

## REPORT ON BOILERS.

No. 8851

Received at London Office 27 FEB 1934

Writing Report 26<sup>th</sup> Feb 1934. When handed in at Local Office 26<sup>th</sup> Feb 1934. Port of DundeeSurvey held at Dundee Date, First Survey 31<sup>st</sup> July 1933 Last Survey 21<sup>st</sup> Feb 1934

s/s " DUNDEE " (Number of Visits 23.) Gross 1540.73 Tons Net 624.74

Built at Dundee By whom built Caldon S &amp; E Co Ltd Yard No. 345 When built 1934

made at Glasgow By whom made A. Stephen &amp; Sons Ltd Engine No. 101 When made 1934

s made at Dundee By whom made Caldon S &amp; E Co Ltd Boiler No. 545 When made 1934

Horse Power 443 at 15 ft Owners Dundee Perth & London Shipping Co Ltd Port belonging to Dundee  
of heating surface per N.H.P.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Company of Scotland Ltd. Dorman Long &amp; Co. Ltd. (Letter for Record (S) ✓)

Heating Surface of Boilers 6651 ft. Is forced draught fitted No Coal or Oil fired Coal

and Description of Boilers Three Single-Ended Multitubular Working Pressure 220 lbs.

d by hydraulic pressure to 380 lbs. Date of test 15/12/33. No. of Certificate 1036 Can each boiler be worked separately yes

of Firegrate in each Boiler 60 ft. No. and Description of safety valves to each boiler Double-Spring loaded High Lift Improved type

of each set of valves per boiler { per Rule 11.7 sq" as fitted 6.28 sq" for High Lift Pressure to which they are adjusted 225 lbs. Are they fitted with easing gear yes

use of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓

Least distance between boilers or uptakes and bunkers or woodwork 1'-9" Is oil fuel carried in the double bottom under boilers No

Least distance between shell of boiler and tank top plating Open floor in Boiler Room Is the bottom of the boiler insulated yes

Least internal dia. of boilers 15'-0" Length 12'-6" Shell plates: Material Steel Tensile strength 28/32 tons

Thickness 1 31/64" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R. Lap inter. ✓

seams T.R. Double Butt Strap Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 1/2" Pitch of rivets { 4 1/2" 10 1/2" ✓

Percentage of strength of circ. end seams { plate 66.5% rivets 43.5% Percentage of strength of circ. intermediate seam { plate rivets ✓

Percentage of strength of longitudinal joint { plate 85.7% rivets 87.0% combined 88.9% Working pressure of shell by Rules 221 lbs.

Thickness of butt straps { outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler 3- Deighton Section ✓

Material Steel Tensile strength 26/30 tons Smallest outside diameter 3'-8 29/32" ✓

Length of plain part { top bottom ✓ Thickness of plates { crown 45/64" bottom 45/64" Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 230 lbs.

d plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 5/16" Pitch of stays 19" x 17.625" ✓

How are stays secured Double Nuts ✓ Working pressure by Rules 221 lbs.

Front plates: Material { front Steel Tensile strength { 26/30 tons Thickness { 1 1/2" 29/32" ✓

Pitch of stay tubes in nests 9 1/4" Pitch across wide water spaces 1'-2 1/4" Working pressure { front 224 lbs back 34 8 " ✓

Orders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder

centre 11 1/8" x 1 3/4" Length as per Rule 3'-4 3/8" Distance apart 9 3/4" No. and pitch of stays

each 4 - 7 3/4" Working pressure by Rules 222 lbs. Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 7/8" ✓

Pitch of stays to ditto: Sides 9 1/2" x 8 1/4" Back 9 1/2" x 8 1/4" Top 9 3/4" x 7 3/4" Are stays fitted with nuts or riveted over Nuts ✓

Working pressure by Rules 229 lbs. Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 1 1/32" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 7/8" ✓

Pitch of stays at wide water space 1'-2 1/4" Are stays fitted with nuts or riveted over Nuts ✓

Working Pressure 231 lbs. Main stays: Material Steel Tensile strength 28/32 tons ✓

