

REPORT ON BOILERS.

No. 11319

11 JAN 1943 - 1 JUL 1943

Received at London Office

Date of writing Report 31-12-1942 When handed in at Local Office

8/11 10-43

Port of

Manchester

No. in Survey held at Hyde - near Manchester Date, First Survey

6-5-42

Last Survey 22-12-1942

on the

M.V. "BRITISH PATIENCE"

(Number of Vats 18)

Tons { Gross
Net

Master Built at Glasgow By whom built Harland & Wolff Ltd Yard No. 1166 When built 1943

Engines made at Glasgow By whom made Harland & Wolff Ltd Engine No. 1166 When made 1943

Boilers made at Hyde By whom made Joseph Adamson & Co Ltd Boiler No. 104 When made 1942

STARBOARD BOILER No. 2587

Nominal Horse Power

Owners

Port belonging to

G.E.M.

STARBOARD BOILER

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel COLVILLES L.B. GLASGOW (Letter for Record (S) ✓)

Total Heating Surface of Boilers 1918 SQ. FT Is forced draught fitted YES Coal or Oil fired OIL.

No. and Description of Boilers ONE S.E. CYLINDRICAL MULTITUBULAR DONKEY BOILER Working Pressure 150 $\frac{1}{2}$ lb/sq. in.Tested by hydraulic pressure to 275 $\frac{1}{2}$ lb/sq. in. Date of test 28-10-42 No. of Certificate 104 Can each boiler be worked separately YES.Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2 $\frac{1}{4}$ D.P. DOUBLE IMPROVED HIGH LIFT NOT FITTED BY J. ADAMSON & CO L.B.

Area of each set of valves per boiler per Rule 3.63 sq. in. as fitted 3.99 " Pressure to which they are adjusted 150 lb. 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 will clear 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 12'6" Length 11'0" Shell plates: Material O.H. STEEL Tensile strength 29/33 TONS/SQ. IN.

Thickness $\frac{7}{8}$ " Are the shell plates welded or flanged NO Description of riveting: circ. seams end D.R. LAP JOINTlong. seams D.B. STRAPS, 5 RIVETS/PIN Diameter of rivet holes in circ. seams $\frac{13}{32}$ Pitch of rivets 3.038

Percentage of strength of circ. end seams plate 64.0 rivets 56.0 Percentage of strength of circ. intermediate seam plate 84.57 rivets 106.7

Percentage of strength of longitudinal joint plate 84.57 rivets 106.7 combined 90.5 Working pressure of shell by Rules 154.6 $\frac{1}{2}$ lb/sq. in.Thickness of butt straps outer $\frac{11}{16}$ inner $\frac{13}{16}$ No. and Description of Furnaces in each Boiler TWO DEIGHTON CORRUGATED FURNACES

Material O.H. STEEL Tensile strength 26/30 TONS/SQ. IN. Smallest outside diameter 3'6"

Length of plain part top ✓ bottom ✓ Thickness of plates crown $\frac{1}{2}$ Description of longitudinal joint WELDED.Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 171 $\frac{1}{2}$ lb/sq. in.End plates in steam space: Material O.H. STEEL Tensile strength 26/30 TONS/SQ. IN. Thickness $\frac{15}{16}$ Pitch of stays 15" x 16 $\frac{3}{4}$ "How are stays secured NUTS INSIDE AND OUTSIDE Working pressure by Rules 159.7 $\frac{1}{2}$ lb/sq. in.Tube plates: Material front O.H. STEEL Tensile strength 26/30 TONS/SQ. IN. Thickness $\frac{7}{8}$ " back O.H. STEEL Tensile strength 26/30 TONS/SQ. IN. Thickness $\frac{13}{16}$ "Mean pitch of stay tubes in nests 9.53" Pitch across wide water spaces 13 $\frac{1}{2}$ x 7 $\frac{1}{4}$ " Working pressure front 161.4 $\frac{1}{2}$ lb/sq. in. back 261.6 $\frac{1}{2}$ lb/sq. in.

