

REPORT ON BOILERS.

Sld. No. 30561
Hue No. 86507
30 JAN 1931
-4 DEC 1930

Received at London Office

Date of writing Report 19 25/11/30 When handed in at Local Office 25/11/30 Port of Newcastle-on-Tyne

No. in Reg. Book Jarrow Survey held at Jarrow Date, First Survey 3rd Oct Last Survey 18th Nov 1930

on the M.V. BRITISH SCIENCE (Number of Visits 12) Gross Tons 1304 Net Tons 794

Master Hebburn Built at Hebburn By whom built Palmets Co. Ltd Yard No. 1003 When built 1930

Engines made at Sunderland By whom made W. Doxford & Sons Ltd Engine No. 182 When made 1930

Boilers made at Jarrow By whom made Palmets Co. Ltd Boiler No. 8027 When made 1930

Nominal Horse Power British Tanker Co. Ltd Owners British Tanker Co. Ltd Port belonging to

MULTITUBULAR BOILERS ~~MAIN~~, ~~AUXILIARY~~, OR DONKEY.

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

Total Heating Surface of Boilers 2138 sq ft Is forced draught fitted YES Coal or Oil fired OIL EXHAUST GAS

No. and Description of Boilers ONE SINGLE ENDED Working Pressure 150 LBS

Tested by hydraulic pressure to 275 LBS Date of test 6.11.30 No. of Certificate 521 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 19.4 sq Pressure to which they are adjusted 155 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 8-0 Is oil fuel carried in the double bottom under boilers Yes

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

Largest internal dia. of boilers 12' 4 5/16" Length 11' 6" Shell plates: Material STEEL Tensile strength 29-33 TONS

Thickness 37/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end DRL

Long. seams TRDBS Diameter of rivet holes in circ. seams 1 1/8" Pitch of rivets 3-254"

Percentage of strength of circ. end seams {plate 67.3 rivets 51.2 Percentage of strength of circ. intermediate seam {plate 85.8 rivets 91.7

Percentage of strength of longitudinal joint {plate 85.8 rivets 91.7 combined 90.0 Working pressure of shell by Rules 152 LBS

Thickness of butt straps {outer 21/32" inner 25/32" No. and Description of Furnaces in each Boiler TWO DEIGHTON

Material STEEL Tensile strength 26-30 TONS Smallest outside diameter 2' 6"

Length of plain part {top 10 1/2" bottom 10 1/2" Thickness of plates {crown 3/8" bottom 3/8" Description of longitudinal joint WELD

Dimensions of stiffening rings on furnace or r.c. bottom Working pressure of furnace by Rules 165 LBS

End plates in steam space: Material STEEL Tensile strength 26-30 TONS Thickness 31/32" Pitch of stays 16.5 x 14"

How are stays secured DOUBLE NUTS & WASHERS Working pressure by Rules 151 LBS

Tube plates: Material {front STEEL back Tensile strength { 26-30 TONS Thickness { 21/32"

Lean pitch of stay tubes in nests 9' 375" Pitch across wide water spaces 1' 2 1/4" Working pressure {front 153 LBS back 160 LBS

Girders to combustion chamber tops: Material STEEL Tensile strength 29-33 TONS Depth and thickness of girder

centre 1" x 7 1/2" Length as per Rule 2' 4 23/32" Distance apart 8 1/4" No. and pitch of stays

each 2 @ 10" Working pressure by Rules 155 LBS Combustion chamber plates: Material STEEL

Tensile strength 26-30 TONS Thickness: Sides 5/8" Back 23/32" Top 5/8" Bottom 5/8"

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

Working pressure by Rules 152 LBS Front plate at bottom: Material STEEL Tensile strength 26-30 TONS

Thickness 25/32" Lower back plate: Material STEEL Tensile strength 26-30 TONS Thickness 29/32"

Pitch of stays at wide water space 14.25" x 9.5" Are stays fitted with nuts or riveted over NUTS

Working Pressure 152 LBS Main stays: Material STEEL Tensile strength 28-32 TONS

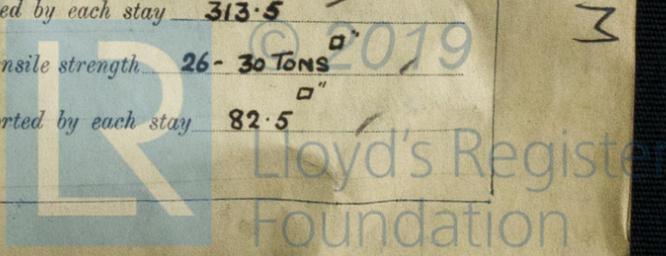
Diameter {At body of stay, 2 5/8" No. of threads per inch 6 Area supported by each stay 313.5

Working pressure by Rules 158 LBS Screw stays: Material STEEL Tensile strength 26-30 TONS

Diameter {At turned off part, 1 1/2" No. of threads per inch 9 Area supported by each stay 82.5

1304
27
794
2138

W11-0035



Working pressure by Rules **152 LBS** / Are the stays drilled at the outer ends **No** / Margin stays: Diameter ^{At turned off part,} _{or} ^{Over threads} **1 5/8", 1 3/4", 1 7/8"**

No. of threads per inch **9** / Area supported by each stay **127.9** / Working pressure by Rules **166 LBS**

Tubes: Material **W. IRON** / External diameter ^{Plain} **2 1/2", 3 1/4"** / Thickness ^{10 WG, 9 WG} **3/8", 5/16"** / No. of threads per inch **9**

Pitch of tubes **3 3/4" x 3 3/4" & 4 1/2" x 4 1/2"** / Working pressure by Rules **175 LBS. & 180 LBS.** / Manhole compensation: Size of opening in shell plate **16" x 20"** / Section of compensating ring **2.8" x 2.9" x 25/32"** / No. of rivets and diameter of rivet holes **40 @ 1 1/8"**

Outer row rivet pitch at ends **7 3/16"** / Depth of flange if manhole flanged **4"** / 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 **-**

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 **-** / 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 **YES**

The foregoing is a correct description
Palmer's Shipbuilding & Iron Co., Ltd.
N. Brown Manufacturer.

Dates of Survey ^{During progress of work in shops --} **1930 Oct. 3, 13, 14, 17, 20, 21, 23, 31, Nov. 5, 6, 10, 18.** / 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 **12.**

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 built under Special Survey, the materials and workmanship are good.**

This boiler has been satisfactorily fitted on board the vessel. The safety valves adjusted under steam. For notation see machinery report.

Survey Fee £ **14 : 5 : 0** / When applied for, **DEC 1930**

Travelling Expenses (if any) £ : : / When received, **14/2/31**

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

Committee's Minute: **TUE. 10 FEB 1931**

Assigned: **See other Nov. 26 Rpt**

