

REPORT ON BOILERS.

No. 80753

Received at London Office

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Date of writing Report 1-12-1926 When handed in at Local Office 6-12-1926 Port of

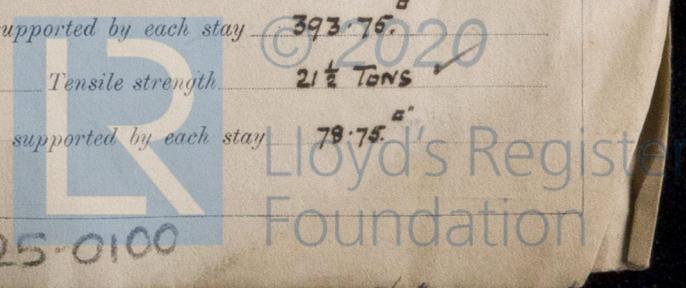
NEWCASTLE-ON-TYNE.

No. in Survey held at Jarrow Date, First Survey 18th Sept 1925 Last Survey 26th Nov 1926
 No. of Book. 87909 on the S.S. "AFRICSTAR" (Number of Visits) Gross Tons 10645
 Net Tons 6542
 Built at Hebburn By whom built Palmer S. & J. Co. Ltd. Yard No. 958 When built 1926
 Engines made at Jarrow By whom made Palmer S. & J. Co. Ltd. Engine No. 958 When made 1926
 Boilers made at " By whom made " Boiler No. 958 When made 1926
 Nominal Horse Power Owners Blue Star Line (1920) Ltd. Port belonging to London

Double Ended

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs. Fried Krupp A.G. Essen. (Letter for Record Y)
 Total Heating Surface of Boilers 15016 Is forced draught fitted YES Coal or Oil fired BOTH
 No. and Description of Boilers 2 DB Working Pressure 200 LBS.
 Tested by hydraulic pressure to 350 LBS. Date of test 31/3/26, 14/5/26 No. of Certificate 9986, 101 Can each boiler be worked separately YES
 Area of Firegrate in each Boiler 140 No. and Description of safety valves to each boiler TWO SPRING LOADED (COCKBURN HIGH LIFT)
 Area of each set of valves per boiler per Rule as fitted 25.13 Pressure to which they are adjusted 200 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 1' 6" Is oil fuel carried in the double bottom under boilers YES
 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 17' 6" Length 21' 6" Shell plates: Material STEEL Tensile strength 29-33 TONS
 Thickness 1 1/2" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. inter. T.R.
 Long. seams T.R., D.B.S. Diameter of rivet holes in circ. seams 1 5/8" long. seams 1 9/16" Pitch of rivets 4 1/8" 10 5/8"
 Percentage of strength of circ. end seams plate 64.7% rivets 46.5% Percentage of strength of circ. intermediate seam plate 66.27% rivets 66.9%
 Percentage of strength of longitudinal joint plate 85.29% rivets 87.64% combined 81% Working pressure of shell by Rules 201 LBS.
 Thickness of butt straps outer 1 5/8" inner 1 3/8" No. and Description of Furnaces in each Boiler 8 Cf
 Material STEEL Tensile strength 26-30 TONS Smallest outside diameter 3' 7 1/4"
 Length of plain part top 10 1/2" bottom 10 1/2" Thickness of plates crowns 5 1/8" bottom 5 1/8" Description of longitudinal joint WELD
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 210.9 LBS.
 End plates in steam space: Material STEEL Tensile strength 26-30 TONS Thickness 1 1/2" Pitch of stays 22 1/2" x 17 1/2"
 How are stays secured DOUBLE NUTS & WASHERS Working pressure by Rules 208 LBS.
 Tube plates: Material front STEEL back STEEL Tensile strength 26-30 TONS Thickness 1" 2 3/8"
 Mean pitch of stay tubes in nests 9 3/4" Pitch across wide water spaces 13 1/2" Working pressure front 203 LBS. back 209 LBS.
 Girders to combustion chamber tops: Material STEEL Tensile strength 29-32 TONS Depth and thickness of girder
 At centre 11" x 1 1/2" Length as per Rule 36.78" Distance apart 8 3/4" No. and pitch of stays
 In each 6 @ 9" Working pressure by Rules 241 LBS. Combustion chamber plates: Material STEEL
 Tensile strength 26-30 TONS Thickness: Sides 3/4" Back Top 3/4" Bottom 3/4"
 Pitch of stays to ditto: Sides 10" x 7 3/8" Back Top 9" x 8 3/4" Are stays fitted with nuts or riveted over NUTS
 Working pressure by Rules 245 LBS. Front plate at bottom: Material STEEL Tensile strength 26-30 TONS
 Thickness 1" Lower back plate: Material Tensile strength Thickness
 Pitch of stays at wide water space Are stays fitted with nuts or riveted over
 Working Pressure Main stays: Material STEEL Tensile strength 29-32 TONS
 Diameter At body of stay, 3 3/8" Over threads 3 3/8" No. of threads per inch 6 Area supported by each stay 393.75
 Working pressure by Rules 222 LBS. Screw stays: Material IRON Tensile strength 21 1/2 TONS
 Diameter At turned off part, 1 3/4" Over threads 1 3/4" No. of threads per inch 9 Area supported by each stay 78.75



Working pressure by Rules **230 LBS** Are the stays drilled at the outer ends **No** ✓ Margin stays: Diameter { At turned off part, -
or
Over threads. -
No. of threads per inch - Area supported by each stay - Working pressure by Rules -
Tubes: Material **IRON** ✓ External diameter { Plain **2 1/2"** ✓ Stay **2 1/2"** ✓ Thickness { **No. 9 LSC** ✓
3/8", 7/16", 5/16" ✓ No. of threads per inch **9** ✓
Pitch of tubes **3 1/2" x 3 1/2"** ✓ Working pressure by Rules **300 LBS.** Manhole compensation: Size of opening in
shell plate **20" x 16"** ✓ Section of compensating ring **3' 3" x 3' 2" x 1 1/2"** ✓ No. of rivets and diameter of rivet holes **36 @ 1 1/2"** ✓
Outer row rivet pitch at ends **11"** ✓ Depth of flange if manhole flanged **4 3/8"** ✓ 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 - 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 -
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 23 inclusive for boilers been complied with **YES** ✓

The foregoing is a correct description.
W. Dixon Manufacturer.
Manager, Engine Mart

Dates of Survey { During progress of work in shops - - -
while building { During erection on board vessel - - -
Are the approved plans of boiler and superheater forwarded herewith (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 £ ✓ : : } When applied for, 192
Travelling Expenses (if any) £ : : } When received, 192

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

Committee's Minute **FRI. 10 DEC 1926**
Assigned *See Sp. rpt. attached*

