

# REPORT ON BOILERS.

No. 82740

14 MAY 1928

Received at London Office

Date of writing Report 9-5-1928 When handed in at Local Office 12-5-1928 Port of Newcastle-on-Tyne

No. in Reg. Book. 39869 on the S.S. APURE (Sup.) No. in Surrey held at Jarrow Date, First Survey 30 Decr 1927 Last Survey 3 May 1928

(Number of Visits \_\_\_\_\_) Tons { Gross 3163.72 Net 1669.22

Master \_\_\_\_\_ Built at Hebburn By whom built Palmers Co. Ltd. Yard No. 982 When built 1928

Engines made at Jarrow By whom made Palmers Co. Ltd. Engine No. 982 When made 1928

Boilers made at Jarrow By whom made Palmers Co. Ltd. Boiler No. 982 When made 1928

Nominal Horse Power 248 Owners Venezuela Gulf Oil Co. Inc. Port belonging to Maracaibo

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland Ltd. (Letter for Record S)

Total Heating Surface of Boilers 4808 Is forced draught fitted No Coal or Oil fired OIL

No. and Description of Boilers Two S. E. CYLINDRICAL MULTITUBULAR Working Pressure 180 LBS.

Tested by hydraulic pressure to 320 LBS. Date of test 23.3.28 No. of Certificate 258/9 Can each boiler be worked separately YES

Area of Firegrate in each Boiler \_\_\_\_\_ No. and Description of safety valves to each boiler TWO SPRING LOADED

Area of each set of valves per boiler { per Rule 18.49 as fitted 19.24 Pressure to which they are adjusted 180 LBS. Are they fitted with easing gear YES

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler YES

Smallest distance between boilers or uptakes and bunkers or woodwork 1' 6" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2' 1 1/2" Is the bottom of the boiler insulated YES

Largest internal dia. of boilers 15' 0" Length 11' 6" (MEAN) Shell plates: Material STEEL Tensile strength 28 - 32 TONS

Thickness 1 1/4" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R.L. inter. \_\_\_\_\_

long. seams T.R. D.B.S. Diameter of rivet holes in { circ. seams 1 3/8" long. seams 1 1/4" Pitch of rivets { 3.954 8 1/8"

Percentage of strength of circ. end seams { plate 65.2% rivets 49.6% Percentage of strength of circ. intermediate seam { plate \_\_\_\_\_ rivets \_\_\_\_\_

Percentage of strength of longitudinal joint { plate 85.6% rivets 87.1% combined 88.5% Working pressure of shell by Rules 183 LBS.

Thickness of butt straps { outer 3 1/2" inner 1 3/32" No. and Description of Furnaces in each Boiler 3 CORRUGATED DEIGHTON SECTION

Material STEEL Tensile strength 26 - 30 TONS Smallest outside diameter 3' 7 1/8"

Length of plain part { top 10 1/2" bottom 10 1/2" Thickness of plates { crown 9/16" bottom 9/16" Description of longitudinal joint WELD

Dimensions of stiffening rings on furnace or c.c. bottom \_\_\_\_\_ Working pressure of furnace by Rules 187 LBS.

End plates in steam space: Material STEEL Tensile strength 26 - 30 TONS Thickness 1 1/4" Pitch of stays 21" x 21"

How are stays secured NUTS & WASHERS Working pressure by Rules 182 LBS.

Tube plates: Material { front STEEL back STEEL Tensile strength { 26 - 30 TONS 26 - 30 " Thickness { 15/16" 27/32"

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 1' 2" Working pressure { front 186 LBS. back 202 LBS.

Girders to combustion chamber tops: Material STEEL Tensile strength 28 - 32 TONS Depth and thickness of girder

at centre 10" x 1 3/8" Length as per Rule 2' 10 1/2" Distance apart 10" No. and pitch of stays

in each 3 @ 8 3/4" Working pressure by Rules 182 LBS. Combustion chamber plates: Material STEEL

Tensile strength 26 - 30 TONS Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 8 3/4" x 8 1/4" Back 9" x 8" Top 10' x 8 3/4" Are stays fitted with nuts or riveted over NUTS ON MARGINAL STAYS OTHERS RIVETED.

Working pressure by Rules 182 LBS. Front plate at bottom: Material STEEL Tensile strength 26 - 30 TONS

Thickness 15/16" Lower back plate: Material STEEL Tensile strength 26 - 30 TONS Thickness 29/32"

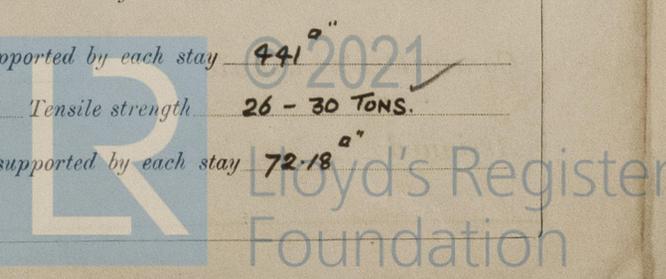
Pitch of stays at wide water space d^2 = 19.5'^2 Are stays fitted with nuts or riveted over NUTS

Working Pressure 184 LBS. Main stays: Material STEEL Tensile strength 28 - 32 TONS

Diameter { At body of stay, \_\_\_\_\_ or Over threads 3 1/4" No. of threads per inch 8 Area supported by each stay 441"

Working pressure by Rules 183 LBS. Screw stays: Material STEEL Tensile strength 26 - 30 TONS.

Diameter { At turned off part, \_\_\_\_\_ or Over threads 1 5/8" No. of threads per inch 9 Area supported by each stay 72.18"



Working pressure by Rules **211 LBS** Are the stays drilled at the outer ends **No** Margin stays: Diameter  At turned off part,  Over threads **1 3/4", 2"**

No. of threads per inch **9** Area supported by each stay **99 & 123.75** Working pressure by Rules **183 & 201 LBS**

Tubes: Material **W. IRON** External diameter  Plain **2 1/2"** Thickness  **9 LSG** No. of threads per inch **9**

Pitch of tubes **3 3/4" x 3 3/4"** Working pressure by Rules **230 LBS** Manhole compensation: Size of opening in shell plate **20" x 16"** Section of compensating ring **2' 11 1/2" x 2' 8" x 1 1/4"** No. of rivets and diameter of rivet holes **40 @ 1 1/4"**

Outer row rivet pitch at ends **8 1/8"** Depth of flange if manhole flanged **4 1/2"** Steam Dome: Material

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  Working pressure by Rules  Thickness of crown  No. and diameter of stays

How connected to shell  Inner radius of crown  Working pressure by Rules

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 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

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  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 23 inclusive for boilers been complied with **YES**

*Palmer's* This drawing is a correct description, **N. Brown** Manufacturer, Manager, Engine Works

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

Are the approved plans of boiler and superheater forwarded herewith **yes.** (If not state date of approval.)

Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **These boilers have been built under Special Survey, the materials and workmanship are good.**

Survey Fee ... .. £ **See Machinery Report** : When applied for, 192

Travelling Expenses (if any) £ **See Machinery Report** : When received, 192

**Thomas Napier**  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUES. 22 MAY 1928**

Assigned **See Machinery Report attached**

