

## 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. Survey held at Glasgow Date, First Survey 31. 1. 34 Last Survey 16-4-1934  
on the new steel ship THORN (Number of Visits 13) Tons { Gross 347 Net 121  
Master Built at Bowling By whom built Scott & Son Yard No. 326 When built 1934  
Engines made at Clydebank By whom made Crichton Blair & Co. Ltd Engine No. 187 When made 1934  
Boilers made at Glasgow By whom made David Rowan & Co. Ltd Boiler No. 393 When made 1934  
Nominal Horse Power 79 Owners Frontier Town S. S. Co. Ltd Port belonging to Henry

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

Manufacturers of Steel L. Shillies 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 50.8 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. F3.207" B3.5"  
long. seams 1085 TR Diameter of rivet holes in { circ. seams F13 1/16" B1 1/4" Pitch of rivets { F3.207" B3.5" 8 1/4"  
Percentage of strength of circ. end seams { plate F62.9 B64.2 rivets F46.2 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" 32" inner 1 1/2" No. and Description of Furnaces in each Boiler Three Weigh-ton  
Material steel Tensile strength 26-30 tons Smallest outside diameter 3'-2 3/8"  
Length of plain part { top 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" 32" 25" 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" 64" Back 21" 32" Top 43" 64" 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" 32" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 13" 16"  
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 2788 & 2530  
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 & 88.20  
Over threads



Working pressure by Rules 206 & 205 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 1 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 { Plain 3 1/4" Stay 3 1/4" } Thickness { 8 w 9 } No. of threads per inch 9  
Pitch of tubes 4 1/16" x 4 3/8" Working pressure by Rules 230 Manhole compensation: Size of opening  
shell plate 19 1/2" x 15 1/2" Section of compensating ring 10 1/2" x 1 3/16" No. of rivets and diameter of rivet holes 34 @ 1 1/4"  
Outer row rivet pitch at ends 8 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 { 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 none 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 David Rowan & Co. Ltd. Manufacturer  
Arch. H. Grierson

Dates of Survey { During progress of work in shops - - } 1934 Jan 31 Feb. 1. 5. 7. 9. 14 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
while building { During erection on board vessel - - - } 19. 26 Mar. 13. 14. 28 Apr 3. 16 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.  
15/4/34

Survey Fee ... .. £ 9 : 18 :

Travelling Expenses (if any) £ : :

When applied for, 17 APR 1934

When received, 19. 4. 1934

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. 54691  
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