

# REPORT ON BOILERS.

12 JUN 1942

Received at London Office

Date of writing Report 19 When handed in at Local Office 10<sup>th</sup> June 1942 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. 36449 on the S.S. "EMPIRE. COLERIDGE" Survey held at Wallsend on Tyne Date, First Survey 24.9.41 Last Survey 28.5.1942

(Number of Visits 64) Tons { Gross 9813 Net 5731

Master Built at Sunderland By whom built Sir J. Laing & Donald's Card No. 741 When built 1942.

Engines made at Wallsend By whom made N.E. Marine Eng Co (1938) Ltd. Engine No. 3021 When made 1942

Boilers made at " By whom made - Boiler No. 3021 When made 1942.

Nominal Horse Power 674 Owners Ministry of War Transport Port belonging to Sunderland

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

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

Total Heating Surface of Boilers 10020. Is forced draught fitted yes Coal or Oil fired oil

No. and Description of Boilers 3 SB 273 20.2.42 Working Pressure 220

Tested by hydraulic pressure to 380. Date of test 27.2.42 No. of Certificate 949 Can each boiler be worked separately yes

Area of Firegrate in each Boiler Area of each set of valves per boiler { per Rule 8.88 as fitted 9.80- No. and Description of safety valves to each boiler 1 Double improved high lift Pressure to which they are adjusted 225 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 Is oil fuel carried in the double bottom under boilers yes

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

Largest internal dia. of boilers 16'-2 3/32" Length 12'-6" Shell plates: Material S. Tensile strength 30-34

Thickness 1 33/64" Are the shell plates welded or flanged no Description of riveting: circ. seams { end T.R. inter. Pitch of rivets { 4 3/8" 10 1/4"

long. seams T.R. D B S. Diameter of rivet holes in { circ. seams 1 9/16" long. seams Pitch of rivets { 4 3/8" 10 1/4"

Percentage of strength of circ. end seams { plate 62.1 rivets 47 Percentage of strength of circ. intermediate seam { plate rivets Working pressure of shell by Rules

Percentage of strength of longitudinal joint { plate 84.75 rivets 88.7 combined 87.4 Working pressure of shell by Rules

Thickness of butt straps { outer 1 9/32" inner 1 9/32" No. and Description of Furnaces in each Boiler 3 cf.

Material S Tensile strength 26-30 Smallest outside diameter 47 23/32"

Length of plain part { top bottom Thickness of plates { crown 4 7/64" bottom Description of longitudinal joint weld.

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

End plates in steam space: Material S Tensile strength 26-30 Thickness 1 13/32" Pitch of stays 20 1/4" x 18 1/2"

How are stays secured Double nuts Working pressure by Rules

Tube plates: Material { front back S. Tensile strength { 26-30 Thickness { 5/16" 7/8"

Mean pitch of stay tubes in nests 8-7" Pitch across wide water spaces 14 1/2" x 7 1/4" Working pressure { front back

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

at centre 11 3/4" x 1" dble. Length as per Rule 46 1/2" Distance apart 8 1/2" wing 9" G. No. and pitch of stays

in each 3 @ 11 1/8" Working pressure by Rules Combustion chamber plates: Material S

Tensile strength 26-30 Thickness: Sides 13/16" Back 23/32" Top 13/16" Bottom 29/32"

Pitch of stays to ditto: Sides 11 1/8" x 8 1/2" Back 9 3/4" x 8" Top 11 1/8" x 9" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules Front plate at bottom: Material S. Tensile strength 26-30

Thickness 5/16" Lower back plate: Material S Tensile strength 26-30 Thickness 5/16"

Pitch of stays at wide water space 15 3/8" x 8" Are stays fitted with nuts or riveted over nuts

Working Pressure Main stays: Material S Tensile strength 28-32

Diameter { At body of stay, or Over threads 3 1/4" & 3 1/2" No. of threads per inch 6 Area supported by each stay

Working pressure by Rules Screw stays: Material S Tensile strength 26-30 2020

Diameter { At turned off part, or Over threads 1 3/4" & 2" No. of threads per inch 9 Area supported by each stay



Working pressure by Rules  Are the stays drilled at the outer ends  Margin stays: Diameter  At turned off part,  Over threads 28" x 2"

No. of threads per inch 9 Area supported by each stay  Working pressure by Rules

Tubes: Material S.D. Steel External diameter  Plain 2 1/2"  Stay 2 1/2" Thickness  8 L S G.  3/8" x 3/16" No. of threads per inch 9

Pitch of tubes 4" x 3 7/8" Working pressure by Rules  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

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 of 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 N.E. Marine Combustion Chamber Manufacturers of  Tubes Stewart & Lloyds  Steel forgings Stewart & Lloyds  Steel castings

Number of elements 36 Material of tubes S.D. Steel Internal diameter and thickness of tubes 2.173 x 7 W.G.

Material of headers S.D. Steel Tensile strength 26-28 Thickness 1" Can the superheater be shut off and the boiler be worked separately  NO. Is a safety valve fitted to every part of the superheater  yes which can be shut off from the boiler

Area of each safety valve 3.14 Are the safety valves fitted with casing gear  yes Working pressure as per Rules 220 lbs. Pressure to which the safety valves are adjusted 225 lbs. Hydraulic test pressure tubes 1500 lbs. Headers forgings and castings 660 lbs. and after assembly in place 440 lbs. Are drain cocks or valves fitted to free the superheater from water where necessary  yes.

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with  yes.

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.  
The foregoing is a correct description,  
John Nell Manufacturer  
DIRECTOR

Dates of Survey  During progress of work in shops - - See Machinery Report Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building  During erection on board vessel - - - Report Total No. of visits

Is this Boiler a duplicate of a previous case  yes If so, state Vessel's name and Report No. Empire Charwell 100316 <sup>Howe</sup>

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been made & installed 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 ... £ See Machinery Report When applied for, 19

Travelling Expenses (if any) £ See Machinery Report When received, 19

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

Committee's Minute TUE 16 JUN 1942

Assigned See Std. 20. 33406

