

REPORT ON BOILERS.

No. 80753

Received at London Office 9 DEC 1926

Date of writing Report 1-12-1926

When handed in at Local Office 6-12-1926

Port of

NEWCASTLE-ON-TYNE

No. in Reg. Book

Survey held at

Jarrow

Date, First Survey 18th Sept. 1925 Last Survey 26th Nov. 1926

Sup. 87909 on the

S.S. "AFRICSTAR"

(Number of Visits —)

Gross 10645

Tons Net 6542

Master

Built at

Hebburn

By whom built

Palmers S. & J. Co. Ltd.

Yard No. 958

When built 1926

Engines made at

Jarrow

By whom made

Palmers 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

Single ended

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

Manufacturers of Steel Messrs. Fried Krupp A.G. Essen ✓

(Letter for Record r ✓)

Total Heating Surface of Boilers

7858 ✓

Is forced draught fitted

YES ✓

Coal or Oil fired

BOTH ✓

No. and Description of Boilers

2 S.B. ✓

Working Pressure 200 LBS. ✓

Tested by hydraulic pressure to

350 LBS ✓

Date of test 17-3-26

No. of Certificate 9983-5 ✓

Can each boiler be worked separately

YES

Area of Firegrate in each Boiler

70^{sq} ✓

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 14.137^{sq} ✓

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

5' 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

12' 0" ✓

Shell plates: Material

STEEL ✓

Tensile strength

29-33 TONS

Thickness

1¹/₂" ✓

Are the shell plates welded or flanged

No ✓

Description of riveting: circ. seams

{ end

D.R. ✓

{ inter.

long. seams

T.R. D.B.S. ✓

Diameter of rivet holes in

{ circ. seams

1⁵/₈" ✓

Pitch of rivets

{ 4' 6' 5" ✓

{ 10' 5" ✓

Percentage of strength of circ. end seams

{ plate

64.7% ✓

{ rivets

46.5% ✓

Percentage of strength of circ. intermediate seam

{ plate

-

{ rivets

-

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

1⁵/₃₂" ✓

{ inner

1²/₃₂" ✓

No. and Description of Furnaces in each Boiler

4 C.F. ✓

Material

STEEL ✓

Tensile strength

26-30 TONS ✓

Smallest outside diameter

3' 7¹/₄" ✓

Length of plain part

{ top

10' 5" ✓

{ bottom

10' 5" ✓

Thickness of plates

{ crown

5⁵/₈" ✓

{ bottom

5⁵/₈" ✓

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

1¹/₃₂" ✓Pitch of stays 22¹/₂" x 17¹/₂" ✓

How are stays secured

D.N. + W ✓

Working pressure by Rules

208 LBS. ✓

Tube plates: Material

{ front

STEEL ✓

{ back

STEEL ✓

Tensile strength

26-30 TONS ✓

26-30 TONS ✓

Thickness

{ 1" ✓

{ 23³/₃₂" ✓

Mean pitch of stay tubes in nests

9³/₃₂" ✓

Pitch across wide water spaces

13¹/₂" ✓

Working pressure

{ front

203 LBS. ✓

{ back

209 LBS. ✓

Girders to combustion chamber tops: Material

STEEL ✓

Tensile strength

28-32 TONS ✓

Depth and thickness of girder

at centre

10" x 1¹/₂" ✓

Length as per Rule

34' 6" ✓

Distance apart

8³/₄" ✓

No. and pitch of stays

in each

3 @ 9" ✓

Working pressure by Rules

229 LBS. ✓

Combustion chamber plates: Material

STEEL ✓

Tensile strength

26-30 TONS ✓

Thickness: Sides

1¹/₁₆" ✓

Back

23³/₃₂" ✓

Top

1¹/₁₆" ✓

Bottom

7³/₈" ✓

Pitch of stays to ditto: Sides

9" x 8³/₄" ✓

Back

10" x 8³/₄" ✓

Top

9" x 8³/₄" ✓

Are stays fitted with nuts or riveted over

NUTS ✓

Working pressure by Rules

200 LBS. ✓

Front plate at bottom: Material

STEEL ✓

Tensile strength

26-30 TONS ✓

Thickness

1" ✓

Lower back plate: Material

STEEL ✓

Tensile strength

26-30 TONS ✓

Thickness

7³/₈" ✓

Pitch of stays at wide water space

13¹/₂" x 10" ✓

Are stays fitted with nuts or riveted over

NUTS ✓

Working Pressure

206 LBS. ✓

Main stays: Material

STEEL ✓

Tensile strength

28-32 TONS ✓

Diameter

{ At body of stay,

3³/₈" ✓

{ Over threads

3¹/₈" ✓

No. of threads per inch

6 ✓

Area supported by each stay

393.75^{sq} ✓

Working pressure by Rules

222 LBS. ✓

Screw stays: Material

IRON ✓

Tensile strength

21.5 TONS ✓

Diameter

{ At turned off part,

1³/₄" ✓

{ Over threads

1³/₄" ✓

No. of threads per inch

9 ✓

Area supported by each stay

81.65^{sq} ✓

W325-0101

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Working pressure by Rules **222 LBS.** Are the stays drilled at the outer ends **No** ✓ Margin stays: Diameter { At turned off part, —
 No. of threads per inch **9** ✓ Area supported by each stay **99.8** " Working pressure by Rules **213.7 LBS.**
 Tubes: Material **IRON** External diameter { Plain **2½"** ✓ Thickness { No. 8 L.S.C. ✓ No. of threads per inch **9** ✓
 Pitch of tubes **3¼" x 3½"** ✓ 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 1½"** ✓ No. of rivets and diameter of rivet holes **36 @ 1½"** ✓
 Outer row rivet pitch at ends **11"** ✓ Depth of flange if manhole flanged **4½"** ✓ 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 —
 Internal diameter — Working pressure by Rules — Thickness of crown — Rivets —
 stays — Inner radius of crown — Working pressure by Rules — No. and diameter of
 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 —
 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**

Palmer Shipbuilding & Iron Co., Ltd.
 The foregoing is a correct description,
 Manager, Engineer Manufacturer.

Dates { During progress of
 of Survey { work in shops — —
 while { During erection on
 building { 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 P.E. rpt attached



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