

(See Leith Report No. 20514).

# REPORT ON BOILERS.

No. 64413

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19

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29. 9. 1941

Port of

Glasgow

No. in Survey held at

eg. Book.

on the

Master

Engines made at

Boilers made at

Nominal Horse Power

**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 Locomotive* Working Pressure *200 lb.*  
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 1/2 inch down spring*  
Area of each set of valves per boiler { per Rule *16.75 sq ft* as fitted *16.58 sq ft* Pressure to which they are adjusted *200 lb.* 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 *8. 1 1/2" F. 1 5/8"* Pitch of rivets { *8. 3-4" F. 3-3 1/4"* 9 1/2"  
Percentage of strength of circ. end seams { plate *83.5: 84.6* rivets *47.8: 46.5* Percentage of strength of circ. intermediate seam { plate *85.16* rivets *89.3* combined *88.4*  
Percentage of strength of longitudinal joint { plate *85.16* rivets *89.3* 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 Draught*  
Material *S* Tensile strength *26-30 Tons* Smallest outside diameter *3'-11 1/8"*  
Length of plain part { top — bottom — 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 — 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 Int.* Working pressure by Rules —  
Tube plates: Material { front *S* back *S* Tensile strength { *26-30 Tons* Thickness { *29. 3/16"* 25. 3/16"  
Mean pitch of stay tubes in nests *10 1/16"* Pitch across wide water spaces *14"* Working pressure { front *29. 3/16"* back *25. 3/16"*  
Girders to combustion chamber tops: Material *S* Tensile strength *28-32 Tons* Depth and thickness of girder —  
at centre *22 8 1/2" x 7 1/2"* Length as per Rule *2'-10 3/4"* Distance apart *49" C. 4 1/2"* No. and pitch of stays —  
in each *32 8 1/4"* Working pressure by Rules — Combustion chamber plates: Material *S*  
Tensile strength *26-30 Tons* Thickness: Sides *2 1/32"* Back *1 1/16"* Top *2 1/32"* Bottom *25 3/32"*  
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 *Int.*  
Working pressure by Rules — Front plate at bottom: Material *S* Tensile strength *26-30 Tons*  
Thickness *29 3/32"* Lower back plate: Material *S* Tensile strength *26-30 Tons* Thickness *29 3/32"*  
Pitch of stays at wide water space *13 1/2"* Are stays fitted with nuts or riveted over *Int.*  
Working Pressure *200 lb.* Main stays: Material *S* Tensile strength *28-32 Tons*  
Diameter { At body of stay, *3 1/4" x 3"* No. of threads per inch *6* Area supported by each stay —  
Over threads — Screw stays: Material *S* Tensile strength *26-30 Tons*  
Working pressure by Rules — No. of threads per inch *9* Area supported by each stay —  
Diameter { At turned off part, *1 5/8" + 1 3/4"* No. of threads per inch *9*

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Working pressure by Rules 200 & 228 Are the stays drilled at the outer ends 20. Margin stays: Diameter { At turned off part, or Over threads 1 1/2" }  
No. of threads per inch 9 Area supported by each stay Working pressure by Rules  
Tubes: Material S External diameter { Plain 3" Stay 3" } Thickness { 1/4" 5/16" 3/8" } No. of threads per inch 9  
Pitch of tubes 4 1/2" x 4 1/2" 4 1/2" x 4 3/8" 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 { 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 Manufacturers of { Tubes Steel forgings 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 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. Manufacturer.  
Archd. H. Grierson

Dates of Survey { During progress of work in shops - - }  
while building { During erection on board vessel - - }

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 result.

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

J. I. Campbell

Survey Fee £ Sec. Inst. When applied for, 19  
Travelling Expenses (if any) £ Rept. When received, 19

Committee's Minute GLASGOW 1 OCT 1941

Assigned SEE ACCOMPANYING MACHINERY REPORT.

For David Rowan & Co. Ltd. in A. J. Brown  
Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 17 OCT 1941

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