Girders to combustion chamber tops: Material O.H. STEEL Tensile strength 28/32 TONS/SQ. IN. Depth and thickness of girder

at centre 8 $\frac{1}{4}$ " Two $\frac{3}{4}$ " THICK Length as per Rule 29 $\frac{15}{16}$ " Distance apart 11" No. and pitch of staysin each 3 AT 7 $\frac{1}{4}$ " Working pressure by Rules 162.3 $\frac{1}{2}$ lb/sq. in. Combustion chamber plates: Material O.H. STEELTensile strength 26/30 TONS/SQ. IN. Thickness: Sides $\frac{3}{4}$ " Back $\frac{3}{4}$ " Top $\frac{3}{4}$ " Bottom $\frac{3}{4}$ " GIRDER AND MARGINAL STAYS WITH NUTS ON C.SIDEPitch of stays to ditto: Sides 9 $\frac{3}{4}$ x 8 $\frac{1}{4}$ " Back 8" x 9 $\frac{1}{4}$ " Top 7 $\frac{1}{4}$ x 11" Are stays fitted with nuts or riveted over OTHERS RIVETED OVERWorking pressure by Rules 162.5 $\frac{1}{2}$ lb/sq. in. Front plate at bottom: Material O.H. STEEL Tensile strength 26/30 TONS/SQ. IN.Thickness $\frac{7}{8}$ " Lower back plate: Material O.H. STEEL Tensile strength 26/30 TONS/SQ. IN. Thickness $\frac{15}{16}$ "Pitch of stays at wide water space 13" x 9 $\frac{1}{4}$ " Are stays fitted with nuts or riveted over RIVETED OVERWorking Pressure 188.3 $\frac{1}{2}$ lb/sq. in. Main stays: Material O.H. STEEL Tensile strength 28/32 TONS/SQ. IN.Diameter { At body of stay, or over threads } 2 $\frac{1}{2}$ " No. of threads per inch 6 Area supported by each stay 255.4 SQ. INS.Working pressure by Rules 173.4 $\frac{1}{2}$ lb/sq. in. Screw stays: Material O.H. STEEL Tensile strength 26/30 TONS/SQ. IN.Diameter { At turned off part, or over threads } 1 $\frac{1}{2}$ " No. of threads per inch 11 Area supported by each stay 80.44 SQ. INS.

Working pressure by Rules 155.9/10 Are the stays drilled at the outer ends NO Margin stays: Diameter 1 7/8" & 2" AT CORNER
No. of threads per inch 11 Area supported by each stay 97.12 Sq. ins Working pressure by Rules 156.7 1/2 / 10
Tubes: Material O.H. STEEL External diameter 2 1/2" Thickness 10 L.S.G. No. of threads per inch 9
Pitch of tubes 3 3/4" x 3 5/8" Working pressure by Rules 150 1/2 / 10 Manhole compensation: Size of opening in
shell plate 12 1/2" x 16 1/2" Section of compensating ring 9 3/4" x 3 1/4" No. of rivets and diameter of rivet holes 28- 1 7/32" DIA.
Outer row rivet pitch at ends 9" Depth of flange if manhole flanged 3 3/8" LOWER Steam Dome: Material -
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 - Manufacturers of - Tubes -
Number of elements - Material of tubes - Steel castings -
Material of headers - Tensile strength - Internal diameter and thickness of tubes -
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 - 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 YES, WHERE APPLICABLE

The foregoing is a correct description,
JOSEPH ADAMSON & CO. LIMITED. Manufacturer.
Joint Managing Director.

Dates of Survey May 6th During progress of work in shops JULY 3rd, 7th, 18th, 31st AUG. 4, 11, 1925th
while building SEPT. 4th, 24th OCT. 12th, 20th, 28th Are the approved plans of boiler and superheater forwarded herewith
board vessel NOV. 5th, 13th, 25th DEC 22nd 1925 (If not state date of approval.)
Total No. of visits -

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, I tested materials and in accordance with the Secretary's letters, the approved plans and the requirements of the Rules. The materials and workmanship are of a good quality and the boiler when tested in the shops under an hydraulic pressure of two hundred and seventy five pounds per square inch was found sound and tight.

This boiler is, in opinion, suitable to be fitted on board a vessel classed with this Society and for the purpose intended. The boiler shell plate at the front end and left hand side has been stamped

N^o 104
LLOYDS TEST
275 1/2 / 10
WP 150 1/2 / 10 DRW
DRW 28-10-42

This boiler has been properly fitted on board & its safety valves adjusted and steam to 156 lb per sq inch & found satisfactory. Starboard Boiler compression washers. P. & S. 13/32
G. E. Murdoch

Survey Fee ... £ ... When applied for, 19
Travelling Expenses (if any) £ ... When received, 19

D. Walburn & J. Mathew
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 28 JUN 1926

Assigned -