

REPORT ON BOILERS.

No. 94780

Received at London Office

6 MAR 7

Date of writing Report

19

When handed in at Local Office

5/3/1037

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

Newcastle on Tyne

Date, First Survey

16 July

Last Survey

4/3/

1937

(Number of Visits

Tons

Gross 8299

Net 4936

on the

Steel S. Motor Tanker ABBEYDALE.

Master

Built at

Newcastle on Tyne

By whom built

Swan, Hunter & Wigham Richardson & Co. Ltd

Yard No. 1506

When built

1937

Engines made at

Lunderland

By whom made

W. Dwyford & Sons Ltd

Engine No.

When made 1937

Boilers made at

Newcastle on Tyne

By whom made

Swan Hunter & Wigham Richardson & Co. Ltd

Boiler No. 1506

When made 1937

Donkey Boiler

Nominal Horse Power 173.

Owners

The Admiralty

Port belonging to

London

WASTE HEAT $\frac{8}{10}$ OIL FIREDMULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel

The Steel Coy of Scotland

Furnaces by Parkgate & S. C. Rotherham

(Letter for Record

S.

Total Heating Surface of Boilers

2595 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

oil fired & / or waste heat gas

No. and Description of Boilers

One S. ended Cylindrical Multitubular "Scotch"

Working Pressure

150 lb./sq. in.

Tested by hydraulic pressure to

275 lb.

Date of test

27/11/36

No. of Certificate

693.

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 3/4" Cockburn Improved

High lift Spring loaded

Area of each set of valves per boiler

per Rule 9.85
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 are fitted.

Smallest distance between boilers or uptakes and bunkers or woodwork

16"

Is oil fuel carried in the

bunker

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 1/2"

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 DR lap.
inter. none

long. seams

T.R. Dile Butt Strap

Diameter of rivet holes in

circ. seams 1"

long. seams 1 1/16"

Pitch of rivets

3.24"

6.625"

Percentage of strength of circ. end seams

plate 69.18
rivets 42.41

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 85.84
rivets 85.55
combined 88.80

Working pressure of shell by Rules

151.

Thickness of butt straps

outer 21/32
inner 25/32

No. and Description of Furnaces in each Boiler

Two at wings - Deighton Corrugated.
Plain tube at Centre back for access.

Material

Steel

Tensile strength

26/30

Smallest outside diameter

37 3/16"

Length of plain part

top 2' 4"

Thickness of plates

crown 13/32"

bottom 7/8" 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" x 18"

How are stays secured

Dile 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 lb.

Depth and thickness of girder

at centre

7 5/8" x 1 1/4"

Length as per Rule

30 2 1/2"

Distance apart

8 3/4" (max at cr.)

in each

2 7 9 3/8"

Working pressure by Rules

151 lb.

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

5/8"

Back

Cr 3/4", W 2 3/32"

Top

5/8"

Bottom

5/8"

Pitch of stays to ditto: Sides

9 1/2" x 9 3/8"

Back

9 x 9"

Cr. C.C.

Top

9 3/8" x 8 3/4"

Are stays fitted with nuts or riveted over

are riveted both ends.

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

Two top stays 2 3/4"

No. of threads per inch

6

Area supported by each stay

(18 x 18) - 4.57 [7]

Working pressure by Rules

155 lb.

Screw stays: Material

Steel

Tensile strength

26/30 tons

Diameter

At turned off part

1 1/2" + 1 5/8"

No. of threads per inch

9

Area supported by each stay

(9 3/8 x 8 3/8) - 1.45

C.C. tops.

002352-002361-0074

Lloyd's Register
Foundation

Working pressure by Rules 155 lb Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 5/8" or Over threads 1 5/8"
No. of threads per inch 9 Area supported by each stay (11 1/2 x 9) - 1.73 Working pressure by Rules 152 lb
Tubes: Material IRON External diameter { Plain 2 1/2" Thickness { 10 wg. No. of threads per inch 9
Stay 2 1/2" 3/8" x 5/16"
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" x 7/8" x 2 No. of rivets and diameter of rivet holes 32 7/16"
Outer row rivet pitch at ends 8 3/4 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
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
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 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.
G. J. Swaney
DIRECTOR 23/11/35

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

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. British Fame Nov Rpt 94124
British Endurance " " 94275

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

This Donkey Boiler has been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. The Boiler is fitted on top of the oil fuel bunker in the Boiler Space forward of Engine Room, having access from the top platform of the Engine Room.

The Boiler is fitted for burning oil fuel 3.37, flash point above 150°F, under forced draft, and also for waste exhaust gases from the Main Engines.

The Safety Valves have been adjusted under steam to 150 lb/sq in and the accumulation test was satisfactory.

Survey Fee ... £ 17.6 When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

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

Committee's Minute

FRI 12 MAR 1937

Assigned

See Nov. S.E. 94780