

## REPORT ON BOILERS.

No. 100938

-2 JAN 1943

Received at London Office

Date of writing Report

19

When handed in at Local Office

18/12/1942

Port of

NEWCASTLE-ON-TYNE

No. in  
Reg. Book.

Survey held at

Newcastle on Tyne

Date, First Survey

13 May

Last Survey

16 Dec

1942

on the

"BRITISH GRATITUDE"

(Number of Visits

Gross 8463  
Tons Net 4914

Master

Built at Newcastle

By whom built

Swan, Hunter &  
Wigham Richardson & Co

Yard No. 1673

When built 1942

Engines made at

Glasgow

By whom made

Harland &amp; Wolff, Ltd

Engine No. 8458

When made 1942

Boilers made at

Newcastle

By whom made

Swan, Hunter &  
Wigham Richardson & Co

Boiler No. 1732

When made 1942

Nominal Horse Power

235

Owners

British Tanker Co Ltd

Port belonging to

London

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

Manufacturers of Steel

The Steel Coy. of Scotland, Furnace plates by Appleby-Frodingham Steel Co.

(Letter for Record S)

Total Heating Surface of Boilers

3530 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

oil fired on  
white tank gases

No. and Description of Boilers

Two Single Ended

Working Pressure

150 lb/sq in

Tested by hydraulic pressure to

275 lb

Date of test

11/10/42

No. of Certificate

No 1007

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

Two 2 1/2" Cockburn's Imp' High Lift

Area of each set of valves per boiler

{ per Rule

7.56 sq in

{ as fitted

7.95 "

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

✓

Smallest distance between boilers or uptakes and bunkers or woodwork

✓

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

✓

Boilers on 2nd dk. flat  
in Eng. Room

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

12' 4 3/8"

Length

11' 0"

Shell plates: Material

Steel

Tensile strength

30 to 34 tons

Thickness

1 3/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end DR overlap,  
inter. none

long. seams

T.R. dble butt straps

Diameter of rivet holes in

{ circ. seams

15/16"

{ long. seams

7/8"

Pitch of rivets

3.08"

6 3/16"

Percentage of strength of circ. end seams

{ plate

69.59

{ rivets

42.24

Percentage of strength of circ. intermediate seam

{ plate

✓

{ rivets

✓

Percentage of strength of longitudinal joint

{ plate

85.85

{ rivets

85.96

{ combined

88.91

Working pressure of shell by Rules

151 lb.

Thickness of butt straps

{ outer

5/8"

{ inner

3/4"

No. and Description of Furnaces in each Boiler

Two "Deighton" Corrugated

Material

Stl.

Tensile strength

26 to 30 tons

Smallest outside diameter

3' 7 1/8"

Length of plain part

{ top

✓

{ bottom

✓

Thickness of plates

{ crown

15/32"

{ bottom

✓

Description of longitudinal joint

fire weld

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

none

Working pressure of furnace by Rules

156 lb.

End plates in steam space: Material

Stl.

Tensile strength

26 to 30 tons

Thickness

15/16"

Pitch of stays

17 3/4" x 14 5/8"

How are stays secured

Nuts inside &amp; outside

Working pressure by Rules

152 lb.

Tube plates: Material

{ front

Stl.

{ back

✓

Tensile strength

26 to 30 tons

Thickness

15/16"

3/4"

Mean pitch of stay tubes in nests

7 1/2" x 11 1/4"

Pitch across wide water spaces

13 1/2"

Working pressure

{ front

183 lb.

{ back

228 lb.

Girders to combustion chamber tops: Material

Stl.

Tensile strength

28 to 32 tons

Depth and thickness of girder

at centre

7 3/4" x 5/8" x two

Length as per Rule

2' 6 1/2"

Distance apart

9"

No. and pitch of stays

in each

2 @ 9 3/8"

Working pressure by Rules

153 lb.

Combustion chamber plates: Material

Stl.

Tensile strength

26 to 30 tons

Thickness: Sides

5/8"

Back

3/4"

Top

5/8"

Bottom

5/8"

Pitch of stays to ditto: Sides

9 x 9 3/8"

Back

7 1/2 x 9"

Top

9 x 9 3/8"

Are stays fitted with nuts or riveted over

fitted with NUTS.

Working pressure by Rules

160 lb.

Front plate at bottom: Material

Stl.

Tensile strength

26 to 30 tons

Thickness

15/16"

Thickness

15"

Lower back plate: Material

Stl.

Tensile strength

26 to 30 tons

Thickness

15/16"

Pitch of stays at wide water space

9" x 13 1/2"

Are stays fitted with nuts or riveted over

with nuts

Working Pressure

155 lb. min.

Main stays: Material

Stl.

Tensile strength

28 to 32 tons

Diameter

{ At body of stay,

2 3/8"

{ Over threads

✓

No. of threads per inch

6

Area supported by each stay

250-36 sq in

Working pressure by Rules

159 lb.

Screw stays: Material

Stl.

Tensile strength

26 to 30 tons

Diameter

{ At turned off part,

1 1/2"

{ Over threads

✓

No. of threads per inch

9

Area supported by each stay

84 sq in

Conto. P.T.O.

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Working pressure by Rules  $151\frac{1}{2}$  Are the stays drilled at the outer ends *No* Margin stays: Diameter { At ~~end~~ off part,  $1\frac{5}{8}$  +  $1\frac{3}{4}$  Over threads }  
 No. of threads per inch *9* Area supported by each stay  $92.8\text{ sq in}$  Working pressure by Rules  $163\frac{1}{2}$   
 Tubes: Material *Steel* External diameter { Plain  $2\frac{1}{2}$  Stay } Thickness {  $10\text{ wt}$   $1\frac{1}{4}$  +  $5\frac{1}{16}$  } No. of threads per inch *9*  
 Pitch of tubes  $3\frac{3}{4} \times 3\frac{3}{4}$  Working pressure by Rules  $166\text{ lb. min.}$  Manhole compensation: Size of opening in shell plate  $20 \times 16$  Section of compensating ring  $17\frac{1}{2} \times \frac{13}{16}$  No. of rivets and diameter of rivet holes  $38\text{ of } 1\frac{1}{8}\text{ dia}$   
 Outer row rivet pitch at ends *8* Depth of flange if manhole flanged  $2\frac{1}{2}$  Steam Dome: Material *none*  
 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 { 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  
 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 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,  
 SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Manufacturer.

Dates of Survey { During progress of work in shops - - } See *Michy. Report* Are the approved plans of boiler and superheater forwarded herewith *1/10/41*  
 { During erection on board vessel - - - }  
 Total No. of visits

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *British Character SHORR Lard 1698 NWC Rpt 100,073.*

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

*These Donkey Boilers have been constructed under special survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good. The Boilers have been efficiently fitted on board the vessel, tested under steam under working conditions and found satisfactory.*

*See also Michy. Rpt 4 & 6.*

Survey Fee ... £ *See Michy. Rpt 4 & 6.* When applied for, 19  
 Travelling Expenses (if any) £ When received, 19

*Rebatt*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 19 JAN 1943

Assigned

*See Nwc. 28. 100938*



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