

(See Leith Report No. 20514)
REPORT ON BOILERS. No. 64413

Received at London Office - 3 OCT 1941

Date of writing Report 19 29.9.41 When handed in at Local Office 29.9.41 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 16.4.41 Last Survey 1.9.41
 eg. Book. 1161 on the St. St. Leonard's Pier (Number of Visits 22) (Gross Tons) (Net Tons)
 Master Burntisland Built at Burntisland By whom built Burntisland Works Ltd. Yard No. 251 When built
 Engines made at Glasgow By whom made D. Brown & Co. Ltd. Engine No. 1086 When made 1941
 Boilers made at do By whom made do. Boiler No. 1086 When made
 Nominal Horse Power 184 Owners _____ Port belonging to _____

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Company of Scotland (Letter for Record S)
 Total Heating Surface of Boilers 2450 sq ft Is forced draught fitted Yes Coal or Oil fired Coal
 No. and Description of Boilers One Simple barrel Working Pressure 200 lbs
 Tested by hydraulic pressure to 350 lb Date of test 4.8.41 No. of Certificate 20830 Can each boiler be worked separately -
 Area of Firegrate in each Boiler 63.1 sq ft No. and Description of safety valves to each boiler 1-3/4" down spring
 Area of each set of valves per boiler {per Rule 16.95 as fitted 16.58} Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork front of boiler to bunker bulkhead = 7'-3" Is oil fuel carried in the double bottom under boilers -
 Smallest distance between shell of boiler and tank top plating No tank (open floor) Is the bottom of the boiler insulated Yes
 Largest internal dia. of boilers 16'-0" Length 11'-6" Shell plates: Material S Tensile strength 29-33 Tons
 Thickness 1 1/2" Are the shell plates welded or flanged No Description of riveting: circ. seams {end DR overlap }
 long. seams DRS. TR Diameter of rivet holes in {circ. seams 3. 1 1/2" F. 1 5/8" Pitch of rivets { 3. 3-9/16" F. 3-3/4" }
 Percentage of strength of circ. end seams {plate 83.5 rivets 47.8 } Percentage of strength of circ. intermediate seam {plate 85.16 rivets 89.3 }
 Percentage of strength of longitudinal joint {combined 88.4 } Working pressure of shell by Rules
 Thickness of butt straps {outer 1 3/4" inner 1 1/2" } No. and Description of Furnaces in each Boiler 3 Duglton
 Material S Tensile strength 26-30 Tons Smallest outside diameter 3'-11 7/8"
 Length of plain part {top 1 1/2" bottom 1 1/2" } Thickness of plates {crown 2 1/32" bottom 1/32" } Description of longitudinal joint butt
 Dimensions of stiffening rings on furnace or c.c. bottom 1 Working pressure of furnace by Rules
 End plates in steam space: Material S Tensile strength 26-30 Tons Thickness 1 3/8" Pitch of stays 20" x 22"
 How are stays secured Double nuts Working pressure by Rules
 Tube plates: Material {front S back S } Tensile strength { 26-30 Tons } Thickness { 29/32" }
 Mean pitch of stay tubes in nests 10 1/16" Pitch across wide water spaces 14" Working pressure {front 29/32" back 25/32" }
 Girders to combustion chamber tops: Material S Tensile strength 28-32 Tons Depth and thickness of girder
 at centre 22 8 1/2" x 4 1/2" Length as per Rule 2'-10 3/4" Distance apart 49" C. 1/2" No. and pitch of stays
 in each 32 8 1/2" Working pressure by Rules
 Tensile strength 26-30 Tons Thickness: Sides 2 1/32" Back 1 1/16" Top 2 1/32" Bottom 25/32"
 Pitch of stays to ditto: Sides 8 1/4" x 9" Back 8 x 9 1/2" Top 8 1/4" x 9" Are stays fitted with nuts or riveted over Into
 Working pressure by Rules 26-30 Tons Front plate at bottom: Material S Tensile strength 26-30 Tons
 Thickness 29/32" Lower back plate: Material S Tensile strength 26-30 Tons Thickness 29/32"
 Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over Into
 Working Pressure 28-32 Tons Main stays: Material S Tensile strength 28-32 Tons
 Diameter {At body of stay, or Over threads 2 1/2" x 3" } No. of threads per inch 6 Area supported by each stay
 Working pressure by Rules 26-30 Tons Screw stays: Material S Tensile strength 26-30 Tons
 Diameter {At turned off part, or Over threads 1 5/8" + 1 3/4" } No. of threads per inch 9 Area supported by each stay

Working pressure by Rules 200 & 228 Are the stays drilled at the outer ends 20. Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \frac{1}{2}$

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

Tubes: Material S External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \frac{3}{8}$ Thickness $\left\{ \begin{array}{l} \text{S.W.G.} \\ \frac{1}{4} : \frac{3}{16} : \frac{1}{8} \end{array} \right.$ No. of threads per inch 9

Pitch of tubes $4 \frac{1}{2} \times 4 \frac{1}{2}$; $4 \frac{1}{2} \times 4 \frac{3}{16}$ Working pressure by Rules Manhole compensation: Size of opening

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 Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

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 $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right.$

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 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
 Archd. H. Grierson Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \left\{ \begin{array}{l} \text{During erection on board vessel} \end{array} \right.$

SEE ACCOMPANYING MACHINERY REPORT.

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

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.)

This Boiler has been built under special survey and in accordance with the Rules. The materials and workmanship are good. On completion it has been tested by hydraulic pressure with satisfactory results.

This boiler has been efficiently fitted on board and the safety valve adjusted to 200 lbs/sq. in.

J. I. Campbell

Survey Fee £ See Quotation When applied for, 19

Travelling Expenses (if any) £ Repart. When received, 19

Geo. Brown for A. J. Brown
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 1 OCT 1941

Assigned SEE ACCOMPANYING MACHINERY REPORT.

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