

REPORT ON BOILERS.

No. 2855

Received at London Office 25 DEC 1941

Date of writing Report 17.12.41 When handed in at Local Office 19 Port of Barrow.

No. in Reg. Book. Survey held at Barrow. Date, First Survey 20.1.41 Last Survey 30.12.42.1941

on the 1/2 EMPIRE BAXTER. (Number of Visits 39.) Gross 7023.65 Net 5056.10

Master Built at Barrow. By whom built Vickers Armstrongs Ltd Yard No. 787 When built 1941

Engines made at Glasgow. By whom made Barclay Curle & Co. Engine No. Ew 133. When made 1941

Boilers made at Barrow. By whom made Vickers Armstrongs Ltd Boiler No. 787 When made 1941

Nominal Horse Power 516 Owners Ministry of War Transport. Port belonging to Barrow.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY. (See also General Report No. 2856.) to Auxiliary Boilers.

Manufacturers of Steel Isbilles. (Letter for Record S.)

Total Heating Surface of Boilers 5830 sq. ft. (See also Report on Auxiliary Boilers) Is forced draught fitted 1/2. Coal or Oil fired

No. and Description of Boilers Two Cylindrical Multitubular, Single ended. Working Pressure 220 lbs

Tested by hydraulic pressure to 380 lbs Date of test 14.10.41 No. of Certificate 474 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler

Area of each set of valves per boiler {per Rule 15.52 for ordinary as fitted 5.93 x 2 Pressure to which they are adjusted 225 lbs 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 1.4 (insulated) Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2.2 Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16.3 Length 12-0 Shell plates: Material Steel Tensile strength 29/33 tons

Thickness 1 1/2 Are the shell plates welded or flanged Ends flanged Description of riveting: circ. seams {end 1 1/2 inter. 4 1/4

Long. seams T.R. Butt Strap Diameter of rivet holes in {circ. seams 1 1/8 long. seams 1 3/8 Pitch of rivets {plate 11 1/8 rivets 11 1/8

Percentage of strength of circ. end seams {plate 61.5 rivets 48.7 Percentage of strength of circ. intermediate seam {plate 55.3 rivets 17.2

Percentage of strength of longitudinal joint {plate 55.3 rivets 17.2 combined 38.1 Working pressure of shell by Rules 226 lbs

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

Material Steel Tensile strength 26/30 tons Smallest outside diameter 3-8 1/4

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

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 223 lbs

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 1/2 Pitch of stays 20-22

How are stays secured Double nuts + washers Working pressure by Rules 234 lbs

End plates: Material {front Steel back Steel Tensile strength 26/30 tons Thickness {1 3/2 13 16

Pitch of stay tubes in nests 12 3/4 x 8 1/2 Pitch across wide water spaces 14 Working pressure {front 244 lbs back 220 lbs

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

centre 10 1/2 x 2 at 3/4 Length as per Rule 2-10 7/16 Distance apart 9 1/2 No. and pitch of stays

each 3 at 8 1/2 Working pressure by Rules 231 lbs Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 3/4 Back 3/4 Top 3/4 Bottom 7/8

Pitch of stays to ditto: Sides 8 1/2 x 9 1/2 Back 8 1/2 x 9 1/2 Top 8 1/2 x 9 1/2 Are stays fitted with nuts or riveted over nuts (pin side)

Working pressure by Rules 244 lbs Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 1 1/2 Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 1

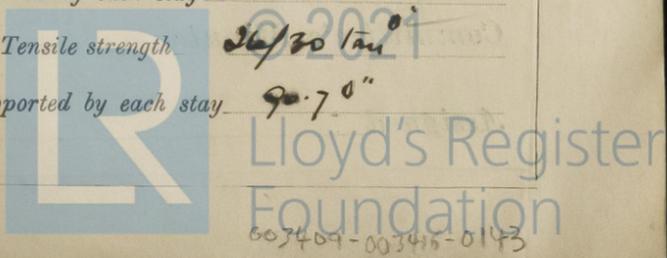
Pitch of stays at wide water space 9 x 14 1/4 Are stays fitted with nuts or riveted over nuts (pin side)

Working Pressure 282 lbs Main stays: Material Steel Tensile strength 28/32 tons

At body of stay, or Over threads 3 1/2 (area 8.48) No. of threads per inch 6 Area supported by each stay 440 sq

Working pressure by Rules As appropd. Screw stays: Material Steel Tensile strength 26/30 tons

At turned off part, or Over threads 1 3/4 (2.03 area) No. of threads per inch 9 Area supported by each stay 90.7 sq



Working pressure by Rules 220 lb Are the stays drilled at the outer ends no Margin stays: Diameter 2" (2.75" max)
 No. of threads per inch 9 Area supported by each stay 80.75 sq in Working pressure by Rules 225 lb
 Tubes: Material lw im External diameter 3" Thickness 5/16 + 3/8 No. of threads per inch 9
 Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 232 lb Manhole compensation: Size of open
 shell plate 16" x 12" Section of compensating ring 2'-9" x 2'-6" No. of rivets and diameter of rivet holes 28 at 1 1/8"
 Outer row rivet pitch at ends 11 1/16" Depth of flange if manhole flanged 3 1/2" 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 _____
 stays _____ Inner radius of crown _____ Working pressure by Rules _____
 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 _____
 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 _____
 Rules _____ Pressure to which the safety valves are adjusted _____ Hydraulic test pressure _____
 tubes _____ forgings and castings _____ and after assembly in place _____ Are drain cocks _____
 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 VICKERS-ARMSTRONGS LIMITED,
Mitchell Manufacturer

Dates of Survey { During progress of work in shops - - - 1941. Jan 20 Feb 4-14-17 March 5-10-11-24 Apr 1-15 May 5-30 June 6 July 2 4 15 17-28 Aug. 7-20-21
 while building { During erection on board vessel - - - 1941. Oct 16 17 20 25-31 Nov. 3-15-17-26-27
 Are the approved plans of boiler and superheater forwarded herewith 10-3 (If not state date of approval.) (Retained for further reference)
 Total No. of visits 39

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "EMPIRE HORN" Ballin N° 2839

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boilers have been constructed in accordance with Rule requirements & approved plans. The materials & workmanship are sound & good. They have been efficiently installed on board & their safety valves adjusted under steam as above.

Survey Fee £u machinery report When applied for, 19
 Travelling Expenses (if any) £ _____ When received, 19

J. McMillan
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRL 9 JAN 1942
 Assigned Geo J. E. Machy Rpl



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