

REPORT ON BOILERS.

No. 16387.

Received at London Office

11 DEC 1930

Date of writing Report 9-12-1930 When handed in at Local Office Dec. 10th 1930 Port of Aberdeen

No. in Reg. Book. Survey held at Aberdeen Date, First Survey 19-6-29. Last Survey 5-12-1930

on the T.S.S. "CALDARE" (Number of Visits 24.) Gross 760.33 Tons Net 281.45

Master Built at Aberdeen By whom built J. Lewis & Sons Ltd Yard No. 109 When built 1930

Engines made at Aberdeen By whom made J. Lewis & Sons Ltd. Engine No. 190/1 When made 1930

Boilers made at Aberdeen By whom made J. Lewis & Sons Ltd. Boiler No. 153/4 When made 1930

Nominal Horse Power 175. Owners Australian Steamships Proprietary Ltd. Port belonging to Sydney N.S.W.

Manager. Howard Smith, Ltd.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 3406 \square Is forced draught fitted No ✓ Coal or Oil fired Coal ✓

No. and Description of Boilers 2 S.E. Main ✓ Working Pressure 180 lb. ✓

Tested by hydraulic pressure to 320 lb. Date of test 9-7-30 No. of Certificate 1093.5 "153" Can each boiler be worked separately yes ✓

Area of Firegrate in each Boiler 41.33 \square No. and Description of safety valves to each boiler 2 spring loaded ✓

Area of each set of valves per boiler { per Rule 10.9 \square ✓ as fitted 11.88 \square ✓ 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 5'-6" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating no tank Is the bottom of the boiler insulated no

Largest internal dia. of boilers 13'-3 $\frac{13}{16}$ " Length 10'-6" Shell plates: Material Steel Tensile strength 28/32 tons

Thickness 1 $\frac{3}{32}$ " Are the shell plates welded or flanged no Description of riveting: circ. seams { end D.R. ✓ inter. ✓

long. seams T.R.D.B.S. ✓ Diameter of rivet holes in { circ. seams 1 $\frac{1}{8}$ " ✓ long. seams 1 $\frac{1}{8}$ " ✓ Pitch of rivets { 3.33" + 3.35" ✓ 8 $\frac{3}{16}$ " ✓

Percentage of strength of circ. end seams { plate 67.2% ✓ rivets 44.6% ✓ Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓

Percentage of strength of longitudinal joint { plate 86.4% ✓ rivets 85.5% ✓ combined 89.6% ✓ Working pressure of shell by Rules 180.2 lb.

Thickness of butt straps { outer 27 $\frac{3}{32}$ " ✓ inner 1 $\frac{1}{32}$ " ✓ No. and Description of Furnaces in each Boiler 2 corrugated 2 c.f. ✓

Material Steel Tensile strength 26/30 tons Smallest outside diameter 3'-10 $\frac{3}{4}$ " ✓

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 5 $\frac{7}{8}$ " ✓ bottom 5 $\frac{7}{8}$ " ✓ Description of longitudinal joint welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 195 lb.

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 $\frac{1}{32}$ " ✓ Pitch of stays 15 $\frac{3}{4}$ " x 17 $\frac{1}{8}$ " ✓

How are stays secured Double nuts ✓ Working pressure by Rules 181 lb. ✓

Tube plates: Material { front Steel Tensile strength { 26/30 tons ✓ back Steel 26/30 tons ✓ Thickness { 7 $\frac{7}{8}$ " ✓ 3 $\frac{1}{4}$ " ✓

Mean pitch of stay tubes in nests 10.39" Pitch across wide water spaces 14 $\frac{3}{8}$ " ✓ Working pressure { front 182.6 lb. ✓ back 186 lb. ✓

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons ✓ Depth and thickness of girder at centre 8 $\frac{3}{4}$ " x 1 $\frac{1}{8}$ " Length as per Rule 31 $\frac{9}{16}$ " Distance apart 8 $\frac{1}{4}$ " ✓ No. and pitch of stays in each 2 @ 9 $\frac{7}{8}$ " Working pressure by Rules 181.5 lb. ✓

Tensile strength 26/30 tons Thickness: Sides 21 $\frac{31}{32}$ " ✓ Back 11 $\frac{11}{16}$ " ✓ Top 21 $\frac{31}{32}$ " ✓ Bottom 11 $\frac{11}{16}$ " ✓

Pitch of stays to ditto: Sides 8 $\frac{1}{4}$ " x 9 $\frac{7}{8}$ " Back 8 $\frac{3}{4}$ " x 10 $\frac{1}{4}$ " Top 8 $\frac{1}{4}$ " x 9 $\frac{7}{8}$ " Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 181.2 lb. Front plate at bottom: Material Steel Tensile strength 26/30 tons ✓

Thickness 7 $\frac{7}{8}$ " Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 13 $\frac{13}{16}$ " ✓

Pitch of stays at wide water space 14 $\frac{7}{8}$ " x 8 $\frac{3}{4}$ " Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 181 lb. Main stays: Material Steel Tensile strength 28/32 tons ✓

Diameter { At body of stay, or Over threads 2 $\frac{7}{8}$ " ✓ No. of threads per inch 6 ✓ Area supported by each stay 270 \square ✓

Working pressure by Rules 184 lb. Screw stays: Material Steel Tensile strength 26/30 tons ✓

Diameter { At turned off part, or Over threads 1 $\frac{5}{8}$ " top & sides. 13 $\frac{13}{16}$ " back. No. of threads per inch 9 ✓ Area supported by each stay 81.5 \square ✓

Working pressure by Rules 187 lb. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part. 1 7/8" Over threads 1 7/8" No. of threads per inch 9 Area supported by each stay 109 sq. in. Working pressure by Rules 195.7 lb. Tubes: Material Iron. External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { 8 SWG. 1/4" 5/16" No. of threads per inch 9 Pitch of tubes 4 1/2" Working pressure by Rules 230 lb. Manhole compensation: Size of opening shell plate 15x19" Section of compensating ring 29x33x1 1/16" No. of rivets and diameter of rivet holes 40 @ 1 1/8" Outer row rivet pitch at ends 8 3/16" Depth of flange if manhole flanged 3" Steam Dome: Material 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 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 JOHN LEWIS & SONS, LTD.,
Manufacture

1929
Dates of Survey { During progress of work in shops - - - June 19, 25, July 1-6, 10-24, Aug 3-13, Sep. 9, Dec 3-10, 11, 24, 25, 26, 27, 28, 29, 30, 31, 1929, May 27, July 7-9.
while building { During erection on board vessel - - - July 17, Nov. 27-29, Dec 5.
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes
Total No. of visits 24.

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

This boiler has been constructed under special survey in accordance with the approved plan & the Rules of this Society.
The materials & workmanship are good.
The boiler has been satisfactorily fitted on board the vessel, the safety valves adjusted under steam & tried for accumulation, & the boiler examined under working conditions & found satisfactory.

Survey Fee ... £ See Report.
Travelling Expenses (if any) £ on Machinery.
When applied for, 192
When received, 192

P. Fitzgerald.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 19 DEC 1929

Assigned

See other J.E. Rpt.



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Foundation