

## REPORT ON BOILERS.

No. 99300

Received at London Office

MAR 27 1941

Date of writing Report 19 15/3/41 When handed in at Local Office Port of NEWCASTLE-ON-TYNE

No. in Reg. Book 1854 Survey held at Newcastle on Tyne Date, First Survey 23 Feb/1940 Last Survey 4 March 1941

on the M.V. "ECHODALE" (Number of Visits       ) Tons { Gross 8150  
Net 4788

Built at        By whom built Messrs R. & W. Hawthorn, Leslie & Co Ld Yard No. 628 When built 1941-

Engines made at Newcastle By whom made ditto Engine No. 3967 When made 1941-

Boilers made at ditto By whom made ditto Boiler No. 3967 When made 1941-

Nominal Horse Power 2331 Owners        Port belonging to       

of Donk. Blr

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

Manufacturers of Steel Colvilles Ld Furnaces by Horsley Bridge & Thomas Peggott Ld (Letter for Record S.)

Total Heating Surface of Boilers 3500 sq. ft. Is forced draught fitted Yes Coal or Oil fired Oil fired

No. and Description of Boilers One Single Ended Cylindrical "Scotch" Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs Date of test 26/7/40 No. of Certificate 863 Can each boiler be worked separately       

Area of Firegrate in each Boiler        No. and Description of safety valves to each boiler Two - 4" dia Spring loaded

Area of each set of valves per boiler { per Rule 22.44 sq. in.  
as fitted 25.12 " Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No main Boiler

Smallest distance between boilers or uptakes and ~~boilers~~ deck 3' 4 1/2" Is oil fuel carried in the double bottom under boilers No D. Btm. under Blr.

Smallest distance between shell of boiler and ~~deck~~ top plating about 19 1/2" above tank top Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16' 0 3/8" Length 12' 6" mean Shell plates: Material Steel Tensile strength 28 to 32 tons

Thickness 1 5/16" Are the shell plates welded or flanged Neither Description of riveting: circ. seams { end D.R. overlap  
inter. none

long. seams T.R.: D.R. Butt Straps Diameter of rivet holes in { circ. seams 1 3/8"  
long. seams 1 3/8" Pitch of rivets { 3.95"  
9 3/8"

Percentage of strength of circ. end seams { plate 65.2  
rivets 47.1 Percentage of strength of circ. intermediate seam { plate None  
rivets None

Percentage of strength of longitudinal joint { plate 85.3  
rivets 93.  
combined 89.3.

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

Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 48 1/2"

Length of plain part { top 5/8"  
bottom 1" C.C. butt. Thickness of plates { crown 5/8"  
bottom 1" C.C. butt. Description of longitudinal joint fire welded

Dimensions of stiffening rings on furnace or c.c. bottom none

End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 1 1/32" max. mean Pitch of stays 22" x 20 3/4"

How are stays secured Nut inside & outside

Tube plates: Material { front Steel  
back Steel Tensile strength 26 to 30 tons Thickness { 1"  
1 1/16"

Mean pitch of stay tubes in nests 9 7/8" Pitch across wide water spaces 13 3/4" x 7 3/4"

Girders to combustion chamber tops: Material Steel Tensile strength 28 to 32 tons Depth and thickness of girder at centre 10 3/4" x 3/4" x two Length as per Rule 37 1/2" - 64" Distance apart 10 1/2" No. and pitch of stays in each Three @ 8 3/4"

Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons Thickness: Sides 45/64" Back 45/64" Top 45/64" Bottom 1"

Pitch of stays to ditto: Sides 8 3/4" x 7" Back 8 1/4" x 7 1/16" Top 10 1/2" x 8 3/4" Are stays fitted with nuts or riveted over riveted

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

Thickness 1" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 27/32"

Pitch of stays at wide water space 15" x 8 1/4" Are stays fitted with nuts or riveted over fitted with nuts

Main stays: Material Steel Tensile strength 28 to 32 tons

Diameter { At body of stay, 3/4"  
or         
Over threads        No. of threads per inch 6.

Screw stays: Material Steel Tensile strength 26 to 30 tons

Diameter { At turned off part, 1 1/2"  
or         
Over threads        No. of threads per inch 9

Contd over.

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Are the stays drilled at the outer ends No. Margin stays: Diameter <sup>At turned off part</sup> 1 3/4" <sup>Over threads</sup> ✓

No. of threads per inch 9. ✓

Tubes: Material Lap welded W.I. External diameter <sup>Plain</sup> 2 3/4" <sup>Stay</sup> ✓ Thickness <sup>9. L.S.G. ✓</sup> 3/8" & 5/16" No. of threads per inch 9"

Pitch of tubes 4" x 3 7/8" vert. Manhole compensation: Size of opening 36 of 1 7/16 dia

shell plate 21" x 17" ✓ Section of compensating ring 25" x 1 5/16" No. of rivets and diameter of rivet holes 36 of 1 7/16 dia

Outer row rivet pitch at ends 10" Depth of flange if manhole flanged 4 1/2" 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 \_\_\_\_\_ 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 Yes.

R. & W. HAWTHORN, LESLIE & CO. LIMITED  
The foregoing is a correct description,  
R. W. Hawthorn <sup>DIRECTOR</sup> No. 19/9/39

Dates of Survey <sup>During progress of work in shops - -</sup> See Machinery Report. <sup>while building</sup> <sup>During erection on board vessel - -</sup> ✓

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) No. 19/9/39

Total No. of visits \_\_\_\_\_

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. MV. Empire Broom (Ships 62)  
Nav. Rpt 98948

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

This Donkey Boiler has been constructed under Special Survey in accordance with the Society's Rules & the approved plans.  
The Materials and workmanship are good and the Boiler was found satisfactory under hydraulic test.  
The Boiler has been fitted on board and tested under steam under working conditions.

See also Machinery Rpt H.B.

Survey Fee ... .. £ See Machinery Rpt When applied for, \_\_\_\_\_ 19 \_\_\_\_\_

Travelling Expenses (if any) £ \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ When received, \_\_\_\_\_ 19 \_\_\_\_\_

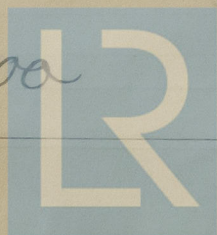
A. A. Batt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_

Assigned \_\_\_\_\_

See Nav. Rpt. 99300



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