

REPORT ON BOILERS.

No. 54392

25 APR 1934

Received at London Office

10.34 Port of Glasgow
 When handed in at Local Office 21.4.10.34
 Date, First Survey 11th Sept 1933 Last Survey 12th April 1934
 (Number of Visits 63) Tons { Gross 2212
 Net 1098
 Survey held at Glasgow
 on the S. I. Waitaki
 Built at Glasgow By whom built A. Stephen & Sons Ltd. Yard No. 538 When built 1934.4.
 By whom made A. Stephen & Sons Ltd. Engine No. 538 When made 1934.
 By whom made do Boiler No. 538 When made 1934.
 Owners Union I. Co. of New Zealand Port belonging to Dunedin.
 Final Horse Power 353.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Watt Company Scotland
 Heating Surface of Boilers 5406 sq Is forced draught fitted Yps (Letter for Record S)
 and Description of Boilers 2 Simple Ended Return Lube Coal or Oil fired Coal & oil Working Pressure 200 lb
 tested by hydraulic pressure to 350 lb Date of test 15/11/34 No. of Certificate 1932 Can each boiler be worked separately Yps
 Area of Firegrate in each Boiler 624 No. and Description of safety valves to each boiler 2 unimpaired high lift
 Area of each set of valves per boiler { per Rule 9.98 Pressure to which they are adjusted 200 lb Are they fitted with easing gear Yps
 { as fitted 9.82
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Will blow.
 Smallest distance between boilers or uptakes and bunkers or woodwork 21" Is oil fuel carried in the double bottom under boilers Yps
 Smallest distance between shell of boiler and tank top plating 21" Is the bottom of the boiler insulated Yps
 Largest internal dia. of boilers 15'-6" Length 12'-8" Shell plates: Material S Tensile strength 29.33 Tons
 Thickness 1 3/4" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end DR overlap
 { intey. 4 1/2"
 { long. seams 1 7/8" Pitch of rivets { 9 1/2"
 { plate ✓
 { rivets ✓
 Eng. seams DR 3R 5 wide in pitch Diameter of rivet holes in { circ. seams 1 7/8"
 { long. seams 1 7/8" Percentage of strength of circ. intermediate seam { plate ✓
 { rivets ✓
 Percentage of strength of circ. end seams { plate 65.0
 { rivets 42.2
 Percentage of strength of longitudinal joint { plate 85.5
 { rivets 90.0
 { combined 85.8
 Working pressure of shell by Rules 201.
 Thickness of butt straps { outer 1 7/8" No. and Description of Furnaces in each Boiler 3 Duplin. 3 Cf.
 { inner 1 3/8" Tensile strength 26.30 Tons Smallest outside diameter 46.15"
 Material S Description of longitudinal joint Will blow
 Length of plain part { top ✓ Thickness of plates { crown 4 1/2"
 { bottom ✓ { bottom 6 1/2" Working pressure of furnace by Rules 203
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ Tensile strength 26.30 Tons Thickness 1 3/4" Pitch of stays 25.5"
 End plates in steam space: Material S Working pressure by Rules 207.
 How are stays secured Nuts inside & outside Tensile strength { 26.30 Tons Thickness { 2 1/2"
 { front ✓ { back 2 1/2"
 { back ✓ Working pressure { front 204.
 { back 292.
 Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 13 1/2" Depth and thickness of girder
 Girders to combustion chamber tops: Material S Tensile strength 29.33 Tons No. and pitch of stays
 at centre 10" x 1.75" Length as per Rule 36 3/4" Distance apart 10 1/2"
 in each 3 D 8 3/4" Working pressure by Rules 205. Combustion chamber plates: Material S
 Tensile strength 26.30 Tons Thickness: Sides 4 1/2" Back 1 1/2" Top 4 1/2" Bottom 1 1/2"
 Pitch of stays to ditto: Sides 8 3/4" x 8 1/2" Back 10" x 8" Top 10 1/2" x 8 3/4" Are stays fitted with nuts or riveted over Nuts
 Working pressure by Rules 201. Front plate at bottom: Material S Tensile strength 26.30 Tons Thickness 1 1/2"
 Thickness 2 1/2" Lower back plate: Material S Tensile strength 26.30 Tons Thickness 1 1/2"
 Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over Nuts
 Working Pressure 223 Main stays: Material S Tensile strength 28 1/2 Tons
 Diameter { At body of stay, 2 1/2" No. of threads per inch 6. Area supported by each stay 246 sq
 { Over threads 2 1/2" Tensile strength 26.30 Tons
 Working pressure by Rules 219. Screw stays: Material S Area supported by each stay 44.4 sq
 Diameter { At turned off part, 1 1/2" No. of threads per inch 9
 { Over threads 1 1/2"

Working pressure by Rules 205. Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, 1 1/8 or Over threads 1 1/8 }
No. of threads per inch 9. Area supported by each stay 940. Working pressure by Rules 227
Tubes: Material SD. steel External diameter { Plain 1 1/2 Stay 1 1/2 } Thickness { 5/16 + 3/8 } No. of threads per inch 9
Pitch of tubes 3 3/4 x 3 3/4 Working pressure by Rules 230. Manhole compensation: Size of opening in shell plate 20 1/2 x 16 1/2 Section of compensating ring 26 1/2 x 1 3/16 No. of rivets and diameter of rivet holes 32 @ 1 9/16
Outer row rivet pitch at ends 9 7/8 Depth of flange if manhole flanged / Steam Dome: Material 36
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
How connected to shell Inner radius of crown Working pressure by Rules
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 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

ALEXANDER STEPHEN & SONS LIMITED

The foregoing is a correct description,

Alex. MacLellan

Director

Manufacturer

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

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

SEE ACCOMPANYING MACHINERY REPORT

Total No. of visits

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

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

These tubes have been built under special survey and in accordance with the Rules. The materials and workmanship are good. They have been tested by hydraulic pressure and found tight. On completion they have been placed in boxes and efficiently secured in position.

24/4/34.

Survey Fee ... £ ... When applied for, 19
Travelling Expenses (if any) £ 40 Machinery report. When received, 19

Forfmanus

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 24 APR 1934

Assigned SEE ACCOMPANYING MACHINERY REPORT.

TUE 8 MAY 1934

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