

# REPORT ON BOILERS.

No. 63091

Received at London Office NOV 28 1940

Date of writing Report 19 When handed in at Local Office 25. 11. 1940 Port of GLASGOW

No. in Reg. Book. Survey held at Glasgow Date, First Survey 3rd June 1940 Last Survey 11th Nov. 1940

on the s/s "EMPIRE VOICE" (Number of Visits 13) Tons {Gross 6828 Net 3977

Built at Glasgow By whom built Barclay Curle & Co. Ltd. Yard No. 678 When built 1940

Engines made at -do- By whom made -do- Engine No. 678 When made 1940

Boilers made at -do- By whom made -do- Boiler No. 678 When made 1940

Nominal Horse Power 630 Owners Ministry of Shipping Port belonging to Glasgow

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

Manufacturers of Steel Colvilles Ltd. (Letter for Record S)

Total Heating Surface of Boilers 8344 sq ft Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers 4 Single-ended Working Pressure 250 lb.

Tested by hydraulic pressure to 425 lb. Date of test 26-8-40 No. of Certificate 20631 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 52 sq ft No. and Description of safety valves to each boiler 2 I.H.L. water

Area of each set of valves per boiler {per Rule 4920" as fitted 6280" Pressure to which they are adjusted 250 lb. 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 and bunkers 19" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 22" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 14'-0" Length 11'-6" Shell plates: Material steel Tensile strength 29/33 tons

Thickness 1 17/32" Are the shell plates welded or flanged No Description of riveting: circ. seams {and double inter. -

long. seams D.B.S. T.R. Diameter of rivet holes in {circ. seams 1 9/16" long. seams 1 9/16" Pitch of rivets {4.09" 10 3/4"

Percentage of strength of circ. end seams {plate 61.7 rivets 48.3 Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 85.4 rivets 86 combined 88

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

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

Length of plain part {top - bottom - Thickness of plates {crown 23/32" bottom 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 29/64" Pitch of stays 18 1/2" x 21"

How are stays secured DH

Tube plates: Material {front steel back steel Tensile strength {26/30 tons Thickness {1" 31/32"

Mean pitch of stay tubes in nests 9.95" Pitch across wide water spaces 14"

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

at centre 2 @ 10 3/4" x 7/8" Length as per Rule 38 27/32" Distance apart 6 7/8" x 7 3/4" No. and pitch of stays

in each 3 @ 9 1/2" 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 1/4" x 9 1/2" Back 8 1/4" x 9 1/2" Top 9 1/2" x 7 3/4" Are stays fitted with nuts or riveted over nuts

Front plate at bottom: Material steel Tensile strength 26/30 tons

Thickness 1" Lower back plate: Material steel Tensile strength 26/30 tons Thickness 29/32"

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 tons

Diameter {At body of stay, or Over threads 5 7/8" No. of threads per inch 6

Screw stays: Material steel Tensile strength 26/30 tons

Diameter {At turned off part, or Over threads 1 7/8" No. of threads per inch 9



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Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part.</sup> 2" or <sup>Over threads.</sup> 2"

No. of threads per inch 9

Tubes: Material steel External diameter <sup>Plain</sup> 3" <sup>Stay</sup> 3" Thickness 8WG 3/8", 9/16" + 1/2" No. of threads per inch 9

Pitch of tubes 4 1/8" x 4 1/4" Manhole compensation: Size of opening in shell plate 21" x 17" Section of compensating ring 13" x 1 1/32" No. of rivets and diameter of rivet holes 40 @ 1 9/16"

Outer row rivet pitch at ends 10 3/4" Depth of flange if manhole flanged 4 3/8" Steam Dome: Material none

Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_

Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint <sup>Plate</sup> \_\_\_\_\_ <sup>Rivets</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> \_\_\_\_\_ <sup>Steel forgings</sup> \_\_\_\_\_ <sup>Steel castings</sup> \_\_\_\_\_

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 \_\_\_\_\_

Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure: \_\_\_\_\_

tubes \_\_\_\_\_ forgings and castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_

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 Yes



The foregoing is a correct description,  
 for BARCLAY CURLE & CO., LTD.  
 Alexander Macmillan, Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> 1940 June: 3-10 21-25 July 11-23 30  
 while building <sup>During erection on board vessel - - -</sup> Aug: 6-13 21-26 Sep 5 Nov: 11  
 Are the approved plans of boiler and superheater forwarded herewith Yes  
 (If not state date of approval.)  
 Total No. of visits 13

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "EMPIRE LIGHT" G/LR/M/62783

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. They have been satisfactorily installed in the vessel and the safety valves have been adjusted to the working pressure.

EB  
03/11/40

Survey Fee ... .. £ \_\_\_\_\_ When applied for, \_\_\_\_\_ 19 \_\_\_\_\_  
 Travelling Expenses (if any) £ See Machy. stat. When received, \_\_\_\_\_ 19 \_\_\_\_\_

A. J. Brown  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 26 NOV 1940

Assigned SEE ACCOMPANYING MACHINERY REPORT.

