

REPORT ON BOILERS.

No. 95474

Received at London Office OCT -1 1937

Date of writing Report

19

When handed in at Local Office

30/9/1937

Port of

NEWCASTLE-ON-TYNE

ing in

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 "ARNDALE"

(Number of Visits)

Tons

Gross 8296

Net 4936

meter of

Engines made at

Sunderland

By whom made

Wm Doxford & Sons Ltd

Engine No.

201

When made 1937

Boilers made at

Newcastle on Tyne

By whom made

Swan, Hunter & W. Richardson Ltd

Boiler No.

1516

When made 1937

Nominal Horse Power

$\frac{1520}{15} = 101$

Owners

The Admiralty

Port belonging to

LONDON

Two-furnace Oil-fired

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR, DONKEY.

Manufacturers of Steel

The Steel Company of Scotland

(Letter for Record S)

Total Heating Surface of Boilers

1520 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

Oil-fired

No. and Description of Boilers

One Single ended Multi-tubular Scotch

Working Pressure

150 lbs

Tested by hydraulic pressure to

275 lbs

Date of test

9/7/37

No. of Certificate

725

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 1/2" Cockburn's Improved High Lift Spring Loaded

Area of each set of valves per boiler

per Rule 6.95 sq. in.

as fitted 7.94 "

Pressure to which they are adjusted

150 lbs

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

2'-10"

Is oil fuel carried in the

bunker

Yes

Smallest distance between shell of boiler and

O.F. Bunker

top plating

2'-10"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

11'-4 1/2"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

30/34 tons

Thickness

3/4"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D.R. lap

inter. none

long. seams

T.R. Dble butt straps

Diameter of rivet holes in

circ. seams 7/8"

long. seams 13/16"

Pitch of rivets

2.89"

5.75"

Percentage of strength of circ. end seams

plate 69.79

rivets 42.43

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.86

rivets 86.41

combined 89.02

Working pressure of shell by Rules

150 lbs

Thickness of butt straps

outer 9/16"

inner 11/16"

No. and Description of Furnaces in each Boiler

Two Deighton Corrugated

Material

Steel

Tensile strength

26/30 tons

Smallest outside diameter

37 3/16"

Length of plain part

top 2'-5" c.c. butt.

bottom

Thickness of plates

crowns 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 lbs

End plates in steam space: Material

Steel

Tensile strength

26/30 tons

Thickness

7/8"

Pitch of stays

16 3/8" x 14"

How are stays secured

Dble nuts & washers

Working pressure by Rules

151 lbs

Tube plates: Material

front Steel

back

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 1/2"

Working pressure

front 158 lbs

back 156 "

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

7 3/4" x 14"

Length as per Rule

29 21/32"

Distance apart

9 1/2"

No. and pitch of stays

in each

299

Working pressure by Rules

152 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

9 1/2" x 9 1/2"

Back

9" x 8"

Top

9 1/2" x 9"

Are stays fitted with nuts or riveted over

nuts both ends. Remainder of back stays, are riveted inside C.C. & nuts on outside.

Working pressure by Rules

150 lbs

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons

Thickness

7/8"

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26/30 tons

Thickness

7/8"

Pitch of stays at wide water space

14 3/4" x 9"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

210 lbs

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

At body of stay

Two top stays 2 1/2"

No. of threads per inch

6

Area supported by each stay

(15 3/4" x 14 3/4") - 3.26

Working pressure by Rules

151 lbs

Screw stays: Material

Steel

Tensile strength

26/30 tons

Diameter

At turned off part

1 5/8" + 1 1/2"

No. of threads per inch

9

Area supported by each stay

(9 1/2" x 9 1/2") - 1.73

Working pressure by Rules 172 lbs Are the stays drilled at the outer ends No Margin stays: Diameter 15/8"
 No. of threads per inch 9 Area supported by each stay (10 3/4 x 9) - 1.73 Working pressure by Rules 160 lbs
 Tubes: Material IRON External diameter { 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 lbs Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 7 3/8" x 3/4" x 2 No. of rivets and diameter of rivet holes 32 - 1 1/8" dia
 Outer row rivet pitch at ends 8" Depth of flange if manhole flanged 2 1/2" 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 None Manufacturers of { Tubes _____ Steel forgings _____ 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 _____
 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 _____ forgings and 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,
 G. J. Viner, Manufacturer.

Dates of Survey { During progress of work in shops - - - } See Machinery Report Are the approved plans of boiler and superheater forwarded herewith 15/10/35
 while building { During erection on board vessel - - - } Total No. of visits _____
 (British F.A.M.E.)

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

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 the Engine Room.
 The Boiler is fitted for burning oil fuel, F.P. above 150°f. under forced draft.
 The Safety valves have been adjusted under steam to 150 lbs per sq. inch and the accumulation test was satisfactory.

Survey Fee ... £ See Machinery Report When applied for, 10
 Travelling Expenses (if any) £ : : When received, 10

A. Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute See Machinery Report
 Assigned See No. J.E. 95474



Rpt. 13.
 Date of ...
 No. in Reg. Book 20517
 Built at _____
 Owners _____
 Electric _____
 Is the Ves _____
 System of _____
 Pressure _____
 Direct or _____
 If alternat _____
 Has the A _____
 Generator _____
 are they or _____
 Where mo _____
 series with _____
 approved _____
 Have certi _____
 Are all ter _____
 short circ _____
 Position _____
 in way of _____
 woodwork _____
 are the ge _____
 Earthing _____
 in metall _____
 a fuse on _____
 Switchb _____
 injury an _____
 horizontal _____
 materials _____
 is it of a _____
 non-hydr _____
 type _____
 omnibu _____
 "off" p _____
 switches _____
 Are tu _____
 fire-res _____
 voltm _____
 E _____
 do the _____