

REPORT ON BOILERS.

No. 53378.

Date of writing Report

19

When handed in at Local Office

20 MAR 1946

19

Port of

Received at London Office

1 APR 1946

No. in
Reg. Book.

Surrey held at

Hull

Date, First Survey

10. 10. 45

Last Survey

1. 3.

19 46.

on the

ST. MARK

(Number of Visits 32)

Gross 579
Tons Net 216

Built at

Selby

By whom built

Cochran Sons Ltd.

Yard No. 1309 When built 1946

Engines made at

Hull

By whom made

Engine No. 1712 When made

Boilers made at

Hull

By whom made Chas. D. Holmes & Co. Ltd.

Boiler No. 1712 When made

Nominal Horse Power

Owners St. Andrew's Ste. Fishing Co. Ltd. Port belonging to Hull

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Co. of Scotland Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

2,555 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

One single end cylindrical multitubular

Working Pressure

225 lb.

Tested by hydraulic pressure to

388 lb.

Date of test

31.12.45

No. of Certificate

4259

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

67.5 sq. ft.

No. and Description of safety valves to each boiler

3 1/2" D.S. Ordinary

Area of each set of valves per boiler

per Rule 13.3 sq. in.

as fitted 19.24 sq. in.

Pressure to which they are adjusted

230 lb.

Are they fitted with easing gear

YES

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

15'

Is oil fuel carried in the double bottom under boilers

NONE

Smallest distance between shell of boiler and tank top plating

NONE

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 in²

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 65%

rivets 45%

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 84.3%

rivets 86.9%

combined 85.9%

Thickness of butt straps

outer 1 5/32"

inner 1 9/32"

No. and Description of Furnaces in each Boiler

THREE DEIGHTON TYPE CORRUGATION

Material

STEEL

Tensile strength

26-30 tons in²

Smallest outside diameter

3' 11 1/32"

Length of plain part

top

bottom

Thickness of plates

crown 47/64"

bottom 64/64"

Description of longitudinal joint

WELDED

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

NONE

End plates in steam space: Material

STEEL

Tensile strength

26-30 tons in²

Thickness

1 1/4"

Pitch of stays

19 1/4" x 18 5/8"

How are stays secured

Double nuts & washers

Tube plates: Material

front Steel

back

Tensile strength

26-30 tons in²

Thickness

3/32"

29/32"

Mean pitch of stay tubes in nests

9 1/2" x 9 1/2"

Pitch across wide water spaces

14 1/4"

Girders to combustion chamber tops: Material

STEEL

Tensile strength

29-33 TONS IN²

Depth and thickness of girder

at centre

9" Two 7/8"

Length as per Rule

2' 8 1/4"

Distance apart

9 1/4"

No. and pitch of stays

in each

THREE 7 1/2"

Combustion chamber plates: Material

STEEL

Tensile strength

26-30 TONS IN²

Thickness: Sides

2 3/32"

Back

2 3/32"

Top

1 1/16"

Bottom

15/16"

Pitch of stays to ditto: Sides

9 3/4" x 8"

Back

9 1/2" x 8 1/4"

Top

9 1/4" x 7 1/2"

Are stays fitted with nuts or riveted over

NUTS

Front plate at bottom: Material

STEEL

Tensile strength

26-30 TONS IN²

Thickness

3/32"

Lower back plate: Material

STEEL

Tensile strength

26-30 TONS IN²

Thickness

29/32"

Pitch of stays at wide water space

14 1/2" x 9 1/2"

Are stays fitted with nuts or riveted over

NUTS

Main stays: Material

STEEL

Tensile strength

28-32 TONS IN²

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 IN²

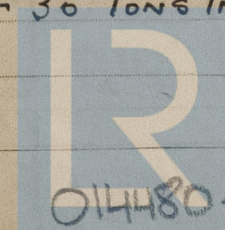
Diameter

At turned off part, or Over threads

1 3/4", 1 7/8", 2", 2 1/8"

No. of threads per inch

10



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ST. MARK

Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 7/8", 2", 2 1/8"

No. of threads per inch 10

Tubes: Material STEEL External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { 7 WG 5/16", 3/8", 1/2" 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 4'-11 1/4" DIA, 1 15/32 TK. No. of rivets and diameter of rivet holes 118 - 1 1/2"

Outer row rivet pitch at ends 4'-6 3/4" P.C.D. Depth of flange if manhole flanged Top 3 1/4" Bot 3 1/2" Steam Dome: Material STEEL

Tensile strength 26-30 TONS / IN² 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 TWO 2 3/8" Inner radius of crown Flat.

How connected to shell D. R. Size of doubling plate under dome 4'-11 1/4" DIA, 1 15/32 TK. Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 1 1/2" 4'-6 3/4" P.C.D.

Type of Superheater ME-LE-SCO R. B. SUPERHEATER CO. Manufacturers of { Tubes Weldless Steel Tubes, Birmingham Steel forgings Vaughan, New Britain Steel castings David Brown, Huddersfield

Number of elements 60 Material of tubes S.D. STEEL Internal diameter and thickness of tubes

Material of headers F. I. STL. Tensile strength Thickness 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 2" DIA. Are the safety valves fitted with easing gear YES

Pressure to which the safety valves are adjusted 230 #. Hydraulic test pressure: tubes 675 # forgings and castings 675 # and after assembly in place 675 # 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.

Heating Surface of Superheater
(from plan) = 1035 #

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

W. R. Evans Manager

Dates of Survey { During progress of work in shops - 1945. Oct 10, 22, Nov. 7, 9, 19, Dec. 6, 18, 28, 31. Are the approved plans of boiler and superheater forwarded herewith 3.5.45. (If not state date of approval.) while building { During erection on board vessel - 1945. Jan. 10, 24, 23, 26. Feb. 1, 2, 9. See machinery Rpt. Total No. of visits 33.

SIMILAR TO "ST BARTHOLOMEW"

Is this Boiler a duplicate of a previous case / If so, state Vessel's name and Report No. Hull Rpt No.

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

This boiler has been constructed under Special Survey in accordance with the Rules, approved plans, and the Secretary's letters. The workmanship & materials are good. The boiler has been installed in Steam Tractor "ST MARK", tried under working conditions, safety valves adjusted under steam, accumulation test held and on completion of all tests found satisfactory in every respect.

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

W. L. Shivers

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 26 APR 1946

Assigned

See F.E. machy. rpt.



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