

REPORT ON BOILERS.

No. 50794.

AUG - 8 1940

Received at London Office

Date of writing Report 19-7-1940

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

Net 207

on the Steam Trawler **ST ZENO**

Built at Beverley

By whom built

Cook, Mellor & Grummell, Ltd

Yard No. 655

When built 1940.7

Engines made at Hull

By whom made

C. D. Holmes & 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 + 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 & Appleby, Hodgkiss & Co Ltd

(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

Yes

Area of Firegrate in each Boiler

64 sq ft

No. and Description of safety valves to each boiler

One - Down 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

84.31%

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

bottom

Thickness of plates

crown 23/32"

bottom 23/32"

Description of longitudinal joint

Welded

Dimensions of stiffening rings on furnace or e.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 & 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

Yes

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

Yes

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

Are the stays drilled at the outer ends CXO Margin stays: Diameter ^{At turned off part} 1 7/8", 2", 2 1/8"
or
^{Over threads}

No. of threads per inch 10

Tubes: Material Steel External diameter ^{Plain} 3 1/2" ^{Stay} 3 1/2" Thickness ^{7. W.G.} 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" (Cover dome) 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 ^{Plate} 54% ^{Rivets} 43.8%

Internal diameter 21.9" 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 1 5/8" dia - 10 3/4"

Type of Superheater Smoke tube type The Superheater Co. Ltd. Manufacturers of ^{Tubes} See main Report ^{Steel forgings} ^{Steel castings}

Number of elements 60 Material of tubes Steel Internal diameter and thickness of tubes 1 7/8" dia 3 1/4" thick

Material of headers Steel Tensile strength See main Report 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/0" Hydraulic test pressure: tubes 1000 lbs/0" forgings and castings 675 lbs/0" and after assembly in place 675 lbs/0" 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.
J. Cooper Manufacturer.

Dates of Survey while building ^{During progress of work in shops - -} 1939 Sept. 5, 11, 12, 15, 20, 27, Oct. 8, 5, 11, 17, 24, 26, Nov. 1, 7, 10, 15, 17, 17, 22, 24, 27, 29, Dec. 6, 6, 7, 7, 9, 14, 18, 20, 21. Are the approved plans of boiler and superheater forwarded herewith 31-7-39 (If not state date of approval.)

^{During erection on board vessel - - -} 1940 Jan. 5, 10, 12, 15, 16, 26, Feb. 7, 20, 29, Mar. 7, 8, 12, 15, 29, 29, Apr. 8, 16, 22, June, 21, 27, July, 16. Total No. of visits 52.

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 factors in every respect.

Survey Fee £ : : When applied for, 10
Travelling Expenses (if any) £ : : When received, 10
W. J. M. Johnson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 13 AUG 1940
Assigned See Hul. 7.E. 50794

