

REPORT ON BOILERS.

No. 58800

Received at London Office

SEP 8 1937

Date of writing Report

19

When handed in at Local Office

4.9.1937

Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey

2.11.36

Last Survey

30th Sep. 1937

15469

on the Exhaust Heat Boiler E.W. 109

M.V. TREVALGAN

(Number of Visits 68)

Gross 5350

Net 5299

3120

Master

Built at P. Glasgow

By whom built Lithgow & Co

Yard No. 898

When built

Engines made at

Glasgow

By whom made

Barclay Curle & Co

Engine No. 109

When made

Boilers made at

Glasgow

By whom made

Barclay Curle & Co

Boiler No. 109

When made 1937

Nominal Horse Power

Owners

Hain & Co. Ltd.

Port belonging to

London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

L Colville & Son

Total Heating Surface of Boilers

1183 sq. ft.

Is forced draught fitted

No

(Letter for Record (S) -)

Coal or Oil fired

Both

No. and Description of Boilers

1. Exhaust Heat Boiler

Working Pressure

120 lb.

Tested by hydraulic pressure to

230 lb.

Date of test 15/2/37

No. of Certificate 19910

Can each boiler be worked separately

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Double - Imp. High Lift

Area of each set of valves per boiler

per Rule

10.95 sq. ft.

as fitted

Pressure to which they are adjusted

120 lb. per 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

No main boilers

Smallest distance between boilers or uptakes and bunkers or woodwork

2 ft.

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

2 ft. 6 ins.

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

9' 9"

Length

10' 6"

Shell plates: Material

Steel

Tensile strength

29/33 Tons

Thickness

9/16"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

Long. seams

T.R. - D.B.S.

Diameter of rivet holes in

circ. seams

13/16"

3/4"

Pitch of rivets

2.978"

5"

Percentage of strength of circ. end seams

plate

rivets

42.71

49.05

85.0

Percentage of strength of circ. intermediate seam

plate

rivets

89.61

Percentage of strength of longitudinal joint

plate

rivets

98.05

89.61

Working pressure of shell by Rules

122 lb.

Thickness of butt straps

outer

7/16"

inner

9/16"

No. and Description of Furnaces in each Boiler

1 - Heighton Section

Material

Steel

Tensile strength

26-30 Tons

Smallest outside diameter

3'-1 1/4"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

Description of longitudinal joint

weld.

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

141 lb.

End plates in steam space: Material

Steel

Tensile strength

26-30 Tons

Thickness

25/32"

Pitch of stays

16" x 14"

How are stays secured

D.N.

Working pressure by Rules

123 lb.

Tube plates: Material

front

back

Steel

Tensile strength

26-30 Tons

Thickness

32"

11/16"

Lean pitch of stay tubes in nests

9"

Pitch across wide water spaces

13 3/8"

Working pressure

front

back

165 lb.

153 lb.

Orders to combustion chamber tops: Material

Steel

Tensile strength

26-30 Tons

Depth and thickness of girder

2 1/2"

11/16"

centre

7 7/8" x 17/32" db

Length as per Rule

2'-9 9/32"

Distance apart

9 1/2"

No. and pitch of stays

each

2 @ 10 1/2"

Working pressure by Rules

120 lb.

Combustion chamber plates: Material

Steel

Tensile strength

26-30 Tons

Thickness: Sides

19/32"

Back

19/32"

Top

19/32"

Bottom

19/32"

Pitch of stays to ditto: Sides

10 1/2" x 9 1/2"

Back

10 1/2" x 9 1/2"

Top

10 1/2" x 9 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

120 lb.

Front plate at bottom: Material

Steel

Tensile strength

26-30 Tons

Thickness

25/32"

Lower back plate: Material

Steel

Tensile strength

26-30 Tons

Thickness

25/32"

Pitch of stays at wide water space

13 3/8"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

130 lb.

Main stays: Material

Steel

Tensile strength

28-32 Tons

Diameter

At body of stay

2 1/8"

Over threads

No. of threads per inch

6

Area supported by each stay

224 sq. in.

Working pressure by Rules

135 lb.

Screw stays: Material

Steel

Tensile strength

26-30 Tons

Diameter

At turned off part

1 1/2"

Over threads

No. of threads per inch

9

Area supported by each stay

99.7 sq. in.

Working pressure by Rules 126 lb Are the stays drilled at the outer ends *no* Margin stays: Diameter $15/8"$
No. of threads per inch 9 Area supported by each stay 115 sq in Working pressure by Rules 132 lb
Tubes: Material *Steel S.D.* External diameter $3" \times 13/4"$ Thickness $3/8" - 7/16" - 1/4"$ No. of threads per inch 9
Pitch of tubes $2 1/8" \times 2 3/4"$ Working pressure by Rules 140 lb Manhole compensation: Size of opening in
shell plate $20" \times 16"$ Section of compensating ring $2'9" \times 2'5" \times 9/16"$ No. of rivets and diameter of rivet holes $44 - 7/8"$
Outer row rivet pitch at ends $5 1/2"$ Depth of flange if manhole flanged $4"$ Steam Dome: Material *None*
Tensile strength Thickness of shell Description of longitudinal joint
Diameter of rivet holes Pitch of rivets Percentage of strength of joint
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

Number of elements Material of tubes Manufacturers of Tubes
Material of headers Tensile strength Steel forgings
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
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 BARCLAY, CURLE & CO., LTD.

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

SEE ACCOMPANYING

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. *Queen Adelaide Gls 5749*

GENERAL REMARKS

(State quality of workmanship, opinions as to class, &c.) *This boiler has been built under special survey, to approved plans in accordance with the Society's Rules. Materials and workmanship are good. It has been properly fitted on board, examined under steam & the safety valves have been adjusted to the working pressure: Adjusting washers - $1/2$ inch $5/16$ inch.*

Survey Fee ... £ $7/14/0$
Travelling Expenses (if any) £

When applied for, **7-SEP-1937**
When received, *30/10/37*

H. Luthurst & J. Boyle
Engineers/Surveyors to Lloyd's Register of Shipping

Committee's Minute **GLASGOW 7-SEP-1937**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**