

REPORT ON BOILERS.

No. 17297.

Received at London Office

1- DEC 1942

Date of writing Report 26/7/42 When handed in at Local Office 27/7/42 Port of MIDDLESBROUGH.

No. in Survey held at
Reg. Book

Stockton

Date, First Survey 23rd Dec. 1941 Last Survey 17th July, 1942

on the M.Y. "EMPIRE CAVALIER"

(Number of Visits 14)

Gross
Tons
Net

Built at Sunderland By whom built Sir J. Laing & Sons Ltd Yard No. 743 When built 1942
Engines made at Newcastle By whom made Hawthorn Leslie & Co Ltd Engine No. 3982 When made 1942
Boilers made at Stockton By whom made Stockton Chem. Engs. & Riley Boilers Ltd Boiler No. 6608 When made 1942
Owners Ministry of War Transport Port belonging to Sunderland

VERTICAL DONKEY BOILER [HELVIN THIMBLE TUBE]

Made at Stockton By whom made Stockton Chem. Engs. & Riley Boilers Ltd Boiler No. 6608 When made 1942 Where fixed

Manufacturers of Steel Appleby - Frodingham Steel Co Ltd

Total Heating Surface of Boiler 478 sq ft

Is forced draught fitted NO.

Ex: GAS

Fuel Oil fired YES.

No. and Description of Boilers 1 - "HELVIN" Thimble Tube

Working pressure 180 lb/sq in

Tested by hydraulic pressure to 320 lb/sq in

Date of test 17/7/42

No. of Certificate 7052

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler 1 Double 1 3/4" dia

Area of each set of valves per boiler

per rule 3.52 3.07
as fitted 4.8

Pressure to which they are adjusted 185

Are they fitted with easing gear YES

State whether steam from main boilers can enter the donkey boiler

Smallest distance between boiler or uptake and bunkers

or woodwork

Is oil fuel carried in the double bottom under boiler NO

Smallest distance between base of boiler and tank top plating

Is the base of the boiler insulated

Largest internal dia. of boiler 6' 7 1/4"

Height 16' 9"

Shell plates: Material Steel

Tensile strength 29/33

Thickness 5/8"

Are the shell plates welded or flanged NO

Description of riveting: circ. seams

end DR.

long. seams DR- DBS

Dia. of rivet holes in

circ. seams 1 1/16"

Pitch of rivets 1 5/16"

Top. 3.224 3.276
Bot. 3.625 3.676

Percentage of strength of circ. seams

plate 67.57
rivets 69.76-69.67

Longitudinal joint

plate 74.4
rivets 73.78, 75.6
combined

Working pressure of shell by rules 180.5

Thickness of butt straps

outer 5/8"

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Dished

Material Steel

Tensile strength 26/30

Thickness 17/32"

Radius 6' 0"

Working pressure by rules 184

Description of Furnace: Plain, spherical, or dished crown Plain

Material Steel

Tensile strength 26/30

Thickness 1 5/8"

External diameter

top 4' 0"

Length as per rule 7' 4 1/2"

Working pressure by rules

Pitch of support stays circumferentially

and vertically

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Radius of spherical or dished furnace crown

Working pressure by rule

Thickness of Ogee Ring 1 11/32"

Diameter as per rule

D 78"

Working pressure by rule

Combustion Chamber: Material

Tensile strength

Thickness of top plate

Radius if dished

Working pressure by rule

Thickness of back plate

Diameter if circular

Length as per rule

Pitch of stays

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Working pressure of back plate by rules

Tube Plates: Material

front

Tensile strength

Thickness

Mean pitch of stay tubes in nests

If comprising shell, Dia. as per rule

front

Pitch in outer vertical rows

Dia. of tube holes FRONT

stay

BACK

stay

Is each alternate tube in outer vertical rows a stay tube

Working pressure by rules

front

back

Girders to combustion chamber tops: Material

Tensile strength

Depth and thickness of girder at centre

Length as per rule

Distance apart

No. and pitch of stays in each

Working pressure by rule

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Foundation

Crown stays: Material _____ Tensile strength _____ Diameter { at body of stay _____
 or _____
 over threads _____
 No. of threads per inch _____ Area supported by each stay _____ Working pressure by rules _____
Screw stays: Material _____ Tensile strength _____ Diameter { at turned off part _____
 or _____
 over threads _____ No. of threads per inch _____
 Area supported by each stay _____ Working pressure by rules _____ Are the stays drilled at the outer ends _____
Tubes: Material _____ External diameter { plain _____ Thickness { _____
 stay _____
 No. of threads per inch _____ Pitch of tubes _____ Working pressure by rules _____
Manhole Compensation: Size of opening in shell plate CROWN 16" x 12" Section of compensating ring ✓ No. of rivets and diameter _____
 of rivet holes ✓ Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 3 3/4"
Uptake: External diameter 2' 3" Thickness of uptake plate 13/16"
Cross Tubes: No. _____ External diameters { _____ Thickness of plates _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with _____

The foregoing is a correct description,
 STOCKTON CHEMICAL ENGINEERS & RILEY BOILERS LTD,

Manufacturer.

DIRECTOR.

Dates of Survey { During progress of work in shops - 1941, Dec. 23. 30. 1942 Jan. 4. 12. Feb. 6. 19. 24. Is the approved plan of boiler forwarded herewith Yes.
 while building { During erection on board vessel - - - - - March 3. 14. April 3. 21. May 15. June 10. July 14. (If not state date of approval.)
 Total No. of visits 14

Is this Boiler a duplicate of a previous case. Yes If so, state Vessel's name and Report No. _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This boiler has been constructed under Special Survey & in accordance with the Rule Requirements & approved plan.

The materials & workmanship are good & on completion the boiler was hydraulically tested to 320 lbs/sq. in. & found satisfactory.

(This boiler has been forwarded to the North Eastern Marine Eng. Co. Ltd. - Liverpool - on 7 Jan to be installed in Hawthorn Leslie's Contract No 3982.

This boiler has been installed under Special Survey & found satisfactory under working conditions all Rule & Specification Requirements have been complied with. B. Moffatt

Survey Fee ... £ 4 : 4 : _____ When applied for, 28 July 1942
 Travelling Expenses (if any) £ : : _____ When received, 19

B. Norman Stuart
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 8 DEC 1942

Assigned

See Sld. JE 33544