

# REPORT ON BOILERS.

APR 26 1939

Received at London Office

Date of writing Report 19 When handed in at Local Office 25. 4. 1939 Port of Glasgow  
 No. in Reg. Book. Survey held at Glasgow Date, First Survey 5. 8. 38 Last Survey 20. 4. 1939  
 on the new S/S "ADVISER" (Number of Visits 69) Tons {Gross 6348 Net 3886  
 Master Built at Port Glasgow By whom built Lithgows Ltd Yard No. 917 When built 1939  
 Engines made at Glasgow By whom made David Rowan & Co Ltd Engine No. 1029 When made 1939  
 Boilers made at Glasgow By whom made David Rowan & Co Ltd Boiler No. 1029 When made 1939  
 Nominal Horse Power 867 Owners T & J Harrison Port belonging to Liverpool

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

Manufacturers of Steel Steel Company of Scotland Ltd (Letter for Record T)  
 Total Heating Surface of Boilers 2805 sq ft Is forced draught fitted no Coal or Oil fired coal  
 No. and Description of Boilers one single ended Working Pressure 215  
 Tested by hydraulic pressure to 373 Date of test 10-1-39 No. of Certificate 20333 Can each boiler be worked separately -  
 Area of Firegrate in each Boiler 69 sq ft No. and Description of safety valves to each boiler two spring loaded. (ordinary)  
 Area of each set of valves per boiler {per Rule 15.244 sq in as fitted 16.59 sq in Pressure to which they are adjusted 220 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 2'3" Is oil fuel carried in the double bottom under boilers no  
 Smallest distance between shell of boiler and tank top plating 2'6" Is the bottom of the boiler insulated yes  
 Largest internal dia. of boilers 17'2" Length 12'0" Shell plates: Material S Tensile strength 31-35 tons  
 Thickness 1 35/64" 1 33/64" Are the shell plates welded or flanged no Description of riveting: circ. seams {end WTR lap inter. TR lap  
 long. seams T.R., D.B.S. Diameter of rivet holes in {circ. seams F 1 7/8" C 1 7/8" B 1 7/8" Pitch of rivets {F 3.7" C 4.658" B 4.658"  
 Percentage of strength of circ. end seams {plate F 61.1 B 65 rivets F 43 B 43.6 Percentage of strength of circ. intermediate seam {plate 65 rivets 63.8  
 Percentage of strength of longitudinal joint {plate F 84.03 B 84.52 rivets F 88.4 B 91.3 combined F 87.3 B 87.4 Working pressure of shell by Rules 216  
 Thickness of butt straps {outer F 1 1/32" B 1 3/16" inner F 1 1/32" B 1 5/16" No. and Description of Furnaces in each Boiler Three Deighton  
 Material S Tensile strength 26-30 tons Smallest outside diameter 4'3 17/32"  
 Length of plain part {top Thickness of plates {crown 49" Description of longitudinal joint welded bottom 64"  
 Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 218  
 End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 15/32" Pitch of stays 20 1/2" x 22 3/4"  
 How are stays secured WN Working pressure by Rules 216  
 Tube plates: Material {front S Tensile strength 26-30 tons Thickness {back " 1 19/16"  
 Mean pitch of stay tubes in nests 12 3/16" Pitch across wide water spaces 14 1/2" Working pressure {front 226 back 215  
 Girders to combustion chamber tops: Material S Tensile strength 29-33 tons Depth and thickness of girder at centre 2 @ 11 x 7/8" Length as per Rule 3 - 5 9/32" Distance apart 9 1/4" No. and pitch of stays in each 4 @ 8 1/2" Working pressure by Rules 215 Combustion chamber plates: Material S  
 Tensile strength 26-30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 1"  
 Pitch of stays to ditto: Sides 8 1/2" x 9 1/4" Back 10 1/4" x 8" Top 8 1/2" x 9 1/4" Are stays fitted with nuts or riveted over nuts  
 Working pressure by Rules 215 Front plate at bottom: Material steel Tensile strength 26-30 tons  
 Thickness 1" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 29/32"  
 Pitch of stays at wide water space 15 9/8" Are stays fitted with nuts or riveted over nuts  
 Working Pressure 219 Main stays: Material S Tensile strength 28-32 tons  
 Diameter {At body of stay, or Over threads 3 1/2" & 3 1/4" No. of threads per inch 6 Area supported by each stay 482 sq in & 416 sq in  
 Working pressure by Rules 225 & 223 Screw stays: Material Iron Tensile strength 2 1/2 tons  
 Diameter {At turned off part, or Over threads 1 3/4" 2" No. of threads per inch 9 Area supported by each stay 84 sq in & 98 sq in

Working pressure by Rules 222 & 218<sup>th</sup> Are the stays drilled at the outer ends no Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads. } 2" \& 2\frac{1}{4}" \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 97.5 Working pressure by Rules 218

Tubes: Material Iron External diameter  $\left\{ \begin{array}{l} \text{Plain } 3\frac{1}{2}" \\ \text{Stay } 3\frac{1}{2}" \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 2 \text{ W.S.} \\ 5\frac{1}{16}" \ 7\frac{1}{8}" \ 7\frac{1}{16}" \end{array} \right.$  No. of threads per inch 9

Pitch of tubes 4\frac{1}{8}" x 4\frac{1}{8}" Working pressure by Rules 260 Manhole compensation: Size of opening in shell plate 16 x 20 Section of compensating ring 11\frac{3}{4}" x 1\frac{33}{64}" No. of rivets and diameter of rivet holes 36 @ 1\frac{9}{8}"

Outer row rivet pitch at ends 10\frac{23}{32}" 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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

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 Smoke tube

Manufacturers of \_\_\_\_\_

For particulars see Gls. bul. N° 372678 mech N° C. 91  
copies herewith.

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 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 1.76 sq" Are the safety valves fitted with easing gear yes Working pressure as per Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted 230 Hydraulic test pressure: tubes \_\_\_\_\_ forgings and castings \_\_\_\_\_ and after assembly in place 430 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

The foregoing is a correct description,  
For David Rowan & Co. Ltd Manufacturer.  
Arch. H. Sierston

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

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

SEE ACCOMPANYING MACHINERY REPORT.

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. "Scientist" Gls Rpt. N° 60115

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, satisfactorily fitted in the vessel and its safety valves adjusted under steam.

Gib  
25/4/39

Survey Fee ... .. £ see Machinery Rpt When applied for, 19  
 Travelling Expenses (if any) £ see Machinery Rpt When received, 19

S. H. Davis

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 25 APR 1939

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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