

REPORT ON BOILERS.

No. 17878

Received at London Office

9 JUL 1945

Date of writing Report 3rd July 1945 When handed in at Local Office 7th July 1945 Port of Middlesbrough

No. in Reg. Book. Surrey held at Stockton-on-Tees Date, First Survey 13th March Last Survey 25th June 1945

on the EMPIRE SENLAC (Number of Visits 10) Gross Tons Net

Built at Sunderland By whom built J. L. Thompson & Sons Ltd Yard No. 642 When built 1945

Engines made at Sunderland By whom made Wm. Duguid Engine No. 245 When made 1945

Boilers made at Stockton-on-Tees By whom made Stockton C.C. & Riley Mtn. Ls. Boiler No. 6893 When made 1945

Nominal Horse Power Owners Ministry of War Transport Port belonging to Sunderland

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appley Fritcham Steel Co. Ld. (Letter for Record 5)

Total Heating Surface of Boilers 1152 sq ft Is forced draught fitted no Coal or Oil fired oil

No. and Description of Boilers Working Pressure 150 lbs.

Tested by hydraulic pressure to 275 lbs. Date of test 25/6/45 No. of Certificate 7147 Can each boiler be worked separately yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 1-2" H.L. - Tank Spring

Area of each set of valves per boiler per Rule 6.280 Pressure to which they are adjusted 150 lbs. 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 —

Smallest distance between shell of boiler and tank top plating — Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 10'-9" Length 10'-6" Shell plates: Material Steel Tensile strength 28-32

Thickness 25/32" Are the shell plates welded or flanged no Description of riveting: circ. seams end D.R.L.

Long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 15/16" Pitch of rivets 2-98"

Percentage of strength of circ. end seams plate 68.5% rivets 48.7 Percentage of strength of circ. intermediate seam plate 85 rivets 108.7

Percentage of strength of longitudinal joint plate 19/32" combined 108.7

Thickness of butt straps outer 19/32" inner 23/32" No. and Description of Furnaces in each Boiler 2 Deep Iron Corrugated

Material Steel Tensile strength 26-30 Smallest outside diameter 3'-2 1/4"

Length of plain part top 13/32" bottom 13/32" Description of longitudinal joint welded

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

End plates in steam space: Material Steel Tensile strength 26-30 Thickness FRONT 29/32" BACK 7/8" Pitch of stays 16" x 14"

How are stays secured Double nuts & washers secured into both plates

Tube plates: Material front Steel back Steel Tensile strength 26-30 Thickness 29/32" 13/16"

Mean pitch of stay tubes in nests 9.69" Pitch across wide water spaces 14"

Girders to combustion chamber tops: Material Steel Tensile strength 26-30 Depth and thickness of girder 7" x 7/8"

at centre 7" x 7/8" Length as per Rule 2'-4 3/32" Distance apart 5 1/8" No. and pitch of stays —

in each Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 5/8" Back 19/32" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back 9" x 8 1/2" Top — Are stays fitted with nuts or riveted over nuts

Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 29/32" Lower back plate: Material Steel Tensile strength 26-30 Thickness 7/8"

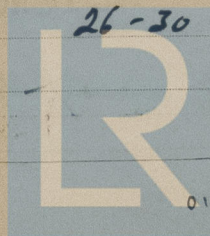
Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over nuts

Main stays: Material Steel Tensile strength 28-32

Diameter At body of stay, 2 1/4" Over threads — No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26-30

Diameter At turned off part, 1 1/2" Over threads — No. of threads per inch 9



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Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, 1 3/4 or 1 5/8 Over threads }
No. of threads per inch 6
Tubes: Material H.P. Weldless Steel External diameter { Plain 3" Stay 3" Thickness { 9.5129 5/16 No. of threads per inch 9
Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in shell plate 21" x 17" Section of compensating ring 7" x 1 1/8" No. of rivets and diameter of rivet holes 52 1 1/16"
Outer row rivet pitch at ends 6 1/4" Depth of flange if manhole flanged 3 1/2" 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 { Plate Rivets
Internal diameter Thickness of crown No. and diameter of stays
Inner radius of crown
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
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 For and on behalf of

STOCKTON CHEMICAL ENGINEERS & BOILER MAKERS LTD.

The foregoing is a correct description,

Geo. W. Riley Manufacturer.

DIRECTOR

Dates of Survey { During progress of work in shops - - March 13, 23, 24, April 6, 12, 25, May 30, June 11, 20, 25 Are the approved plans of boiler and superheater forwarded herewith 23/11/44 (If not state date of approval.)
while building { During erection on board vessel - - - } Total No. of visits 10

Is this Boiler a duplicate of a previous case 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 Requirements & approved plan.

The materials & workmanship are good & on completion the boiler was hydraulically tested to 275 lb psi & found satisfactory.

This boiler is being forwarded to Sunderland for Wm. Duffell's Contract No. 245.

This boiler has been efficiently fitted on board and its safety valves have been adjusted under steam.

L. R. Horne

Survey Fee ... £ 7 : 14 : When applied for, 1-7-1945
Travelling Expenses (if any) £ : : When received, 19

L. R. Horne Shurt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 16 NOV 1945

Assigned Su F.E. machy. rpt.



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