

REPORT ON BOILERS.

No. 65040

Received at London Office 19 MAR 1942

9 = 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

101.F-27
11-41

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

2 41

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 in

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

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler 2- 3 1/4" dia. double spring

Area of each set of valves per boiler

per Rule 12.8 sq ft as fitted 16.59 sq ft Pressure to which they are adjusted 190 LBS/sq in 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

Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers

14'-6"

Length

11'-6"

Shell plates: Material

S

Tensile strength

29/32 Tons/sq in

Thickness

1 7/32"

Are the shell plates welded or flanged No

Description of riveting: circ. seams

end

OR. top

long. seams

TR. OBS.

Diameter of rivet holes in

circ. seams 1 5/16" B 1 3/16" F

Pitch of rivets

3.528" B 3.2" F

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

Percentage of strength of longitudinal joint

plate 85.3

rivets 92.5

combined 89.1

Working pressure of shell by Rules

Thickness of butt straps

outer 5 9/16"

inner 1 3/4"

No. and Description of Furnaces in each Boiler

3 Reighton Section

Material

S

Tensile strength

26/30 Tons/sq in

Smallest outside diameter

3'-6 7/8"

Length of plain part

top

bottom

Thickness of plates

crown 9/16"

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/sq in

Thickness

1/4"

Pitch of stays 20 1/2" x 15"

How are stays secured

Double nuts

Working pressure by Rules

27/32"

Tube plates: Material

front S

back

Tensile strength

26/30 Tons/sq in

Thickness

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 in

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 in

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 in

Thickness

27/32"

Lower back plate: Material

S

Tensile strength

26/30 Tons/sq in

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 in

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 in

Diameter

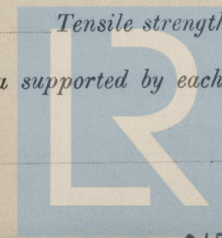
At turned off part, 1 5/8"

Over threads

No. of threads per inch

9

Area supported by each stay



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Working pressure by Rules *10* Are the stays drilled at the outer ends *10* Margin stays: Diameter { At turned off part, *1 3/4"*, *1 1/8"* top *2"* inside top corner
Over threads *1 3/4"*, *1 1/8"* top *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 3/4"* Thickness { *9/16"*, *7/8"* No. of threads per inch *9*
Pitch of tubes *4" x 3 7/8"* Working pressure by Rules Manhole compensation: Size of opening in
shell plate *19 1/2" x 15 1/2"* Section of compensating ring *flanged plate 1 1/2"* No. of rivets and diameter of rivet holes *34 - 1 5/16"*
Outer row rivet pitch at ends *8 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 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 T. G. L.
Archd. N. Grierson Manufacturer.

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 *Yes* If so, state Vessel's name and Report No. *SS. "EMPIRE BARN" Sls 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 -
SS. EMPIRE MAIDEN.*

Gwb
16/3/42

Survey Fee ... £ *See Encl. :* When applied for, 19
Travelling Expenses (if any) £ *Report :* When received, 19

JR Dale & P. Giberson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 17 MAR 1942

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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