

REPORT ON BOILERS.

No. 14368.

19 JAN 1943

Received at London Office

Date of writing Report

19

When handed in at Local Office

9/11/

1942

Port of

Middlesbrough

No. in Survey held at
Reg. Book.

Stockton on Tees

Date, First Survey

Last Survey

19

on the

"EMPIRE SERAPH"

(Number of Visits)

Gross

129

Tons

Net

Nil.

Built at Thorne By whom built R. Dunston Ltd. Yard No. T 374 When built 1942
 Engines made at Gt. Yarmouth By whom made Crabtree (1931) Ltd. Engine No. 633 When made "
 Boilers made at Stockton By whom made Stockton Chem. Eng. & Riley Bros Ltd. Boiler No. 6586 When made 1942
 Nominal Horse Power " Owners Ministry of War Transport Port belonging to "

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd & Steel Company Scotland. (Letter for Record S ✓)
 Total Heating Surface of Boilers 1367 sq. ft. ✓ Is forced draught fitted Yes Coal or Oil fired Coal
 No. and Description of Boilers 1 - S.E. Marine Boiler Working Pressure 200 lb. sq. in.
 Tested by hydraulic pressure to 350 lb. sq. in. Date of test 4-11-42 No. of Certificate 7062 Can each boiler be worked separately ✓
 Area of Firegrate in each Boiler 36.5 sq. ft. No. and Description of safety valves to each boiler "
 Area of each set of valves per boiler { per Rule 7.9 sq. ft. Pressure to which they are adjusted 200 lb. Are they fitted with easing gear Yes
 as fitted 7.9 sq. ft.
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓
 Smallest distance between boilers 8" 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 None Is the bottom of the boiler insulated No
 Largest internal dia. of boilers 11'-6" Length 10'-0" Shell plates: Material Steel Tensile strength 24/33
 Thickness 1 1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end DR
 long, seams TR DBS Diameter of rivet holes in { circ. seams 1 1/4" Pitch of rivets { 3.61"
 long, seams 1 7/16" 7 3/8"
 Percentage of strength of circ. end seams { plate 65.4 ✓ Percentage of strength of circ. intermediate seam { plate "
 rivets 52.2 ✓ rivets "
 Percentage of strength of longitudinal joint { plate 85.39 ✓ 86.66 ✓
 rivets 86.66 ✓ combined 86.45 ✓
 Thickness of butt straps { outer 13/16" No. and Description of Furnaces in each Boiler 2 - Corrugated (Morrison)
 inner 15/16" Material Steel Tensile strength 26/30 Smallest outside diameter 3'-5"
 Length of plain part { top " Thickness of plates { crown 19
 bottom " bottom 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 Thickness 15/16" Pitch of stays 16" x 14 1/2"
 How are stays secured D. Nuts & washers
 Tube plates: Material { front Steel Tensile strength 26/30 Thickness 15/16"
 back " 7/8"
 Mean pitch of stay tubes in nests 8 7/8" Pitch across wide water spaces 14"
 Girders to combustion chamber tops: Material Steel Tensile strength 28/32 Depth and thickness of girder
 at centre 7 3/4" x 20 3/4" Length as per Rule 2'-6" Distance apart 8 1/4" No. and pitch of stays
 in each 2-9 1/2" Combustion chamber plates: Material Steel
 Tensile strength 26/30 Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/16"
 Pitch of stays to ditto: Sides 9 1/4" x 8 3/4" Back 9 1/2" x 8 1/2" Top 8 1/2" x 9 1/4" Are stays fitted with nuts or riveted over Nuts
 Front plate at bottom: Material Steel Tensile strength 26/30
 Thickness 15/16" Lower back plate: Material Steel Tensile strength 26/30 Thickness 15/16"
 Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over Nuts
 Main stays: Material Steel Tensile strength 28/32
 Diameter { At body of stay, 2 7/8" No. of threads per inch 6
 or Over threads "
 Screw stays: Material Steel Tensile strength 26/30
 Diameter { At turned off part, 1 7/8" & 1 3/4" No. of threads per inch 9
 or Over threads "

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Are the stays drilled at the outer ends

no

Margin stays: Diameter { At turned off part, *1 7/8"*
or
Over threads

No. of threads per inch

9

Tubes: Material *Welded Steel*

External diameter

Plain *2 3/4"*
Stay *2 3/4"*

Thickness

8/16"
7/16"

No. of threads per inch

9

Pitch of tubes

4" x 3 3/4"

Manhole compensation: Size of opening in

shell plate

17" x 21"

Section of compensating ring

7 1/2" x 1 1/2"

No. of rivets and diameter of rivet holes

52 - 1 1/16"

Outer row rivet pitch at ends

7 1/2"

Depth of flange if manhole flanged

✓

Steam Dome: Material

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

Thickness of crown

No. and diameter of

stays

Inner radius of crown

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

Manufacturers of

Tubes

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

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,

Manufacturer.

Dates
of Survey
while
building

During progress of
work in shops - -
During erection on
board vessel - -

Sept. 18. 26. Oct. 2. 9. 22. Nov. 12. Dec. 4. 28. 30.
1942 Jan. 4. 19. 28. Feb. 6. 19. 24. March 2. 14.
July 13. Sept. 1. Oct. 6. 22. Nov. 4.

Are the approved plans of boiler and superheater forwarded herewith *16-7-41*
(If not state date of approval.)
Total No. of visits *22.*

Is this Boiler a duplicate of a previous case

Yes.

If so, state Vessel's name and Report No.

17204 M.O.B.

GENERAL REMARKS

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

This Boiler has been constructed under Special Survey & in accordance with Rule Requirements & approved plan. The materials & workmanship are good & on completion the boiler was hydraulically tested to 350 lb. & found satisfactory. The Boiler has been forwarded to Hull to be fitted on board Messrs R. Dunstan Contract No 374.

Above boiler fitted on board EMPIRE SERAPH, safety valves adjusted & above, tried under working condition in River Humber and subsequently examined and found satisfactory in every respect

W. Shields
14 Dec 23/12/42.

Survey Fee

£ *9* : *24* : -

When applied for, *9/11/* 19 *42.*

Travelling Expenses (if any) £

: : :

When received, 19

Committee's Minute *FRI. 19 FEB 1943*

Assigned

See Hull 2 E. 51867



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