

REPORT ON BOILERS.

No. 95474

Date of writing Report

19

When handed in at Local Office

Received at London Office

OCT - 1 1937

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Newcastle on Tyne

Date, First Survey

23 Dec/36

Last Survey

28/9/

1937

Reg. Book.

on the Single Screw Motor-tanker "ARNDAL"

(Number of Visits)

Gross 8296

Net 4936

Master

Built at

Newcastle

By whom built

Swan, Hunter & Wigham Richardson Ls

Yard No. 1516

When built 1937

Engines made at

Sunderland

By whom made

W. Daxford & Sons Ls

Engine No. 201

When made 1937

Boilers made at

Newcastle on Tyne

By whom made

Swan, Hunter & W. Richardson Ls

Boiler No. 1516

When made 1937

Nominal Horse Power

 $\frac{2595}{15} = 173$

Owners

The Admiralty

Port belonging to LONDON

Waste Heat Fuel Fired

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

Manufacturers of Steel

Steel Company of Scotland

(Letter for Record

S.

Total Heating Surface of Boilers

2595 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

oil fired

No. and Description of Boilers

One Single Ended Multitubular Scotch

Working Pressure

150 lb/sq in

Tested by hydraulic pressure to

275 lb

Date of test

9/7/37

No. of Certificate

724

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

Oil fired

No. and Description of safety valves to each boiler

2-2 1/4

Description of safety valves

Cockburns Improved High Lift Spring Loaded

Area of each set of valves per boiler

per Rule 9.85 sq in

as fitted 11.84

Pressure to which they are adjusted

150 lb

Are they fitted with easing gear

Yes

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

No main Boilers

Smallest distance between boilers or uptakes and bunkers or woodwork

16"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

16"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

13'-4 1/4"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

30/34 tons

Thickness

7/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D.R. Lap

long. seams

T.R. Dble butt straps

Diameter of rivet holes in

circ. seams 1"

long. seams 15/16"

Pitch of rivets

3.24"

Percentage of strength of circ. end seams

plate 69.18

rivets 42.41

Percentage of strength of circ. intermediate seam

plate 85.84

rivets 85.55

Percentage of strength of longitudinal joint

plate 85.84

rivets 85.55

combined 88.80

Working pressure of shell by Rules

151 lb

Thickness of butt straps

outer 2 1/32"

inner 25/32"

No. and Description of Furnaces in each Boiler

Two at wings - Brighton Corrupters. at Centre back - plain tube for access

Material

Steel

Tensile strength

26/30 tons

Smallest outside diameter

37 3/16"

Length of plain part

top 28"

bottom 28"

Thickness of plates

crown 13/32"

bottom 5/8" c.c. butt

Description of longitudinal joint

Furnaces fire welded

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

none

Working pressure of furnace by Rules

155 lb

End plates in steam space: Material

Steel

Tensile strength

26/30 tons

Thickness

1 1/2"

Pitch of stays 18"x18"

How are stays secured

Old nuts & washers

Working pressure by Rules

151.5 lb

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30 tons

Thickness

7/8"

5/8"

Mean pitch of stay tubes in nests

9.375"

Pitch across wide water spaces

13 1/2" x 7 3/8"

Working pressure

front 159 lb

back 156 lb

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

7 7/8" x 1 1/4"

Length as per Rule

30 2 1/2"

Distance apart

8 3/4" (max. at Cr.)

No. and pitch of stays

in each

2 @ 9 3/8"

Working pressure by Rules

151 lb

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

5/8"

Back

3/4"

Top

5/8"

Bottom

5/8"

Pitch of stays to ditto: Sides

9 1/2" x 9 3/8"

Back

9" x 9" c.c. C.C.

Top

9 3/8" x 8 3/4"

Are stays fitted with nuts or riveted over

C.C. margin & side stays are riveted both ends. Remainder of back stays are riveted inside C.C. & nuts outside.

Working pressure by Rules

152 lb

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26/30 tons

Thickness

3/4"

Pitch of stays at wide water space

13 1/2" x 9"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

172 lb

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

At body of stay 2 3/4"

Over threads 2 7/8"

No. of threads per inch

6

Area supported by each stay (18x18) - 4.57 sq. in.

Working pressure by Rules

155 lb

Screw stays: Material

Steel

Tensile strength

26/30 tons

Diameter

At turned off part 1 1/2"

Over threads 1 5/8"

No. of threads per inch

9

Area supported by each stay (9 3/8 x 8 3/4) - 1.45

C.C. tops

002764-002761-0131

Working pressure by Rules 155 lb. Are the stays drilled at the outer ends No. Margin stays: Diameter 1 5/8" Over threads 1 5/8".
 No. of threads per inch 9. Area supported by each stay (1 1/4" x 9) - 1.73 sq. in. Working pressure by Rules 152 lb.
 Tubes: Material IRON. External diameter 2 1/2" Plain 2 1/2" Stay 2 1/2" Thickness 3/8" & 5/16" No. of threads per inch 9.
 Pitch of tubes 3 3/4" x 3 3/4". Working pressure by Rules 229 lb. Manhole compensation: Size of opening in shell plate 20" x 16". Section of compensating ring 8 1/4" x 3" x 2". No. of rivets and diameter of rivet holes 32 - 1 1/4" dia.
 Outer row rivet pitch at ends 8 3/4". Depth of flange if manhole flanged 2 1/2". Steam Dome: Material None.
 Tensile strength None. Thickness of shell None. Description of longitudinal joint None.
 Diameter of rivet holes None. Pitch of rivets None. Percentage of strength of joint None.
 Internal diameter None. Working pressure by Rules None. Thickness of crown None. No. and diameter of stays None.
 Inner radius of crown None. Working pressure by Rules None.
 How connected to shell None. Size of doubling plate under dome None. Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell None.
 Type of Superheater None. Manufacturers of None.
 Number of elements None. Material of tubes None. Internal diameter and thickness of tubes None.
 Material of headers None. Tensile strength None. Thickness None. Can the superheater be shut off and the boiler be worked separately None.
 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler None.
 Area of each safety valve None. Are the safety valves fitted with easing gear None. Working pressure as per Rules None.
 Pressure to which the safety valves are adjusted None. Hydraulic test pressure: tubes None. forgings and castings None. and after assembly in place None. Are drain cocks or valves fitted to free the superheater from water where necessary None.
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes.

The foregoing is a correct description,

G. J. Hunt Manufacturer.

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

Are the approved plans of boiler and superheater forwarded herewith 23/11/35 (If not state date of approval.)
 Total No. of visits (British name)

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. British name. New Rpt 94124

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This Boiler has been built under special survey in accordance with the Rules and approved plans, and the materials & workmanship are good.
 The Boiler is fitted on top of the oil fuel bunker, in the boiler space forward of the Engine Room having access from the top platform of Eng. Room.
 The Boiler is fitted for burning oil fuel F.P. above 150°F, under forced draft, and also for the waste exhaust gases from the main Engine.
 The Safety Valves have been adjusted under steam to 150 lb per sq inch and the accumulation test was satisfactory.

Survey Fee ... £ See Index to Report When applied for, 19
 Travelling Expenses (if any) £ : : When received, 19

A. Watt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See New Rpt 95474



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