

# REPORT ON BOILERS.

No. 18302

18 JUN 1942

Received at London Office

Date of writing Report 17/6/1942 When handed in at Local Office 17/6/1942 Port of *W. Hartlepool* 23 July 1942

No. in Survey held at *Hartlepool* Date, First Survey 8<sup>th</sup> Dec. 1941. Last Survey 12<sup>th</sup> June, 1942

on the *5/8 "Empire Guidon"* (Number of Visits 56) Gross Tons Net

Built at *Hawerton Hill* By whom built *Furness Shipbuilding Co. Ltd.* Yard No. 346 When built 1942

Engines made at *Hartlepool* By whom made *Richardson Westgarth Co.* Engine No. 2720 When made "

Boilers made at " By whom made " " " Boiler No. " When made "

Nominal Horse Power 514 510 Owners Port belonging to

## MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Steel Co. of Scotland* (Letter for Record *S*)

Total Heating Surface of Boilers *4353 7248* Is forced draught fitted *Yes* Coal or Oil fired *Coal*

No. and Description of Boilers *3 S.E. Multitubular* Working Pressure *220 18/12*

Tested by hydraulic pressure to *380 18/12* Date of test *26.5.42* No. of Certificate *3968* Can each boiler be worked separately *Yes*

Area of Firegrate in each Boiler *55 sq. ft.* No. and Description of safety valves to each boiler *2-2 1/4" High Lift (Cockburns)*

Area of each set of valves per boiler *6.5 sq. ft.* Pressure to which they are adjusted *220* 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 *2'-6"* Is oil fuel carried in the double bottom under boilers *Yes*

Smallest distance between shell of boiler and tank top plating *24"* Is the bottom of the boiler insulated *Yes*

Largest internal dia. of boilers *15'-0 1/16"* Length *11'-6 15/16"* Shell plates: Material *Steel* Tensile strength *99/33*

Thickness *1 15/32"* Are the shell plates welded or flanged *No* Description of riveting: circ. seams *end D.R.L.*

long. seams *T.R.D.B.S.* Diameter of rivet holes in *1 1/2"* Pitch of rivets *4 3/8"*

Percentage of strength of circ. end seams *63.6* Percentage of strength of circ. intermediate seam *46.3*

Percentage of strength of longitudinal joint *85.5* *86.2* *88.3*

Thickness of butt straps *1 1/8"* *1 1/4"* No. and Description of Furnaces in each Boiler *3 Dayton*

Material *Steel* Tensile strength *26/30* Smallest outside diameter *3'-9 3/4"*

Length of plain part *1 1/2"* Thickness of plates *1 1/16"* Description of longitudinal joint *welded*

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

End plates in steam space: Material *Steel* Tensile strength *26/30* Thickness *1 1/32"* Pitch of stays *19 3/4" x 19 5/8"*

How are stays secured *double nuts*

Tube plates: Material *Steel* Tensile strength *26/30* Thickness *15/16"*

Mean pitch of stay tubes in nests *9.4375"* Pitch across wide water spaces *14"*

Girders to combustion chamber tops: Material *Steel* Tensile strength *28/32* Depth and thickness of girder

at centre *2-10 1/2" x 9/16"* Length as per Rule *2'-9 17/32"* Distance apart *94" x 6 1/4"* No. and pitch of stays

in each *3 @ 8"* Combustion chamber plates: Material *Steel*

Tensile strength *26/30* Thickness: Sides *9/16"* Back *1/16"* Top *1/16"* Bottom *7/8"*

Pitch of stays to ditto: Sides *9 1/4" x 8"* Back *8" x 9 1/4"* Top *8" 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 *31/32"*

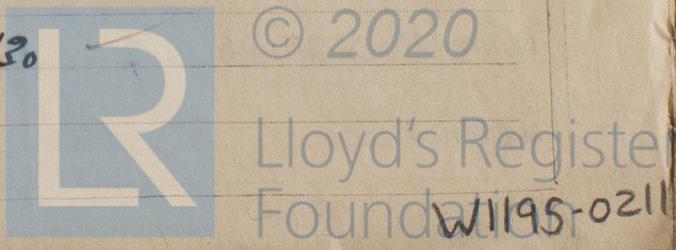
Pitch of stays at wide water space *14"* Are stays fitted with nuts or riveted over *nuts*

Main stays: Material *Steel* Tensile strength *28/32*

Diameter *3 1/2"* No. of threads per inch *6*

crew stays: Material *Steel* Tensile strength *26/30*

Diameter *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. **2 1/4 x 1 7/8"**  
 No. of threads per inch **9**  
 Tubes: Material **Steel** External diameter  Plain **3"** Thickness  **8 NG** No. of threads per inch **9**  
 Stay **3"**  **3 1/16"** Manhole compensation: Size of opening in  
 Pitch of tubes **4 1/4" x 4 8"**  
 shell plate  Section of compensating ring  No. of rivets and diameter of rivet holes   
 Outer row rivet pitch at ends  Depth of flange if manhole flanged **4 1/4"** 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   
 Internal diameter  Thickness of crown  Rivets   
 stays  Inner radius of crown  No. and diameter of  
 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 **Sm rktube** Manufacturers of **Mass Tubes Ltd.**  
**Appleby & Hodgkinson Steel Co.**  
 Number of elements **59 end to end** Material of tubes **Steel** Internal diameter and thickness of tubes **15 1/2" 2 1/2"**  
 Material of headers **Steel** Tensile strength **26/30** Thickness **1 1/8"** Can the superheater be shut off and  
 the boiler be worked separately  **NO** 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  Are the safety valves fitted with easing gear  **Yes**  
 Pressure to which the safety valves are adjusted  Hydraulic test pressure:  
 tubes **1500 LB/1"** forgings and castings **660 LB/1"** and after assembly in place **660 LB.** 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   
 The foregoing is a correct description,  
 For RICHARDSON'S SUPERHEATERS & Co LIMITED Manufacturer.  
**W. E. Dorrance** Director

Dates of Survey  During progress of work in shops - - **1942** Are the approved plans of boiler and superheater forwarded herewith  **Yes**  
 while building  During erection on board vessel - - **May 12, 14, 15, 27, June 1, 2, 4, 5, 10, 11, 15, 17, 19, 26, July 2, 10, 20, 23.** (If not state date of approval.) Total No. of visits **18.**

Is this Boiler a duplicate of a previous case  **Yes** If so, state Vessel's name and Report No. **RW 2419 Report No. 18283.**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
 The boilers have been constructed under Special Survey & in accordance with the approved plans for a working pressure of 220 LB/1".  
 The materials & workmanship have been found good.  
 Upon completion the boilers were hydrostatically tested with an hydraulic pressure of 300 LB/1" & found sound & tight.  
 These boilers have been forwarded to Haverton Hill.  
 The Boilers securely fitted on board & examined under working conditions & found satisfactory.  
 The safety valves adjusted under steam to 220 lbs p.s.i. on completion.

Survey Fee ... .. £ **See Rpt 4** When applied for, 19  
 Travelling Expenses (if any) £ : : When received, 19

Committee's Minute **TUE 18 AUG 1942**  
 Assigned **See Indb J.C. 17307**

**Clive Bell.**  
 Engineer Surveyor to Lloyd's Register of Shipping.  
**L. Norman Stuart**  
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