

Rpt. 5a.

REPORT ON BOILERS.

No. 43174

Received at London Office

WED NOV 20 1923

Date of writing Report 22nd Nov 1923 When handed in at Local Office 24 11 1923 Port of Glasgow

No. in Reg. Book Survey held at Glasgow Date, First Survey 20th April Last Survey 21st Nov 1923

on the Boiler for Aitchison Blair's No 144 (Number of Visits 14) Gross 681 Tons Net 587

Master _____ Built at _____ By whom built _____ Yard No. _____ When built _____

Engines made at _____ By whom made _____ Engine No. _____ When made _____

Boilers made at Glasgow By whom made Dunsmuir & Jackson Boiler No. B149 When made 1923

Nominal Horse Power _____ Owners _____ Port belonging to _____

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 2018 sq. ft. Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers One - Multitubular Working Pressure 180

Tested by hydraulic pressure to 320 Date of test 21.11.23 No. of Certificate 16370 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 60.5 sq. ft. No. and Description of safety valves to each boiler 2 Spring loaded

Area of each set of valves per boiler per Rule as fitted 14 sq. in. 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 _____

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 15'-0" Length 10'-6" Shell plates: Material S. Tensile strength 28-32

Thickness 1 7/32" Are the shell plates welded or flanged no Description of riveting: circ. seams end J.R. long. seams T.R. J.B.S. Diameter of rivet holes in circ. seams 1 5/16" long. seams 1 1/4" Pitch of rivets 4.01" 8 15/16"

Percentage of strength of circ. end seams plate 67.2 rivets 46.4 Percentage of strength of circ. intermediate seam plate 86 rivets 86.7

Percentage of strength of longitudinal joint plate 86 rivets 86.7 combined 88.0 Working pressure of shell by Rules 180

Thickness of butt straps outer 1 1/16" inner 1 1/16" No. and Description of Furnaces in each Boiler 3 - Dighton

Material S. Tensile strength 26-30 Smallest outside diameter 3'-9 1/8"

Length of plain part top bottom Thickness of plates crowns 9/16" bottom 9/16" Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom _____ Working pressure of furnace by Rules 180

End plates in steam space: Material S. Tensile strength 26-30 Thickness 1 3/16" Pitch of stays 19" x 19"

How are stays secured J.N. Working pressure by Rules 182

Tube plates: Material front S. back S. Tensile strength 26-30 26-30 Thickness 1 1/32" 13/16"

Mean pitch of stay tubes in nests 13 7/8" x 8 7/8" Pitch across wide water spaces 14 1/4" Working pressure front 184 back 183

Girders to combustion chamber tops: Material Iron Tensile strength _____ Depth and thickness of girder at centre 8" x 1 3/4" Length as per Rule 31 1/2" Distance apart 9" No. and pitch of stays in each 2 - 10 1/8" Working pressure by Rules 158 Combustion chamber plates: Material S. Tensile strength 26-30 Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 13/16"

Pitch of stays to ditto: Sides 10 1/8" x 9 7/8" Back 9 7/8" x 9 5/8" Top 10 1/8" x 9" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 181 Front plate at bottom: Material S. Tensile strength 26-30 Thickness 1 1/32" Lower back plate: Material S. Tensile strength 26-30 Thickness 7/8"

Pitch of stays at wide water space 14 3/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 181 Main stays: Material S. Tensile strength 26-30

Diameter At body of stay, 2 3/4" Over threads No. of threads per inch 6 Area supported by each stay 362 sq. in.

Working pressure by Rules _____ Screw [stays: Material S. Tensile strength 26-30

Diameter At turned off part, 1 3/4" Over threads No. of threads per inch 9 Area supported by each stay 10 7/8" x 9 7/8"

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Working pressure by Rules 181 Are the stays drilled at the outer ends *no* ✓ Margin stays: Diameter { At turned off part, 2 1/8" x 1 7/8" or Over threads }
No. of threads per inch 9 Area supported by each stay 11 7/8 x 9 7/8 Working pressure by Rules 181
Tubes: Material *Iron* ✓ External diameter { Plain 3 1/4" ✓ Stay 3 1/4" ✓ Thickness { 8 L.S.G. 3/8" - 7/16" - 5/16" No. of threads per inch 9 ✓
Pitch of tubes 4 5/8" x 4 7/16" ✓ Working pressure by Rules 194 Manhole compensation: Size of opening in
shell plate 20 1/4" x 16 1/4" ✓ Section of compensating ring 36 1/4" x 31 1/4" No. of rivets and diameter of rivet holes 36 - 1 1/32"
Outer row rivet pitch at ends 9 5/8" Depth of flange if manhole flanged 3 1/4" 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 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 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

DUNSMUIR & JACKSON, Limited.
(IN LIQUIDATION)

The foregoing is a correct description,

Jas. P. Adams Manufacturer.

Dates of Survey { During progress of work in shops - - 1923 Apr 20 Jun 5-14-21 Jul 2-9 Aug 15
while building { During erection on board vessel - - - Sep 18 Oct 1-15-31 Nov 4-16-21 } Are the approved plans of boiler and superheater forwarded herewith *Yes* ✓
(If not state date of approval.)
Total No. of visits 14

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under special survey in accordance with the approved plan, and the Society's Rules, the materials and workmanship are good.*

*The boiler is to be fitted on board in Glasgow.
This boiler has been satisfactorily fitted on board and tried under steam. See Glasgow report 43597*

Annual Survey Request.

Survey Fee ... £ 13 : 10 : - When applied for, 26. 11. 1923
Travelling Expenses (if any) £ : : When received, 1. 12. 1923 *rec*

A. Campbell
Jas. Cairns
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 27 NOV 1923

Assigned TRANSMIT TO LONDON

GLASGOW 24 JUN 1924
See Gls. Rpt. No. 43597
Lloyd's Register Foundation
CERTIFICATE WRITTEN 25-6-24