

REPORT ON BOILERS.

No. 66469

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15/16/17/2
 Date of Report 21.12.1942 Port of Glasgow
 Survey held at Glasgow & Greenock Date, First Survey 26th July 1942 Last Survey 16th Dec. 1942
 on the S/S "EMPIRE PENNANT" (Number of Visits) 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 Working Pressure 220 lb.
 Description of Boilers 1 - Single-ended
 Tested 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 inter. -
 seams DBS TR Diameter of rivet holes in {circ. seams B 1 1/2" F 1 3/8" Pitch of rivets { B 4.13" F 3.435" long. seams 1 1/2"
 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
 Percentage of strength of longitudinal joint {plate 85.36 rivets 89 Working pressure of shell by Rules combined 88.6
 Thickness of butt straps {outer 1 3/32" inner 1 7/32" No. and Description of Furnaces in each Boiler 3 Saighton
 Serial B Tensile strength 26/30 tons Smallest outside diameter 3'-9 3/8"
 Length of plain part {top bottom Thickness of plates {crown 1 1/16" bottom Description of longitudinal joint welded
 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' 16 1/4"
 How are stays secured D.N. Working pressure by Rules
 Tube plates: Material {front S back S Tensile strength { 26/30 tons Thickness { 15/16" 25/32"
 Mean 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 3 @ 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, 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, 1 5/8" & 1 3/4" No. of threads per inch 9 Area supported by each stay



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Working pressure by Rules *Are the stays drilled at the outer ends* *no* Margin stays: Diameter *At turned off part, or Over threads* *1 7/8"*

No. of threads per inch *9* Area supported by each stay *3"* Working pressure by Rules *8 W 9*

Tubes: Material *S* External diameter *Plain 3"* Thickness *1/4", 5/16", 3/8"* No. of threads per inch *9*

Pitch of tubes *4 1/8" x 4 3/16"* Working pressure by Rules *Manhole compensation: Size of 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 *4"* 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 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 the boiler be worked separately

Area of each safety valve Is a safety valve fitted to every part of the superheater which can be shut off from the boiler.

Rules Are the safety valves fitted with easing gear Working pressure

tubes forgings and castings and after assembly in place Hydraulic test pressure

valves fitted to free the superheater from water where necessary Are drain 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. Manuf.
 Arch. W. Grierison

Dates of Survey *During progress of work in shops - -* Are the approved plans of boiler and superheater forwarded herewith *Yes*
while building *During erection on board vessel - - -* (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. Rep. 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 specifications requirements have been carried out satisfactorily.

986
21/12/42

Survey Fee ... £ *See mach. & mpt.* When applied for, 10
 Travelling Expenses (if any) £ *See mach. & mpt.* When received, 10

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

Committee's Minute **GLASGOW 22 DEC 1942**

Assigned. **SEE ACCOMPANYING MACHINERY REPORT.**

