

REPORT ON BOILERS.

No. 14368.

19 JAN 1943

Received at London Office

Date of writing Report 19 9/11/1942 When handed in at Local Office 9/11/1942 Port of Middlesbrough

No. in Survey held at Stockton on Tees Date, First Survey 19 Last Survey 15

Reg. Book. "EMPIRE SERAPH" (Number of Visits 129) Tons { Gross Nil Net Nil }

Built at Thorne By whom built R. Dunston Lt. Yard No. T 374 When built 1942

Engines made at Gt. Yarmouth By whom made Crabtree (1931) Lt. Engine No. 633 When made "

Boilers made at Stockton By whom made Stockton Chem. Eng. Riley Bl. Lt. 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 of Steel Company of 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.

Tested by hydraulic pressure to 350 lb. sq. 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. as fitted 7.9 sq. ft. Pressure to which they are adjusted 200 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 boiler uptakes and bunkers or woodwork 8" 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 29/33

Thickness 1 1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end DR inner " }

long. seams TR DBS Diameter of rivet holes in { circ. seams 1 1/4" long. seams 1 7/16" Pitch of rivets { 3.61" 7 7/8" }

Percentage of strength of circ. end seams { plate 65.4 rivets 52.2 } Percentage of strength of circ. intermediate seam { plate " rivets ✓ }

Percentage of strength of longitudinal joint { plate 85.39 rivets 86.66 combined 86.45 }

Thickness of butt straps { outer 13/16" inner 15/16" } No. and Description of Furnaces in each Boiler 2 - Corrugated (Morrison)

Material Steel Tensile strength 26/30 Smallest outside diameter 3'-5"

Length of plain part { top " bottom " } Thickness of plates { crown 19 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 back " } Tensile strength 26/30 Thickness { 15/16" 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 1/4" 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"

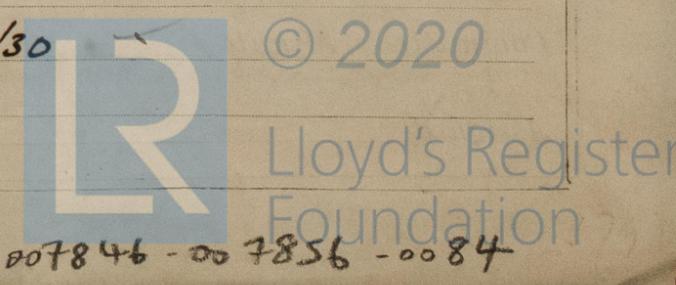
Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over Nuts

Main stays: Material Steel Tensile strength 28/32

Diameter { At body of stay, or Over threads 2 7/8" } No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26/30

Diameter { At turned off part, or Over threads 1 7/8" & 1 3/4" } No. of threads per inch 9



Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part,} 1 7/8"
 No. of threads per inch 9
 Tubes: Material Welded Steel External diameter ^{Plain} 2 3/4" ^{Stay} 2 3/4" Thickness 8/16" 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 Steel
 Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____
 Diameter of rivet holes _____ Pitch of rivets _____ Percentage of strength of joint ^{Plate} _____
 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 ^{During progress of} work in shops - Sept. 18. 26. Oct. 2. 9. 22. Nov. 12. Dec. 4. 20. 30. Are the approved plans of boiler and superheater forwarded herewith 16-7-41
 while building ^{During erection on} board vessel - July 13. Sept. 1. Oct. 6. 22. Nov. 4. (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 MOB.

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 lbs. & found satisfactory. The Boiler has been forwarded to Hull to be fitted on board Messrs R. Dunstan Contract n 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 Hull 23/12/42.

Survey Fee £ 9 : 24 : - When applied for, 9/11/ 1942.
 Travelling Expenses (if any) £ : : When received, 19

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

Committee's Minute FRI. 19 FEB 1943

Assigned

See Hul 7E 51867



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