

REPORT ON BOILERS.

No. 11909
LONDON RPT 88044

Received at London Office

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Date of writing Report 102 When handed in at Local Office 23.4.24 1924 Port of Huddersburgh

No. in Survey held at Stockton-on-Tees Date, First Survey 18th February Last Survey 16th April 1924

on the Steel Tug, "Carnrock" (Number of Visits 17) Tons { Gross Net

Master - Built at Leppikurk (Holland) By whom built T. Van Duyndijck, Schepman and No. - When built 1924

Engines made at St. Yarmouth By whom made Thos Crabb & Co Ltd Engine No. 581 When made 1924

Boilers made at Stockton By whom made Thos Blair & Co Ltd Boiler No. A50 When made 1924

Nominal Horse Power - Owners Messrs Harrison (London) Ltd. Port belonging to London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel D. Bellville & Sons (Plates) & John Spence & Sons (Bars) (Letter for Record (5))

Total Heating Surface of Boilers 1393 sq ft Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers One single ended Working Pressure 140

Tested by hydraulic pressure to 260 Date of test 16.4.24 No. of Certificate 6356 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 37 sq ft No. and Description of safety valves to each boiler 2. Spring loaded

Area of each set of valves per boiler { per Rule 11.27 as fitted 11.27 Pressure to which they are adjusted 145 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 or uptakes and bunkers or woodwork 18" 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'-4 3/8" Length 10'-5" Shell plates: Material Steel Tensile strength 28-32

Thickness 13/16" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D. Riv. Lap inter. ✓

long. seams D. Butt - 3 Riveted Diameter of rivet holes in { circ. seams 1 1/2" long. seams 7/8" Pitch of rivets { 3 1/2" 6 1/2"

Percentage of strength of circ. end seams { plate 70.7 rivets 50.0 Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓

Percentage of strength of longitudinal joint { plate 88.07 rivets 87.7 combined 90.5 Working pressure of shell by Rules 144 lb

Thickness of butt straps { outer 13 5/8" + 3/8" inner 13 5/8" + 3/4" No. and Description of Furnaces in each Boiler Two plain ✓

Material Steel Tensile strength 26-30 Smallest outside diameter 41.81"

Length of plain part { top 73 3/4" bottom lowlay Thickness of plates { crown 21/32" bottom 3/32" Description of longitudinal joint Weld ✓

Dimensions of stiffening rings on furnace or c.g. bottom none Working pressure of furnace by Rules 143 lb

End plates in steam space: Material Steel Tensile strength 26-30 Thickness 15/16" Pitch of stays 20" x 16 1/2"

How are stays secured nuts & 9/16" dia x 3/4" long washers Working pressure by Rules 140 lb

Tube plates: Material { front Steel back Steel Tensile strength { 26-30 26-30 Thickness { 15/16" 3/4"

Mean pitch of stay tubes in nests 10.59" Pitch across wide water spaces 14 1/4" x 9 1/4" Working pressure { front 152 lb back 179 "

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder at centre 7" x 1 1/4" Length as per Rule 26 1/2" Distance apart 10 1/4" No. and pitch of stays in each 2 @ 9 1/4" Working pressure by Rules 164 lb Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 9 1/4" x 9 1/2" Back 9" x 9 1/8" Top 10 1/4" x 9 1/4" Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 146 lb Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 15/16" Lower back plate: Material Steel Tensile strength 26-30 Thickness 1"

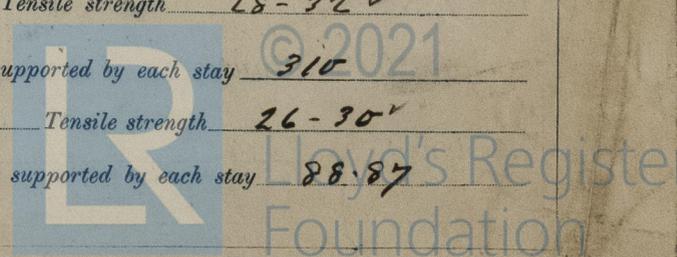
Pitch of stays at wide water space 14" x 9 1/2" Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 281 lb Main stays: Material Steel Tensile strength 28-32

Diameter { At body of stay, 2 5/8" or 2 5/8" No. of threads per inch 6 Area supported by each stay 310

Working pressure by Rules 148 lb Screw stays: Material Steel Tensile strength 26-30

Diameter { At turned off part, 1 3/8" or 1 3/8" No. of threads per inch 8 Area supported by each stay 88.87



Working pressure by Rules 171 lb Are the stays drilled at the outer ends no ✓ Margin stays: Diameter ^{At turned off part} 1 3/4" or ^{Over threads} 1 3/4" ✓
 No. of threads per inch 8 ✓ Area supported by each stay 113.5 Working pressure by Rules 159
 Tubes: Material Iron ✓ External diameter ^{Plain} 3 1/4" ✓ ^{Stay} 3 1/4" ✓ Thickness 3/16 - 1/4" ✓ No. of threads per inch 9 ✓
 Pitch of tubes 4 1/2" x 4 5/8" ✓ Working pressure by Rules 180 + 201 Manhole compensation: Size of opening in shell plate 16" x 12" ✓ Section of compensating ring 7 1/2" x 1 3/8" ✓ No. of rivets and diameter of rivet holes 28 @ 1 1/2" ✓
 Outer row rivet pitch at ends 6 1/2" ✓ 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 _____ Working pressure by Rules _____ Thickness of crown _____ No. and diameter of stays _____
 How connected to shell _____ Inner radius of crown _____ Working pressure by Rules _____
 of rivets in outer row in dome connection to shell _____ Size of doubling plate under dome _____ Diameter of rivet holes and pitch _____

Type of Superheater _____ Manufacturers of ^{Tubes} _____ ^{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 _____
 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 _____, 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 23 inclusive for boilers been complied with _____

The foregoing is a correct description.
BLAIR & CO., LIMITED. N. P. Hamilton Manufacturer.

Dates of Survey ^{During progress of} 1924, Feb. 10, 22, 26, Mar. 3, 4, 7, 10, 14, 17. Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)
^{while building} ^{During erection on} ^{board vessel} _____ Total No. of visits 17

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This boiler has been built under special survey: is of good material & workmanship and on completion was tested by hydraulic pressure with satisfactory results
This boiler has been satisfactorily fitted in the vessel examined under steam & the safety valves adjusted to 145 lbs.

Survey Fee £ 9-6-0 When applied for, MONTHLY A/c. 192
 Travelling Expenses (if any) £ ✓ : : When received, 192

W. Morrison A.R. Edmund
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 29 AUG 1924 FRI 12 SEP 1924

Assigned _____

