

REPORT ON BOILERS.

No. 65040

Received at London Office 19 MAR 1942

Date of writing Report *7th Feb. 1942* When handed in at Local Office *16.3.1942* Port of *Glasgow*

No. in Survey held at *Glasgow* Date, First Survey *3.4.41* Last Survey *9.3.1942*

eg. Book. *SS. "EMPIRE MAIDEN"* (Number of Visits *51*) Gross *813* Tons Net *333*

on the

Master Built at *Glasgow* By whom built *Messrs R & J Inglis* Yard No. *1151P* When built *1942*

Engines made at *Glasgow* By whom made *Messrs David Rowan & Co Ltd* Engine No. *1087* When made *1942*

Boilers made at *Glasgow* By whom made *Messrs David Rowan & Co Ltd* Boiler No. *1087* When made *1942*

Nominal Horse Power *139* Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Colvilles Ltd* (Letter for Record *S*)

Total Heating Surface of Boilers *2100 sq ft* Is forced draught fitted *Yes* Coal or Oil fired *Oil*

No. and Description of Boilers *One Single Ended* Working Pressure *190 LBS/SQ*

Tested by hydraulic pressure to *335 LBS/SQ* Date of test *1-12-41* No. of Certificate *20890* Can each boiler be worked separately *Yes*

Area of Firegrate in each Boiler *12.80* No. and Description of safety valves to each boiler *2- 3 1/4" dia. double spring*

Area of each set of valves per boiler *16.590* Pressure to which they are adjusted *190 LBS/SQ* 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 *Yes* Is oil fuel carried in the double bottom under boilers *No*

Smallest distance between shell of boiler and tank top plating *Yes* Is the bottom of the boiler insulated *Yes*

Largest internal dia. of boilers *14'-6"* Length *11'-6"* Shell plates: Material *S* Tensile strength *29/33 TONS/SQ*

Thickness *1 7/32"* Are the shell plates welded or flanged *No* Description of riveting: circ. seams *end 3.528" B, 3.2" F*
inter. 8 15/16"

long. seams *TROBS* Diameter of rivet holes in *circ. seams 1 5/16" B, 1 3/16" F*
long. seams 1 3/16" Pitch of rivets *8 15/16"*

Percentage of strength of circ. end seams *plate 62.7 B; 62.9 F*
rivets 50.1 B; 45.0 F Percentage of strength of circ. intermediate seam *plate*
rivets

Percentage of strength of longitudinal joint *plate 85.3*
rivets 92.5 Working pressure of shell by Rules *combined 89.1*

Thickness of butt straps *outer 5 9/64"*
inner 1 3/64" No. and Description of Furnaces in each Boiler *3 Reighton Section*

Material *S* Tensile strength *26/30 TONS/SQ* Smallest outside diameter *3'-6 7/8"*

Length of plain part *top* *bottom* Thickness of plates *crowns 9/16"*
bottom Description of longitudinal joint *welded*

Dimensions of stiffening rings on furnace or c.c. bottom *Yes* Working pressure of furnace by Rules

End plates in steam space: Material *S* Tensile strength *26/30 TONS/SQ* Thickness *1/4"* Pitch of stays *20 1/2" x 15"*

How are stays secured *Double nuts* Working pressure by Rules

Tube plates: Material *front S*
back Tensile strength *26/30 TONS/SQ* Thickness *27/32"*
3/4"

Mean pitch of stay tubes in nests *9.9"* Pitch across wide water spaces *13 3/4"* Working pressure *front*
back

Girders to combustion chamber tops: Material *S* Tensile strength *28/32 TONS/SQ* Depth and thickness of girder

at centre *10" x 7 7/8" x 2* Length as per Rule *3'-3 9/16"* Distance apart *9 1/4" W, 8" C* No. and pitch of stays

in each *3 @ 10"* Working pressure by Rules *Combustion chamber plates: Material S*

Tensile strength *26/30 TONS/SQ* Thickness: Sides *23/32"* Back *1 1/16"* Top *23/32"* Bottom *23/32"*

Pitch of stays to ditto: Sides *10" x 9 1/4"* Back *9 3/4" x 8 1/4"* Top *10" x 9 1/4"; 10" x 8"* Are stays fitted with nuts or riveted over *Nuts*

Working pressure by Rules *Front plate at bottom: Material S* Tensile strength *26/30 TONS/SQ*

Thickness *27/32"* Lower back plate: Material *S* Tensile strength *26/30 TONS/SQ* Thickness *25/32"*

Pitch of stays at wide water space *13 1/2"* Are stays fitted with nuts or riveted over *Nuts*

Working Pressure *Main stays: Material S* Tensile strength *28/32 TONS/SQ*

Diameter *At body of stay, 2 @ 3"; 8 @ 2 3/4"*
Over threads No. of threads per inch *6* Area supported by each stay *20 1/2" x 18 1/2"*

Working pressure by Rules *Screw stays: Material S* Tensile strength *26/30 TONS/SQ*

Diameter *At turned off part, 1 5/8"*
Over threads 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 Margin stays: Diameter At turned off part, Over threads $1\frac{3}{4}$ " $1\frac{1}{8}$ " top a 2" inside top corner

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

Tubes: Material S External diameter Plain $2\frac{3}{4}$ " Stay Thickness $\frac{9}{16}$ " $\frac{7}{8}$ " No. of threads per inch 9

Pitch of tubes $4" \times 3\frac{7}{8}"$ Working pressure by Rules Manhole compensation: Size of opening in shell plate $19\frac{1}{2}" \times 15\frac{1}{2}"$ Section of compensating ring Flanged Plate $1\frac{1}{2}"$ No. of rivets and diameter of rivet holes 84 - $1\frac{5}{16}"$

Outer row rivet pitch at ends $8\frac{5}{16}"$ 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

How connected to shell Inner radius of crown Working pressure by Rules

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. N. Grierson

Dates of Survey During progress of work in shops - - 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 Yes If so, state Vessel's name and Report No. SS. "EMPIRE BARN" Gls Rpt. No. 64862

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under Special Survey in accordance with the Approved Plan the Society's Rules and the Specification. The material and workmanship are good. The boiler has been satisfactorily fitted on board Messrs A. J. Inglis ship No 1151 - S.S. EMPIRE MAIDEN.

Gwb
16/3/42

Survey Fee £ See Encl. : } When applied for, 19

Travelling Expenses (if any) £ Report : } When received, 19

JR Dale & A. Gibberon
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 17 MAR 1942

Assigned SEE ACCOMPANYING MACHINERY REPORT.

