

## 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 Reg. Book. Survey held at Hartlepool Date, First Survey 8<sup>th</sup> Dec. 1941. Last Survey 12<sup>th</sup> June, 1942

on the

<sup>5</sup>/<sub>8</sub> "Empire Guidon"

(Number of Visits 56)

Tons { Gross Net

Built at Hartlepool 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 514 570 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 sq. ft. Is forced draught fitted Ys Coal or Oil fired Coal

No. and Description of Boilers 3 S.E. Multitubular Working Pressure 220 lb/sq. in.

Tested by hydraulic pressure to 380 lb/sq. in. Date of test 26.5.42 No. of Certificate 3968 Can each boiler be worked separately Ys

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 { per boiler 6.5 sq. in. 6.42 for 142 as fitted 7.95 " " Pressure to which they are adjusted 220 Are they fitted with easing gear Ys

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

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-6" Is oil fuel carried in the double bottom under boilers

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

Largest internal dia. of boilers 15'-0 1/16" Length 11'-6 15/16" Shell plates: Material Steel Tensile strength 29/33

Thickness 1 15/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R.L. inter. 4 3/8" 10 3/8"

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 1/2" Pitch of rivets { 4 3/8" 10 3/8"

Percentage of strength of circ. end seams { plate 63.6 rivets 46.3 Percentage of strength of circ. intermediate seam { plate 85.5 rivets 86.2 combined 88.3

Percentage of strength of longitudinal joint { plate 85.5 rivets 86.2 combined 88.3

Thickness of butt straps { outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler 3 Daylight

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

Length of plain part { top 1 1/2" bottom 1 1/2" Thickness of plates { crown 1 1/16" bottom 1 1/16" Description of longitudinal joint welded

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

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 { front Steel Tensile strength 26/30 Thickness 1 5/16" 26/32"

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 2-16 1/2" x 9/16" Length as per Rule 2'-9 1/2" 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 9/16" Top 9/16" 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 1 5/16" Lower back plate: Material Steel Tensile strength 26/30 Thickness 2 1/4" 27/32"

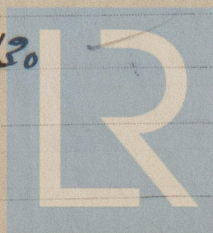
Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over nuts

Main stays: Material Steel Tensile strength 28/32

Diameter { At body of stay, 3 1/2" No. of threads per inch 6

crew stays: Material Steel Tensile strength 26/30

Diameter { At turned off part, 1 3/4" No. of threads per inch 9



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Are the stays drilled at the outer ends ☒ No Margin stays: Diameter { At turned off part. 2 1/4" 1/8" Over threads 2 1/4" 1/8" }  
No. of threads per inch 9  
Tubes: Material Steel External diameter { Plain 3" Stay 3" } Thickness { 8/16" 3/16" } No. of threads per inch 9  
Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in  
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 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 Sm rect tube Manufacturers of Man Tubes Ltd.  
Appleby & Hodgkinson Steel Co.  
Number of elements 59 end tube 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/IN<sup>2</sup> forgings and castings 660 LB/IN<sup>2</sup> 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 West & Co. Limited Manufacturer.  
W. E. Dorey Director

Dates of Survey { During progress of work in shops - - 1942  
while building { During erection on board vessel - - May 12, 14, 15, 27, June 1, 2, 4, 5, 10, Total No. of visits 18.  
11, 15, 17, 19, 26, July 2, 10, 20, 23.

Is this Boiler a duplicate of a previous case ☒ Yes If so, state Vessel's name and Report No. RW 24/19 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/IN<sup>2</sup>.  
The materials & workmanship have been found good.  
Upon completion the boilers were hydrostatically tested with an hydraulic pressure of 300 LB/IN<sup>2</sup> & 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 ... £ Pce. Rpt. 4 When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

Committee's Minute

Assigned

See Indb. J.C. 17307

Clive Bell.

Engineer Surveyor to Lloyd's Register of Shipping.

L. Norman Stuart



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