

## REPORT ON BOILERS.

No. 50794.

AUG -8 1940

Received at London Office

Date of writing Report 19-7-1940 When made in at Local Office

23 JUL 1940

Port of

HULL

No. in Survey held at  
Reg. Book.

Hull

Date, First Survey

5.9.39.

Last Survey

18.7.1940.

(Number of Visits 52.)

Gross 608

Tons Net 207

on the Steam Trawler ST ZENO

Built at Beverley

By whom built

Cook, Widdon &amp; Grummell, Ltd

Yard No. 655

When built 1940.7

Engines made at

Hull

By whom made

C.D. Holmes &amp; Co Ltd

Engine No. 1557

When made 1940.7

Boilers made at

do

By whom made

do

Boiler No. 1556

When made do

Nominal Horse Power

165

Owners

The Admiralty

Port belonging to

✓

\* Note. Boilers 1556 &amp; 157 have been transposed 1557 being fitted in the ST APOLLO.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Co of Scotland &amp; Appleby, Wodmington Steel Co

(Letter for Record

S

Total Heating Surface of Boilers

2551 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

One. S.B.

Working Pressure 225 lbs/sq in

Tested by hydraulic pressure to 390 lbs.

Date of test 18.12.39

No. of Certificate 4020

Can each boiler be worked separately

✓

Area of Firegrate in each Boiler

64 sq ft

No. and Description of safety valves to each boiler

One. Therm valve. Spring loaded.

Area of each set of valves per boiler

per Rule 16.1 sq in

as fitted 19.29 sq in

Pressure to which they are adjusted 225 lbs/sq in

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

12"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

✓

Is the bottom of the boiler insulated

No

Largest internal dia. of boilers

15'-9 1/16"

Length

11'-0"

Shell-plates: Material

Steel

Tensile strength 31/35 tons/sq in

Thickness

1 15/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end D.R. lap

long. seams

T.R. - D.B.S.

Diameter of rivet holes in

circ. seams 1 15/32"

long. seams 1 1/2"

Pitch of rivets

3 7/8"

Percentage of strength of circ. end seams

plate 62.1%

rivets 44.2%

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 84.31%

rivets 86.9%

combined 85.98%

Thickness of butt straps

outer 1 5/32"

inner 1 9/32"

No. and Description of Furnaces in each Boiler

3 cf. "Dighton Section"

Material

Steel

Tensile strength

26/30 tons/sq in

Smallest outside diameter

3'-10"

Length of plain part

top

Thickness of plates

crown 23/32"

bottom 23/32"

Description of longitudinal joint

Welded

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

End plates in steam space: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

1 1/4"

Pitch of stays 18 7/8" x 19 1/8"

How are stays secured

Double nuts &amp; washers

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30 tons/sq in

Thickness

31/32"

29/32"

Mean pitch of stay tubes in nests

10.94"

Pitch across wide water spaces

14 1/2"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33 tons/sq in

Depth and thickness of girder

at centre

9" x 7/8" Double

Length as per Rule

2'-8 1/4"

Distance apart

9 1/4"

No. and pitch of stays

in each

3-7 1/2"

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness: Sides

23/32"

Back

23/32"

Top

1 1/16"

Bottom

15/16"

Pitch of stays to ditto: Sides

9 1/4" x 8"

Back

8 1/4" x 9 1/2"

Top

9 1/4" x 7 1/2"

Are stays fitted with nuts or riveted over

No

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

31/32"

Lower back plate: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

29/32"

Pitch of stays at wide water space

14 1/2" x 9 1/2" x 9 1/16"

2

Are stays fitted with nuts or riveted over

No

Main stays: Material

Steel

Tensile strength

28/32 tons/sq in

Diameter

At body of stay, or Over threads

3 3/8"

No. of threads per inch

8

Screw stays: Material

Steel

Tensile strength

26/30 tons/sq in

Diameter

At turned off part, or Over threads

1 3/4"

No. of threads per inch

10

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Foundation



Are the stays drilled at the outer ends CxO Margin stays: Diameter <sup>At turned off part.</sup> 1 7/8", 2", 2 1/8"  
 No. of threads per inch 10  
 Tubes: Material Steel External diameter <sup>Plain</sup> 3 1/2" <sup>Stay</sup> 3 1/2" Thickness <sup>7. W. G.</sup> 9/16, 3/8, 7/16" No. of threads per inch 9  
 Pitch of tubes 4 3/4" x 4 3/4" Manhole compensation: Size of opening in  
 shell plate 16" x 12" Section of compensating ring 9' 10 1/4" x 1 13/32" No. of rivets and diameter of rivet holes 56 2 1/2" dia  
 Outer row rivet pitch at ends 10 3/4" Depth of flange if manhole flanged Top 3 1/4" Bottom 3 1/2" Steam Dome: Material Steel  
 Tensile strength 26/30 ton / 0" Thickness of shell 3/4" Description of longitudinal joint S.R. lap.  
 Diameter of rivet holes 1 1/32" Pitch of rivets 2 1/4" Percentage of strength of joint <sup>Plate</sup> 54% <sup>Rivets</sup> 43.8%  
 Internal diameter 2' 9" Thickness of crown 15/16" No. and diameter of  
 stays Wood - 2 3/8" Inner radius of crown Flat  
 How connected to shell Riveted Size of doubling plate under dome 4' 11 1/4" dia x 1 13/32" Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell 15" dia - 10 3/4"  
 Type of Superheater Smoke tube type The Superheater Co. Ltd. Manufacturers of <sup>Tubes</sup> See Man Rpt  
 Number of elements 60 Material of tubes Steel Internal diameter and thickness of tubes 17 1/2" dia 3 1/4" thick  
 Material of headers Steel Tensile strength See Man Rpt Thickness 5 1/8" Can the superheater be shut off and  
 the boiler be worked separately Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes  
 Area of each safety valve 1.77 sq" Are the safety valves fitted with easing gear Yes  
 Pressure to which the safety valves are adjusted 230 lbs / sq" Hydraulic test pressure:  
 tubes 1000 lbs / sq" forgings and castings 675 lbs / sq" and after assembly in place 675 lbs / sq" Are drain cocks or  
 valves fitted to free the superheater from water where necessary Yes  
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,  
 FOR CHURCHES D. HOLMES & CO., LTD.  
 Manufacturer.

Dates of Survey while building <sup>During progress of work in shops - -</sup> 1939 Sept. 5, 11, 12, 15, 20, 27. Oct. 3, 5, 11, 17, 24, 26.  
<sup>During erection on board vessel - -</sup> Nov. 1, 7, 10, 15, 17, 17, 22, 24, 27, 29. Dec. 6, 6, 7, 7, 9, 14, 18, 20, 21.  
1940 Jan. 5, 10, 12, 15, 16, 26, Feb. 7, 20 Total No. of visits 52.  
29. Mar. 7, 8, 12, 15, 29, 29. Apr. 8, 16, 22. June. 21, 27. July. 18.  
 Are the approved plans of boiler and superheater forwarded herewith 31-7-39  
 (If not state date of approval.)

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. Lady Lilian. Hul Rpt 50402  
St APOLLO

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
This boiler has been constructed under Special Survey in accordance with the approved plan & the Rules. The workmanship & materials are good & when tested by hydraulic pressure it was found light & safe in every respect.

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

W. J. J. J. J.  
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 13 AUG 1940

Committee's Minute  
 Assigned See Hul. J.E. 50794