

# REPORT ON BOILERS.

No. 66469

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15/6/17.2  
 19 When handed in at Local Office 21.12. 1942 Port of *Glasgow*  
 Survey held at *Glasgow & Greenock* Date, First Survey *26 Aug 1942* Last Survey *16th Dec 1942*  
 on the *S/S "EMPIRE PENNANT"* (Number of Visits *1*) Gross *7043.49* Tons Net *4908.57*  
 Built at *Pt. Glasgow* By whom built *Lithgows Ltd.* Yard No. *972* When built *1942*  
 made at *Glasgow* By whom made *David Brown & Co. Ltd.* Engine No. *1117* When made *1942*  
 made at *-do-* By whom made *-do-* Boiler No. *1117* When made *1942*  
 Horse Power *558* Owners *Ministry of War Transport* Port belonging to *Greenock*

## TITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

11522  
 Manufacturers of Steel *Colvilles Ltd.* (Letter for Record *S*)  
 Heating Surface of Boilers *2416 sq ft* Is forced draught fitted *Yes* Coal or Oil fired *Coal*  
 Description of Boilers *1 - Single-ended* Working Pressure *220 lb.*  
 by hydraulic pressure to *380 lb.* Date of test *25-4-42* No. of Certificate *21040* Can each boiler be worked separately *-*  
 of Firegrate in each Boiler *55 sq ft* No. and Description of safety valves to each boiler *1-3" direct*  
 of each set of valves per boiler *per Rule 12.80" as fitted 14.120"* Pressure to which they are adjusted *220 lb.* Are they fitted with easing gear *Yes*  
 use of donkey boilers, state whether steam from main boilers can enter the donkey boiler *-*  
 least distance between boilers or uptakes and bunkers or woodwork *24"* Is oil fuel carried in the double bottom under boilers *no*  
 least distance between shell of boiler and tank top plating *26"* Is the bottom of the boiler insulated *Yes*  
 External dia. of boilers *15'-3"* Length *11'-6"* Shell plates: Material *S* Tensile strength *29/33 tons*  
 Thickness *1 7/16"* Are the shell plates welded or flanged *no* Description of riveting: circ. seams *end double*  
 seams *DBS TR* Diameter of rivet holes in *circ. seams B 1 1/2" F 1 3/8" long. seams 1 1/2"* Pitch of rivets *B 4.13" F 3.435"*  
 Percentage of strength of circ. end seams *plate B 63.68 F 60 rivets 47.2 47.8* Percentage of strength of circ. intermediate seam *plate rivets 85.36 89*  
 Percentage of strength of longitudinal joint *combined 88.6* Working pressure of shell by Rules  
 Thickness of butt straps *outer 1 3/32" inner 1 1/32"* No. and Description of Furnaces in each Boiler *3 Saighton*  
 Material *S* Tensile strength *26/30 tons* Smallest outside diameter *3'-9 3/8"*  
 Length of plain part *top bottom* Thickness of plates *crown 11/16" bottom* Description of longitudinal joint *Welder*  
 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 *22 1/16"*  
 How are stays secured *D.N.* Working pressure by Rules  
 Tube plates: Material *front S back* Tensile strength *26/30 tons* Thickness *15/16"*  
 Lean pitch of stay tubes in nests *9.66"* Pitch across wide water spaces *14"* Working pressure *front back*  
 Girders to combustion chamber tops: Material *S* Tensile strength *28/32 tons* Depth and thickness of girder  
 at centre *20 8 3/4" x 7/8"* Length as per Rule *2'-9 1/2"* Distance apart *8"* No. and pitch of stays  
 in each *30 8 1/4"* Working pressure by Rules  
 Combustion chamber plates: Material *S*  
 Tensile strength *26/30 tons* Thickness: Sides *2 1/32"* Back *2 3/32"* Top *2 1/32"* Bottom *1 3/16"*  
 Pitch of stays to ditto: Sides *8" x 8 1/4"* Back *8" x 10"* Top *8" x 8 1/4"* Are stays fitted with nuts or riveted over *Nuts*  
 Working pressure by Rules  
 Front plate at bottom: Material *S* Tensile strength *26/30 tons*  
 Thickness *15/16"* Lower back plate: Material *S* Tensile strength *26/30 tons* Thickness *13/16"*  
 Pitch of stays at wide water space *13 7/16"* Are stays fitted with nuts or riveted over *Nuts*  
 Working Pressure  
 Main stays: Material *S* Tensile strength *28/32 tons*  
 Diameter *At body of stay, or Over threads 3" & 3 1/4"* No. of threads per inch *6* Area supported by each stay  
 Working pressure by Rules  
 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  
No. of threads per inch 9  
Tubes: Material S  
Pitch of tubes 4 1/8" x 4 3/16"  
shell plate  
Outer row rivet pitch at ends  
Tensile strength  
Diameter of rivet holes  
Internal diameter  
stays  
How connected to shell  
of rivets in outer row in dome connection to shell  
Are the stays drilled at the outer ends no  
Area supported by each stay  
External diameter { Plain 3" Stay 3"  
Working pressure by Rules  
Section of compensating ring  
Depth of flange if manhole flanged 4"  
Thickness of shell  
Pitch of rivets  
Working pressure by Rules  
Inner radius of crown  
Size of doubling plate under dome  
Margin stays: Diameter { At turned off part, 1 7/8" or Over threads  
Working pressure by Rules  
Thickness { 1/4", 5/16", 3/8"  
No. of threads per inch 9  
Manhole compensation: Size of  
No. of rivets and diameter of rivet holes  
Steam Dome: Material  
Description of longitudinal joint  
Percentage of strength of joint { Plate Rivets  
Thickness of crown  
Working pressure by Rules  
No. and diameter of rivets  
Diameter of rivet holes  
Type of Superheater  
Number of elements  
Material of headers  
the boiler be worked separately  
Area of each safety valve  
Rules  
tubes  
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  
Manufacturers of { Tubes Steel forgings Steel castings  
Internal diameter and thickness of tubes  
Thickness  
Can the superheater be shut off from the boiler  
Is a safety valve fitted to every part of the superheater which can be shut off from the boiler  
Are the safety valves fitted with easing gear  
Pressure to which the safety valves are adjusted  
forgings and castings  
and after assembly in place  
Working pressure  
Hydraulic test pressure  
Are drain valves fitted to free the superheater from water where necessary

The foregoing is a correct description,  
For David Rowan & Co. Ltd.  
Arch. W. Grier

Dates of Survey { During progress of work in shops - - - During erection on board vessel - - -  
Are the approved plans of boiler and superheater forwarded herewith Yes  
(If not state date of approval.)  
Total No. of visits

Is this Boiler a duplicate of a previous case Yes  
If so, state Vessel's name and Report No. "Empire Lancer" Gls. Rpt. No. 66336

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
This boiler has been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. It has been efficiently installed in the vessel and the safety valves have been adjusted to the working pressure.  
The specification requirements have been carried out satisfactorily.

986  
2/12/42

Survey Fee ... £  
Travelling Expenses (if any) £  
When applied for, 10  
When received, 10

W. J. Brown & W. Caldwell  
Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute GLASGOW 22 DEC 1942

Assigned. SEE ACCOMPANYING MACHINERY REPORT.