

REPORT ON BOILERS.

54691
No. 54409

Received at London Office 18 APR 1934 -4 JUL 1934

Date of writing Report 19 When handed in at Local Office 16. 4. 1934 Port of Glasgow

No. in Reg. Book. 993 Survey held at Glasgow Date, First Survey 31. 1. 34 Last Survey 16-4-1934

on the new steel s/s 'THORN' (Number of Visits 13) Tons { Gross 347 Net 121

Master Built at Bowling By whom built Scott & Sons Yard No. 326 When built 1934

Engines made at Hydebank By whom made Crichton Blair & Co Ltd Engine No. 187 When made 1934

Boilers made at Glasgow By whom made Davis Rowan & Co Ltd Boiler No. 393 When made 1934

Nominal Horse Power 79 Owners Frontier Toun S. S Co Ltd Port belonging to Henry

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Chillers Ltd. (Letter for Record (S))

Total Heating Surface of Boilers 1489 sq ft Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers one single ended Working Pressure 205

Tested by hydraulic pressure to 358 Date of test 3-4-34 No. of Certificate 19355 Can each boiler be worked separately -

Area of Firegrate in each Boiler 50.80 sq ft No. and Description of safety valves to each boiler _____

Area of each set of valves per boiler { per Rule _____ as fitted _____ Pressure to which they are adjusted _____ Are they fitted with easing gear _____

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 _____ Is oil fuel carried in the double bottom under boilers _____

Smallest distance between shell of boiler and tank top plating _____ Is the bottom of the boiler insulated _____

Largest internal dia. of boilers 13'-0" Length 10'-0" Shell plates: Material steel Tensile strength 29-33 tons

Thickness 1 3/16" Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR inter. _____

long. seams DRS TR Diameter of rivet holes in { circ. seams F 1 3/16" B 1 1/4" Pitch of rivets { F 3.207" B 3.5" long. seams 1 1/4" 8 1/4"

Percentage of strength of circ. end seams { plate F 62.9 B 64.2 rivets F 46.2 B 46.8 Percentage of strength of circ. intermediate seam { plate _____ rivets _____

Percentage of strength of longitudinal joint { plate 84.8 rivets 92.8 combined 88.3 Working pressure of shell by Rules 206

Thickness of butt straps { outer 29" inner 1 1/2" No. and Description of Furnaces in each Boiler Three Weighton

Material steel Tensile strength 26-30 tons Smallest outside diameter 3'-2 7/8"

Length of plain part { top _____ bottom _____ Thickness of plates { crown 35" bottom 64" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom _____ Working pressure of furnace by Rules 208

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 3/32" Pitch of stays 17 1/2" x 15 1/2"

How are stays secured DN Working pressure by Rules 206

Tube plates: Material { front steel back _____ Tensile strength { 26-30 tons Thickness { 29" 25" 32" 32"

Mean pitch of stay tubes in nests 10.18" Pitch across wide water spaces 14" Working pressure { front 207 back 211

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder at centre 2 @ 6 3/4" x 7/8" Length as per Rule 28 9/16" Distance apart 8" No. and pitch of stays in each 2 @ 9 1/2" Working pressure by Rules 210 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 43" Back 21" Top 43" Bottom 1"

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

Working pressure by Rules 208 Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 29" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13"

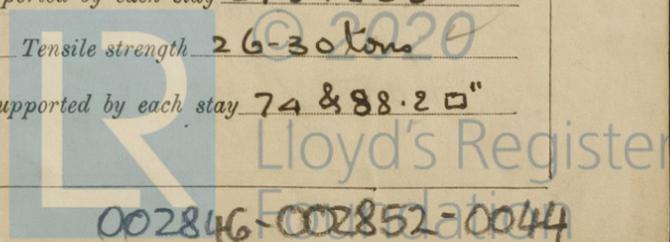
Pitch of stays at wide water space 13 1/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 217 Main stays: Material steel Tensile strength 28-32 tons

Diameter { At body of stay, 2 3/4" & 2 1/2" No. of threads per inch 6 Area supported by each stay 278 & 253 sq in Over threads 2 3/4" & 2 1/2"

Working pressure by Rules 235 & 211 Screw stays: Material steel Tensile strength 26-30 tons

Diameter { At turned off part, 1 5/8" & 1 3/4" No. of threads per inch 9 Area supported by each stay 74 & 88.2 sq in Over threads _____



Working pressure by Rules 206 & 205 Are the stays drilled at the outer ends no Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1\frac{3}{4}"$
 No. of threads per inch 9 Area supported by each stay 88.20" Working pressure by Rules 205
 Tubes: Material steel External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \begin{array}{l} 3\frac{1}{4}" \\ 3\frac{1}{4}" \end{array}$ Thickness $\left\{ \begin{array}{l} 8 \text{ W.S.} \\ \frac{1}{4}" \frac{5}{16}" \frac{3}{8}" \end{array} \right.$ No. of threads per inch 9
 Pitch of tubes 4 $\frac{1}{16}$ " x 4 $\frac{3}{8}$ " Working pressure by Rules 230 Manhole compensation: Size of opening
 shell plate 19 $\frac{1}{2}$ " x 15 $\frac{1}{2}$ " Section of compensating ring 10 $\frac{1}{2}$ " x 1 $\frac{3}{16}$ " No. of rivets and diameter of rivet holes 34 @ 1 $\frac{1}{2}$ "
 Outer row rivet pitch at ends 8 $\frac{3}{4}$ " Depth of flange if manhole flanged 3" 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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$ _____
 Internal diameter _____ Working pressure by Rules _____ Thickness of crown _____ No. and diameter of
 stays _____ 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 $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$ _____
 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 _____, 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. Manufacturers
 Arch. H. Grierson

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. 1934 \text{ Jan } 31 \text{ Feb. } 1. 5. 7. 9. 14$ Are the approved plans of boiler and superheater forwarded herewith
 while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right. 19. 26 \text{ Mar. } 13. 14. 28 \text{ Apr } 3. 16$ (If not state date of approval.)
 Total No. of visits 13

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The materials and workmanship are good.
The boiler has been constructed under special survey and will be fitted on board the vessel. Built
15/4/34

Survey Fee £ 9 : 18 : _____ When applied for, 17 APR 1934
 Travelling Expenses (if any) £ _____ : _____ : _____ When received, 19. 4. 34

S. C. Davis.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 17 APR 1934
 Assigned TRANSMIT TO LONDON

See accompanying mach.
 report. No. 52691
 Lloyd's Register
 Foundation