

Rpt. 5a.

# REPORT ON BOILERS.

 Sd. No. 33623  
 Vol. No. 18354

17 NOV 1942 24 FEB 1943

Date of writing Report 16-11-1942 When handed in at Local Office 16-11-1942 Port of WEST HARTLEPOOL.

No. in Surrey held at WEST HARTLEPOOL.

 Date, First Survey 31<sup>st</sup> July, 1942, Last Survey 5<sup>th</sup> November, 1942

on the "EMPIRE HARRY"

(Number of Visits 18) Gross Tons Net

 Built at GOOLE By whom built GOOLE SHIPBUILDING & REPAIRING CO. LTD. Yard No. 387. When built  
 Engines made at WIGAN By whom made WALKER BROS. Engine No. 43290 When made 1942  
 Boilers made at WEST HARTLEPOOL. By whom made CENTRAL MARINE ENGINE WORKS. Boiler No. R354 When made 1942.  
 Nominal Horse Power Owners Port belonging to

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

Manufacturers of Steel Messrs Solvilles &amp; Co. Glasgow.

(Letter for Record S.)

Total Heating Surface of Boilers 3020 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Oil.

No. and Description of Boilers 1 Single ended Multitubular Working Pressure 215 lbs. sq. in.

Tested by hydraulic pressure to 373 lbs. Date of test 28-10-42 No. of Certificate 3983 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2-2 3/4 COCKBURN'S HIGH LIFT.

Area of each set of valves per boiler { per Rule 8.21 sq. in. as fitted 11.98 sq. in. Pressure to which they are adjusted 215 lbs. sq. in. 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 boilers or uptakes and bunkers or woodwork 24" Is oil fuel carried in the double bottom under boilers No DB

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

Largest internal dia. of boilers 16'-8 15/16" Length 11'-0" Shell plates: Material Steel Tensile strength 30-34 tons

Thickness 1 17/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end DR LAP. inter.

long. seams TR Double butt straps Diameter of rivet holes in { circ. seams 1 17/32" Pitch of rivets { 4 3/8" 10 1/8"

Percentage of strength of circ. end seams { plate 65 rivets 42.1 Percentage of strength of circ. intermediate seam { plate rivets

Percentage of strength of longitudinal joint { plate 84.89. rivets 85.2 combined 86.84.

Thickness of butt straps { outer 1 3/16" inner 1 5/16" No. and Description of Furnaces in each Boiler 3 Corrugated Dighton Section

Material Steel Tensile strength 26-30 tons Smallest outside diameter 4-3 9/16"

Length of plain part { top Thickness of plates { crown 25 1/32" bottom 25 1/32" 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 tons Thickness 1 5/16" Pitch of stays 22 1/2" x 18 3/8"

How are stays secured Double nuts and washers.

Tube plates: Material { front Steel Tensile strength { 26-30 tons Thickness { 1 5/16" 7/8" back Steel

Mean pitch of stay tubes in nests 12 3/4" x 8 1/2" Pitch across wide water spaces 13 3/4"

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons Depth and thickness of girder

at centre 9 1/2" x 1 3/4" 2-7/8" plates Length as per Rule 2'-9 31/32" Distance apart 9 1/2" No. and pitch of stays

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

Tensile strength 26-30 tons Thickness: Sides 23 1/32" Back 23 1/32" Top 23 1/32" Bottom 7/8"

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

Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 1 5/16" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7/8"

Pitch of stays at wide water space 13 3/4" x 8 3/4" Are stays fitted with nuts or riveted over Nuts

Main stays: Material Steel Tensile strength 28-32 tons

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

Screw stays: Material Steel Tensile strength 26-30 tons

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

Are the stays drilled at the outer ends Yes Margin stays: Diameter <sup>At turned off part,</sup> 2"  
 No. of threads per inch 9  
 Tubes: Material LW WRT IRON External diameter <sup>Plain</sup> 3" Thickness <sup>8 SWG</sup> 5/16" 3/8" 1/2" No. of threads per inch 9  
 Pitch of tubes 4 1/4" x 4 1/4" Manhole compensation: Size of opening in  
 shell plate 16" x 12" Section of compensating ring 8 1/2" x 1 7/32" No. of rivets and diameter of rivet holes 32 @ 1 5/8"  
 Outer row rivet pitch at ends 10 1/8" Depth of flange if manhole flanged Yes Steam Dome: Material Yes  
 Tensile strength Thickness of shell Description of longitudinal joint  
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint <sup>Plate</sup>  
 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 None Manufacturers of <sup>Tubes</sup>  
 Number of elements Material of tubes <sup>Steel forgings</sup>  
 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

The foregoing is a correct description,  
 FOR THE CENTRAL MARINE ENGINE WORKS, Manufacturer.

Dates of Survey <sup>During progress of</sup> 1942. July 31. Aug. 10. 11. 14. Sept. 16. 24. 29. <sup>work in shops - -</sup> Oct. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. Nov. 2. 5.  
 while building <sup>During erection on</sup> board vessel - - - Total No. of visits 18  
 (If not state date of approval.)

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under special survey and in accordance with the approved plan for a working pressure of 215 lbs per square inch.

The materials and workmanship have been found good. Upon completion the boiler was tested in the presence of the undersigned by a hydraulic pressure of 373 lbs per square inch, showed no signs of weakness and was found tight and sound in every respect at that pressure. This boiler has been despatched to Sunderland to be fitted on board.

This boiler has been efficiently fitted on board in accordance with the approved plans & the requirements of the specification & the Rules. Safety valves adjusted & accumulation <sup>est</sup> carried out.

Survey Fee £ 19: 14: - When applied for, at 19  
 Travelling Expenses (if any) £ 4: 18: 6 When received, 19

J Grier  
 26/1/43

Arthur W. Oxford.  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 30 APR 1943

Assigned See HUL FE rpt 57965