

REPORT ON BOILERS.

Std. No. 337 + 7
Hall No. 14438.

Received at London Office

13 APR 1943

Date of writing Report 14th April 1943 When handed in at Local Office 10th April 1943 Port of Middlebrough

No. in Reg. Book. Stockton-on-Tees Date, First Survey 11th January Last Survey 27th March 1943.

on the **"EMPIRE CHEER"** (Number of Visits 8) Gross Tons 7297 Net Tons 4936

Built at Sunderland By whom built Wm. Leyland & Sons Ltd Yard No. 402 When built 1943

Engines made at Sunderland By whom made Wm. Leyland & Sons Ltd Engine No. 402 When made 1943

Boilers made at Stockton-on-Tees By whom made Stockton Chemical Engineering & Shipbuilders Ltd Boiler No. 6789 When made 1943

Nominal Horse Power 516 Owners Ministry of War Transport Port belonging to Sunderland

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appley & Hodgkinson Steel Co Ltd (Letter for Record S)

Total Heating Surface of Boilers 2130 sq ft Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers 1 SE. marine Working Pressure 120 lb/sq in

Tested by hydraulic pressure to 230 lb/sq in Date of test 27/3/43 No. of Certificate 7075 Can each boiler be worked separately —

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 1-3" Double, High Lift

Area of each set of valves per boiler {per Rule 9.86 for HL as fitted 14.14 sq in Pressure to which they are adjusted 120 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 2' 6" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 12'-10 9/16" Length 11'-6" Shell plates: Material Steel Tensile strength 28/33

Thickness 2 3/32" Are the shell plates welded or flanged No Description of riveting: circ. seams {end DR inter. —

long. seams TR. - DB3 Diameter of rivet holes in {circ. seams 1 1/16" long. seams 1 3/16" Pitch of rivets { 3.238" 5 15/16"

Percentage of strength of circ. end seams {plate 67.18 rivets 60.4 Percentage of strength of circ. intermediate seam {plate — rivets —

Percentage of strength of longitudinal joint {plate 86.31 rivets 93.53 combined 87.84

Thickness of butt straps {outer 9/16" inner 1 1/16" No. and Description of Furnaces in each Boiler 3- Double Corrugated

Material Steel Tensile strength 26-30 Smallest outside diameter 3'-0 1/4"

Length of plain part {top — bottom — Thickness of plates {crown 3/8" bottom — 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 2 1/2" Pitch of stays 18" x 16"

How are stays secured Welded & outside nut

Tube plates: Material {front Steel back Steel Tensile strength { 26-30 Thickness { 1 1/16" 1 1/16"

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 18 1/2"

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Depth and thickness of girder at centre 7 1/4" 2 x 1 1/16" Length as per Rule 2'-5 3/4" Distance apart 10" No. and pitch of stays in each 2- 9 1/4"

Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 5/8" Back 9/16" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 10" x 9" Back 10" x 8 1/2" Top 10" x 9 1/4" Are stays fitted with nuts or riveted over Welded

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

Thickness 1 1/16" Lower back plate: Material Steel Tensile strength 26-30 Thickness 1 1/16"

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

Main stays: Material Steel Tensile strength 28-32

Diameter {At body of stay, or over threads 2 3/8" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26-30

Diameter {At turned off part, or over threads 1 3/8" 1 1/2" 1 5/8" 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 1/2" or 1 3/8" Over threads }
No. of threads per inch 9.
Tubes: Material L.W. Iron External diameter { Plain 2 3/4" Stay 2 3/4" Thickness { 8 W.G. 5/16" No. of threads per inch 9.
Pitch of tubes 3 3/4" x 3 3/4" Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 7" x 1" No. of rivets and diameter of rivet holes 44 - 1 5/16"
Outer row rivet pitch at ends 6" Depth of flange if manhole flanged 9 3/4" Steam Dome: Material Iron.
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
STOKTON CHEMICAL ENGINEERS & RILEY BOILERS LTD.
The foregoing is a correct description,
Manufacturer.
DIRECTOR

Dates of Survey { During progress of work in shops - - - Jan. 11, 20, Feb. 8, March, 2, 8, 16, 22, 27. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
while building { During erection on board vessel - - - } Total No. of visits 8

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 approved plan & Rule Requirements.

The materials & workmanship are good & on completion the boiler was hydrostatically tested to 220 lbs/sq. in. & found satisfactory.

This boiler is being forwarded to Sunderland for installation on Wm. Dufford's Contract No 702.

This boiler has been securely fixed on board the vessel & Safety valves adjusted to working pressure as above.

For recommendation please see Machinery Rpt.

W. L. L. L.

Survey Fee ... £ 14 : 4 : 0 When applied for, 12 / 4 / 19 43.
Travelling Expenses (if any) £ : : When received, 19

L. H. L. L.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 6 AUG 1943

Assigned

see minute on
Sld H. Rpt.

By 803E



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