

# REPORT ON BOILERS.

No. 17828

Received at London Office

MAY 14 1938

Date of writing Report 9-5-1938 When handed in at Local Office 12-5-1938 Port of West Hartlepool

No. in Reg. Book. Survey held at Hartlepool Date, First Survey 17<sup>th</sup> March, 1938 Last Survey 4<sup>th</sup> May, 1938

on the V. S. S. "AVILA" (Number of Visits 13) Tons {Gross Net

Master Built at South Bank By whom built Smith's Dock Co Ltd Yard No. 1038 When built 1938

Engines made at South Bank By whom made " " " Engine No. 503 When made 1938

Boilers made at Hartlepool By whom made Richardsons Westgarth & Co Ltd Boiler No. D503 When made 1938

Nominal Horse Power Owners Port belonging to

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

Manufacturers of Steel The Appleby Frodingham Steel Co. (Letter for Record S)

Total Heating Surface of Boilers 3,700 sq ft Is forced draught fitted yes Coal or Oil fired oil

No. and Description of Boilers 2, Single ended. Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs Date of test 4-5-38 No. of Certificate 3888 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2 Cochran's High Lift 2 1/2 dia

Area of each set of valves per boiler {per Rule 11.9 as fitted 14.13 Pressure to which they are adjusted 185 lbs 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 yes Is oil fuel carried in the double bottom under boilers yes

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 13'-0 7/8" Length 11'-6" Shell plates: Material steel Tensile strength 29-33 tons

Thickness 1 1/16" Are the shell plates welded or flanged yes Description of riveting: circ. seams {end lap, double riveted. inter. none.

long. seams L.R.D.B.S Diameter of rivet holes in {circ. seams 1 1/8" long. seams 1 1/8" Pitch of rivets {3 1/2" 8"

Percentage of strength of circ. end seams {plate 67 rivets 42.3 Percentage of strength of circ. intermediate seam {plate None. rivets None.

Percentage of strength of longitudinal joint {plate 85.93 rivets 86.8 combined 89 Working pressure of shell by Rules 184 lbs.

Thickness of butt straps {outer 7/8" inner 15/16" No. and Description of Furnaces in each Boiler 3, Deighton section, Goulay Bank Ends.

Material steel Tensile strength 26-30 tons Smallest outside diameter 35 1/4"

Length of plain part {top — bottom — Thickness of plates {crown 1/2" bottom 1/2" Description of longitudinal joint welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 204 lbs.

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 3/32" Pitch of stays 18 1/4" x 16 1/2"

How are stays secured Double nuts. Working pressure by Rules 183 lbs.

Tube plates: Material {front steel back steel Tensile strength {26-30 tons Thickness {centre 1 1/16" wings 3/4"

Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 13 1/2" Working pressure {front 188 lbs. back 190 lbs @ 1/16" plate.

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 8 1/2" x 1 3/4" Length as per Rule 33 3/8" Distance apart 9 1/4" No. and pitch of stays

in each 3 @ 8" Working pressure by Rules 192 lbs. Combustion chamber plates: Material steel.

Tensile strength 26-30 tons Thickness: Sides 1 1/16" Gutter 2 3/32" Back 2 3/32" Top 1 1/16" Bottom 7/8"

Pitch of stays to ditto: Sides 10 1/2" x 7 3/4" Back 8" x 8" Top 9 1/4" x 8" Are stays fitted with nuts or riveted over remains riveted.

Working pressure by Rules 188 lbs. Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 1 3/16" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 1 3/16"

Pitch of stays at wide water space 15" x 8" Are stays fitted with nuts or riveted over nutted.

Working Pressure 186 lbs. Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, or Over threads 2 3/4" No. of threads per inch 6 Area supported by each stay 301 sq ins.

Working pressure by Rules 183 lbs Screw stays: Material steel Tensile strength 26-30 tons

Diameter {At turned off part, or Over threads {1 5/8" 1 9/32" 1 11/32" No. of threads per inch 9 Area supported by each stay 64 sq ins.

Chamber top	1 5/8"	1 9/32"	1 11/32"
Chamber side	1 3/4"	1 3/4"	1 1/2"
Chamber back	1 3/4"	1 3/4"	1 1/2"
Area	440	520	640

Working pressure by Rules **195 lbs** ✓ Are the stays drilled at the outer ends **no.** ✓ Margin stays: Diameter { At turned off part, **1 1/32"** or Over threads **1 3/4"**

No. of threads per inch **9** ✓ Area supported by each stay **92 sq ins.** Working pressure by Rules **197 lbs.**

Tubes: Material **Steel** ✓ External diameter { Plain **2 1/2"** Stay **2 1/2"** Thickness { **9 w.g.** **7/16"** **3/8"** **5/16"** No. of threads per inch **9**

Pitch of tubes **3 3/4" x 3 3/4"** ✓ Working pressure by Rules **200 lbs.** Manhole compensation: Size of opening in shell plate **12" x 16"** ✓ Section of compensating ring **32" x 28" x 1 1/16"** No. of rivets and diameter of rivet holes **28, 1 3/16 Dia.**

Outer row rivet pitch at ends **8** ✓ 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 ✓ Working pressure by Rules ✓ Thickness of crown ✓ No. and diameter of stays ✓

How connected to shell ✓ Inner radius of crown ✓ Working pressure by Rules ✓

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 **None fitted.** 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 Working pressure as per Rules

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

For **RICHARDSONS, WEBB & Co. LIMITED.**  
The foregoing is a correct description,  
*W. E. Poreidge* Manufacturer.  
DIRECTOR

Dates of Survey { During progress of work in shops - - } **1938. Mar. 17-23-25-28-29-31. Apr. 1-4-11-14** Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building { During erection on board vessel - - } **25 May 24.**

Total No. of visits **13**

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

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) **These Boilers have been constructed under special survey and in accordance with the approved plan for a working pressure of 180 lbs per sq inch. The materials & workmanship have been found good.**

**Upon completion the Boilers were tested in the presence of the undersigned with hydraulic pressure 320 lbs per sq inch, showed no signs of weakness and were found tight and sound in every respect at that pressure.**

**The Boilers are intended for Smith's Dock Co. Middlesbrough, their yard No 1038.**

**Boiler fitted on board. Examined under steam. Safety valves adjusted and satisfactory accumulation test held *Bechoffitt***

Survey Fee ... .. £ **24 : 14 : 0** } When applied for, **12-5-1938**

Travelling Expenses (if any) £ : : } When received, **10-6-1938** *alyf*

**J. Brooke Smith**  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUE. 23. AUG 1938**

Assigned **See Ind. 16.386**

