

REPORT ON BOILERS.

No. 77720

Date of writing Report

192

When handed in at Local Office

21/3/1924

Port of

Received at London Office

FRI. APR. 4 1924

NEWCASTLE-ON-TYNE

No. in
Reg. Book.

Survey held at Newcastle

Date, First Survey

11 Sept. 1923

Last Survey

20 March 1924

32412

on the

SAN SALVADOR

(Number of Visits)

Gross

56.50

Tons

Net

Master

Built at Newcastle

By whom built

S. W. G. Armstrong Whitworth & Co. Ltd.

Yard No. 992

When built

1924

Engines made at

Newcastle

By whom made

Wallsend Slipway & Eng. Co. Ltd.

Engine No. 840

When made

1924

Boilers made at

Newcastle

By whom made

Wallsend Slipway & Eng. Co. Ltd.

Boiler No. 840

When made

1924

Nominal Horse Power

538

Owners

Bagle Oil Transport Co. Ltd.

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Johns & Sons Ltd.

Total Heating Surface of Boilers

7896 sq. ft.

Is forced draught fitted

Yes

(Letter for Record (r))

Coal or Oil fired

Oil

No. and Description of Boilers

3 Single-End Cylindrical 3SB.

Working Pressure

180 lbs

Tested by hydraulic pressure to

320 lbs.

Date of test

26.4.23

No. of Certificate

9754

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

67 sq. ft.

No. and Description of safety valves to each boiler

Two Spring-loaded

Area of each set of valves per boiler

per Rule

20.2 sq. in.

as fitted

Pressure to which they are adjusted

185 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

20 3/4"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

27 1/2"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-6 1/16"

Length

12'-2 7/8"

Shell plates: Material

Steel

Tensile strength

30/34 lb

Thickness

1 7/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R.

inter.

long. seams

Double-End 3SB.

Diameter of rivet holes in

circ. seams

1 1/16"

long. seams

1 7/16"

Pitch of rivets

4.757"

8 1/16"

Percentage of strength of circ. end seams

plate

69.78

rivets

48.43

Percentage of strength of circ. intermediate seam

plate

85.3

rivets

89.5

Percentage of strength of longitudinal joint

plate

85.3

rivets

89.5

combined

90.76

Working pressure of shell by Rules

184 lbs

Thickness of butt straps

outer

1 1/16"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

3 cf.

main

Material

Steel

Tensile strength

26/30 tons

Smallest outside diameter

45 1/8"

Length of plain part

top

bottom

Thickness of plates

crown

5/8"

bottom

Description of longitudinal joint

weld

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

20 1/2 lbs

End plates in steam space: Material

Steel

Tensile strength

26/30 tons

Thickness

1 7/16"

Pitch of stays

23 1/2" x 23 1/2"

How are stays secured

Double-nuts

Working pressure by Rules

191 lbs

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26/30 tons

Thickness

1 3/16"

Mean pitch of stay tubes in nests

9.26"

Pitch across wide water spaces

13 3/4"

Working pressure

front

20 1/2 lbs

back

29 1/2 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

8 7/8" - 1 1/2"

Length as per Rule

35 1/2"

Distance apart

8 1/4"

No. and pitch of stays

in each

Three 8 3/8"

Working pressure by Rules

18 1/2 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

5/8"

Back

5/8"

Top

5/8"

Bottom

27 1/2"

Pitch of stays to ditto: Sides

8 7/8" x 8 3/8"

Back

8 7/8" x 8 1/2"

Top

8 7/8" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

18 1/2 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

7/8"

Pitch of stays at wide water space

14 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

205 lbs

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

At body of stay,

or

Over threads

3 3/4"

No. of threads per inch

Six

Area supported by each stay

529 sq. in.

Working pressure by Rules

208

Screw stays: Material

Iron

Tensile strength

2 1/2 tons

Diameter

At turned off part,

or

Over threads

1 3/4"

No. of threads per inch

Nine

Area supported by each stay

744 sq. in.

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Foundation

W 411 0225

REPORT ON BOILERS

Working pressure by Rules $245\frac{1}{2}$ ✓ Are the stays drilled at the outer ends *no* ✓ Margin stays: Diameter { At turned off part, or Over threads $1\frac{1}{8}$ " ✓

No. of threads per inch *hine* ✓ Area supported by each stay 98.11 ✓ Working pressure by Rules $215\frac{1}{2}$ ✓

Tubes: Material *low* ✓ External diameter { Plain $2\frac{1}{2}$ " ✓ Stay $2\frac{1}{2}$ " ✓ Thickness { $11\frac{1}{16}$ " ✓ No. of threads per inch *hine* ✓

Pitch of tubes $7\frac{1}{2} \times 11\frac{1}{16}$ " ✓ $3\frac{3}{4} \times 3\frac{1}{16}$ " Working pressure by Rules *plain 300 stay 217 1/2* ✓ Manhole compensation: Size of opening in shell plate $19" \times 15"$ ✓ Section of compensating ring $34\frac{7}{8} \times 32\frac{1}{2} \times 1\frac{1}{16}$ " No. of rivets and diameter of rivet holes 36 rivets $\times 1\frac{1}{16}"$

Outer row rivet pitch at ends $9\frac{7}{8}"$ Depth of flange if manhole flanged $3\frac{3}{4}"$ ✓ Steam Dome: Material *hine* ✓

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 *None* ✓ 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 _____

FOR THE WALLSEND SLIPWAY & ENGINEERING CO., LIMITED.

The foregoing is a correct description,

A. L. Ains

Manufacturer.

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - }

See Machinery Report

DIRECTOR.

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 were built under Special Survey. The materials & workmanship are sound & good. They were subjected to a hydraulic pressure test with satisfactory results. The Boilers have been efficiently installed on the vessel and their safety valves adjusted under steam.

Survey Fee ... £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

R. Lee Ames

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 8 APR. 1924

Assigned _____



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