A Thomson

Manufacturer.

Dates of Survey { During progress of work in shops / During erection on board vessel } See Accompanying Macby Report

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

Total No. of visits 21

GENERAL REMARKS (*State quality of workmanship, opinions as to class, &c.*) This boiler has been built under special survey in accordance with the approved plans and the Society's Rules, and requirements, the materials and workmanship are good, it has been securely fitted on board, and the safety valves adjusted under steam.

Survey Fee ... £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

Jas. Cairns

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 24 SEP 1929

Assigned See Accompanying Macby Report