

REPORT ON BOILERS.

No. 21561.

Received at London Office 30 SEP 1941

Date of writing Report 13th SEPT. 1941. When handed in at Local Office 13th SEPT. 1941. Port of Greenock

No. in Reg. Book. Survey held at Greenock Date, First Survey 24th APRIL 1941. Last Survey 22nd AUG. 1941.

on the "Empire Baster" (Number of Visits) Tons { Gross Net

Master Built at Barrow By whom built Vickers Armstrong Ltd Yard No. 7/7/134 When built

Engines made at By whom made Engine No. When made

Boilers made at Greenock By whom made John G. Kincaid & Co. L^{td} Boiler No. 249 When made 1941

Nominal Horse Power Owners Port belonging to

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles L^{td} (Letter for Record S)

Total Heating Surface of Boilers 1786 Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers One Cylindrical Multitubular Working Pressure 220 lbs/sq in

Tested by hydraulic pressure to 380 lbs Date of test 21-6-41 No. of Certificate 2244 Can each boiler be worked separately

Area of Firegrate in each Boiler 45 sq ft No. and Description of safety valves to each boiler One 2.0" Double opening 14 L.

Area of each set of valves per boiler { per Rule 4.75 sq in as fitted 6.28 sq in Pressure to which they are adjusted Are they fitted with casing 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

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

Largest internal dia. of boilers 12'-9 1/2" Length 11'-6" Shell plates: Material S Tensile strength 29/33

Thickness 1/4" Are the shell plates welded or flanged No Description of riveting: circ. seams { end DR inter. -

long. seams TR. D.S. Diameter of rivet holes in { circ. seams 1 5/16" long. seams 1 5/16" Pitch of rivets { 3.79" 9.125"

Percentage of strength of circ. end seams { plate 65.3% rivets 45.2% Percentage of strength of circ. intermediate seam { plate 85.6% rivets 87.8%

Percentage of strength of longitudinal joint { plate 85.6% rivets 87.8% combined 89 Working pressure of shell by Rules 223 lb

Thickness of butt straps { outer 1" inner 1.125" No. and Description of Furnaces in each Boiler 3 Deighton

Material S Tensile strength 24/30 tons Smallest outside diameter 37.25"

Length of plain part { top 19 1/32" bottom 19 1/32" Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 232 lb

End plates in steam space: Material S Tensile strength 24/30 tons Thickness 1 7/32" Pitch of stays 19 x 16"

How are stays secured DN Working pressure by Rules 224 lb

Tube plates: Material { front S back S Tensile strength { 24/30 tons Thickness { 1 5/16" 2 5/32"

Mean pitch of stay tubes in nests 9.75" 10 1/4" Pitch across wide water spaces 14" Working pressure { front 229 lb back 230 lb

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

at centre 8 1/2" x 1 1/4" Length as per Rule 2.7 1/32" Distance apart 7" No. and pitch of stays

in each 2 @ 10" Working pressure by Rules 225 lb Combustion chamber plates: Material S

Tensile strength 24/30 tons Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 3/4"

Pitch of stays to ditto: Sides 10 x 7" Back 5 x 9 1/4" Top 7 x 10" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 221 lb Front plate at bottom: Material S Tensile strength 24/30 tons

Thickness 1 5/16" Lower back plate: Material S Tensile strength 24/30 tons Thickness 2 7/32"

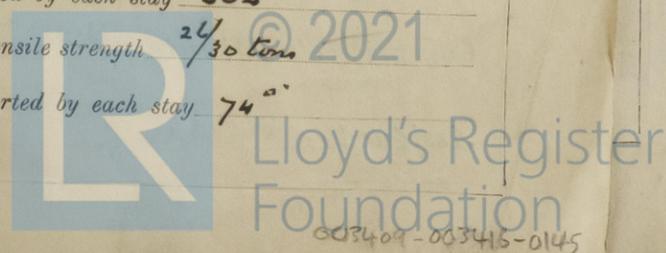
Pitch of stays at wide water space 14" x 8" Are stays fitted with nuts or riveted over Nuts

Working Pressure 223 lb Main stays: Material S Tensile strength 29/32 tons

Diameter { At body of stay, 2 7/8" No. of threads per inch 6 Area supported by each stay 304 sq in

Working pressure by Rules 236 lb Screw stays: Material S Tensile strength 24/30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 74 sq in



Working pressure by Rules 245 1/2 Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part,} 1 7/8 or ^{Over threads} 1 7/8

No. of threads per inch 9 Area supported by each stay 93" Working pressure by Rules 229 1/2

Tubes: Material SAE External diameter ^{Plain} 3" ^{Stay} 3" Thickness 3/8" 5/16" No. of threads per inch 9

Pitch of tubes 4 1/4" = 4 7/8" Working pressure by Rules 237 1/2 Manhole compensation: Size of opening in shell plate 20 1/2" = 16 1/2" Section of compensating ring 2'-11" x 3'-4" x 1 1/4" No. of rivets and diameter of rivet holes 40 - 1 5/16"

Outer row rivet pitch at ends 9-12 1/2" 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 _____ 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 casing gear _____ Working pressure as per Rules _____

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 _____

The foregoing is a correct description,
 For JOHN G. KINCAID & CO. LIMITED.
W. C. Kincaid Director, Manufacturer.

Dates of Survey ^{During progress of work in shops - - -} (1941) APRIL 24, MAY 2, 16, JUN 26, 9, 16, 21, 30
^{while building} ^{During erection on board vessel - - -} JULY 16, AUG. 22
 Are the approved plans of boiler and superheater forwarded herewith No. 73-4196
 (If not state date of approval.)
 Total No. of visits 11

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.)
This boiler has been built under special survey in accordance with the Rules and approved plans. The materials & workmanship are sound & good. The boiler has now been shipped to Barran for fitting on board a vessel building by Messrs. Vickers-Armstrong & Co. Ld.

Survey Fee £ 11 : 18 } When applied for, 3rd SEPT. 1941
 Travelling Expenses (if any) £ : } When received, 10

Charles Y. Hunter
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 16 SEP 1941**

Assigned *Signed*

See Bm file made by W. J. ...

FRL 9 JAN 1942

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