Diameter { At body of stay, 3 1/8" No. of threads per inch 6 Area supported by each stay 335 sq" ✓

Over threads 3 1/2" Working pressure by Rules 255 lbs. Screw stays: Material Steel Tensile strength 26/30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 78.375 sq" ✓

Over threads 1 3/4" Working pressure by Rules 255 lbs. Screw stays: Material Steel Tensile strength 26/30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 78.375 sq" ✓

Over threads 1 3/4" Working pressure by Rules 255 lbs. Screw stays: Material Steel Tensile strength 26/30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 78.375 sq" ✓

Over threads 1 3/4" Working pressure by Rules 255 lbs. Screw stays: Material Steel Tensile strength 26/30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 78.375 sq" ✓

Over threads 1 3/4" Working pressure by Rules 255 lbs. Screw stays: Material Steel Tensile strength 26/30 tons



Working pressure by Rules 231 lbs. Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, or Over threads 2" ✓  
No. of threads per inch 9. ✓ Area supported by each stay 97.97  $\square$  " Working pressure by Rules 292 lbs  
Tubes: Material Iron External diameter { Plain  $3\frac{1}{4}$ " ✓ Thickness {  $\frac{16}{16}$ " ✓ No. of threads per inch 9.  
Pitch of tubes  $4\frac{5}{8}$ " Working pressure by Rules 230 lbs Manhole compensation: Size of opening in  
shell plate  $21" \times 17"$  ✓ Section of compensating ring  $3\frac{1}{4} \times 3\frac{1}{4} \times \frac{31}{16}$  thick No. of rivets and diameter of rivet holes 32 -  $1\frac{9}{16}$ " ✓  
Outer row rivet pitch at ends  $10\frac{3}{4}"$  ✓ Depth of flange if manhole flanged  $3\frac{1}{4}"$  Steam Dome: Material None  
Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓  
Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint { Plate ✓  
Internal diameter ✓ Working pressure by Rules ✓ Thickness of crown ✓ Rivets ✓ 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 Sugden's Patent Uptake Manufacturers of { Tubes Supplied by J. Sugden & Co.  
superheater { Steel headers Babcock & Wilcox & Co.  
Number of elements 42 Material of tubes Steel Internal diameter and thickness of tubes  
Material of headers Steel Plates Tensile strength 26/30 tons Thickness  $\frac{3}{4}"$  Can the superheater be shut off and  
the boiler be worked separately Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes  
Area of each safety valve  $3.14$   $\square$  " Are the safety valves fitted with easing gear Lever handles only Working pressure as per  
Rules Approved for 120 lbs. 26/9/33 Pressure to which the safety valves are adjusted 227 lbs Hydraulic test pressure:  
tubes 660 lbs headers 660 lbs and after assembly in place 660 lbs Are drain cocks or valves fitted  
to free the superheater from water where necessary Yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes.

FOR AND ON BEHALF OF  
THE CALEDON SHIPBUILDING & ENGINEERING CO.  
The foregoing is a correct description,

D. H. J. J. J. Manufacturer.

1933.  
Dates of Survey { During progress of work in shops - - July 31, Aug. 8-11, Sept. 6-16-27 Oct. 5-19. Are the approved plans of boiler and superheater forwarded herewith Yes.  
while building { During erection on board vessel - - - Nov 7-14-21-30 Dec 8-15-21. (If not state date of approval.)  
1934. Jan. 10-25-30 Feb. 2-5-13-19-24. Total No. of visits 23.

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.)

These Boilers have been constructed under Special Survey, & in accordance with the Rules & the approved plans. The Materials & workmanship are sound & good. When completed, the boilers withstood the hydraulic test pressure, required by the Rules, with satisfactory results, & after being installed on board, they were found tight & sound under a full head of steam.

For recommendations as to class see Dundee Rpt. N° 8850.

Survey Fee ... £ 34 : 13 : 0 When applied for, 26/2/1934.  
Travelling Expenses (if any) £ : : When received, 7-3-1934

John Houston.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 2 MAR 1934

TUE. 17 APR 1934

Assigned

See other Rpt. Dundee Rpt. N° 8850



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Foundation