

# REPORT ON BOILERS.

Received at London Office 3 AUG 1943

Date of writing Report 19 When handed in at Local Office 19 Port of NEWCASTLE-ON-TYNE.

No. in Survey held at Wallsend. Date, First Survey 24 March 1943 Last Survey 29 June 1943

on the M.V. "EMPIRE ALLIANCE" (Number of Visits ) Gross Tons Net

Built at Sunderland. By whom built Sir J. Laing & Sons Ltd Yard No. 747 When built 1943  
Engines made at Glasgow By whom made Harland & Wolff Ltd Engine No. 2459/3 When made 1943  
Boilers made at Wallsend. By whom made N.E. Marine Eng Co (1939) Ltd Boiler No. 3034 When made 1943  
Nominal Horse Power Owners Ministry of War Transport Port belonging to Sunderland

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

Manufacturers of Steel Steel Co of Scotland Ltd (Letter for Record S)

Total Heating Surface of Boilers 4120 ft<sup>2</sup> Is forced draught fitted yes Coal or Oil fired oil

No. and Description of Boilers 2 D.B. Working Pressure 180

Tested by hydraulic pressure to 320 Date of test 30.8.43 No. of Certificate 1039 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 13.2 No. and Description of safety valves to each boiler 1 Double

Area of each set of valves per boiler (per Rule 13.2 as fitted 14.74) Pressure to which they are adjusted 185 Are they fitted with easing gear yes

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

Smallest distance between boilers or uptakes and bunkers or woodwork Is oil fuel carried in the double bottom under boilers

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

Largest internal dia. of boilers 12.9 15/16" Length 11-6 Shell plates: Material S Tensile strength 29-33

Thickness 1 1/2" Are the shell plates welded or flanged no Description of riveting: circ. seams (end DR inter. 3/4)

long. seams T.R. D.B.S. Diameter of rivet holes in (circ. seams 1 1/8" long. seams 1 1/8") Pitch of rivets ( 7 13/16")

Percentage of strength of circ. end seams (plate 65.3 rivets 42.7) Percentage of strength of circ. intermediate seam (plate 85.6 rivets 91.6)

Percentage of strength of longitudinal joint (plate 89.5 rivets 91.6)

Thickness of butt straps (outer 13/16" inner 15/16") No. and Description of Furnaces in each Boiler 3 c.f.

Material S Tensile strength 26-30 Smallest outside diameter 2'-8 1/8"

Length of plain part (top 7/16" bottom 7/16") Thickness of plates (crown 7/16" bottom 7/16") Description of longitudinal joint weld

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

End plates in steam space: Material S Tensile strength 26-30 Thickness 1 1/4" Pitch of stays 18x19"

How are stays secured Double nuts

Tube plates: Material (front S back S) Tensile strength 26-30 Thickness ( 29/32" 25/32")

Mean pitch of stay tubes in nests 10 1/4" Pitch across wide water spaces 14 1/2" x 8"

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

at centre 7 1/2" x 25/32 D.B.S. Length as per Rule 2'-6" Distance apart 9" No. and pitch of stays

in each 2 @ 9" Combustion chamber plates: Material S

Tensile strength 26-30 Thickness: Sides 21/32" Back 23/32" Top 21/32" Bottom 21/32"

Pitch of stays to ditto: Sides 9x9" Back 10x10" Top 9x9" Are stays fitted with nuts or riveted over nuts

Front plate at bottom: Material S Tensile strength 26-30

Thickness 29/32" Lower back plate: Material S Tensile strength 26-30 Thickness 7/8"

Pitch of stays at wide water space 14 1/2" x 10" Are stays fitted with nuts or riveted over nuts

Main stays: Material S Tensile strength 28-32

Diameter (At body of stay, or Over threads) 3" No. of threads per inch 6"

Screw stays: Material S Tensile strength 26-30

Diameter (At turned off part, or Over threads) 1 5/8" & 1 3/4" No. of threads per inch 9"



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

No. of threads per inch 9

Tubes: Material SD Steel External diameter { Plain 2 3/4" Stay 2 3/4" Thickness { 9/16" 5/16" No. of threads per inch 9

Pitch of tubes 4"x4" Manhole compensation: Size of opening in shell plate none Section of compensating ring \_\_\_\_\_ No. of rivets and diameter of rivet holes \_\_\_\_\_

Outer row rivet pitch at ends \_\_\_\_\_ Depth of flange if manhole flanged \_\_\_\_\_ 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 { 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 none

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 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 yes

THE NORTH EASTERN MARINE ENGINEERING CO. (1933) LTD  
The foregoing is a correct description,

John Neill Manufacturer.  
DIRECTOR

Dates of Survey { During progress of work in shops - - March 1903 Are the approved plans of boiler and superheater forwarded herewith 31/3/02 (If not state date of approval.)  
while building { During erection on board vessel - - - See Machinery Report on fitting out Total No. of visits \_\_\_\_\_

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These donkey boilers have been constructed under Special Survey in accordance with the approved Plan, the requirements of the Rules & the Specification. The materials & workmanship are good & the boilers proved sound & tight under hydraulic test & satisfactory under steam.

Survey Fee ... .. £ 24.5.0 When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

R. Moffitt  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 13 AUG 1903

Assigned

see minute on Sld. H. Rpt 33738



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