

REPORT ON BOILERS.

No. 44194

21 JAN 1925

Received at London Office 10 DEC 1924

Date of writing Report

192

When handed in at Local Office

8-12-

192

Port of

Glasgow

No. in
Reg. Book.

Survey held at

Glasgow

Date, First Survey

23rd Sept.

Last Survey

20-11-

1924

(Number of Visits

6

Gross

398

Net

270

on the

S.S. "Downshire"

Master

Built at

Bowling

By whom built

Scott & Sons

Yard No.

297

When built

1925

Engines made at

Glasgow

By whom made

Aitchison Blair Ltd

Engine No.

150

When made

1924

Boilers made at

Glasgow

By whom made

W. Rowan & Co Ltd

Boiler No.

331

When made

1924

Nominal Horse Power

80

Owners

East Downshire S.B. Co

Port belonging to

Beefact

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Gutehoffnungshütte A.G. of Oberhausen. The Steel Company of Scotland (Furnace plate). The Lanarkshire Steel Co (stap) (Letter for Record S)

Total Heating Surface of Boilers 1502 sq ft Is forced draught fitted no Coal or Oil fired Coal Working Pressure 180

No. and Description of Boilers One single ended marine

Tested by hydraulic pressure to 320 Date of test 20-11-24 No. of Certificate 16662 Can each boiler be worked separately

Area of Firegrate in each Boiler 48 sq ft No. and Description of safety valves to each boiler 2 Spring

Area of each set of valves per boiler {per Rule 4.9 sq ft Pressure to which they are adjusted 185 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 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 13'-0" Length 10'-6" Shell plates: Material steel Tensile strength 28-32 tons

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

long. seams WBS. TR Diameter of rivet holes in {circ. seams 1 1/8" Pitch of rivets {3-01" 8 1/2"

Percentage of strength of circ. end seams {plate 64.7 rivets 45 Percentage of strength of circ. intermediate seam {plate - rivets -

Percentage of strength of longitudinal joint {plate 86 rivets 87.8 combined 84.5 Working pressure of shell by Rules 182

Thickness of butt straps {outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler 3 cf. Three Deighton

Material steel Tensile strength 26-30 tons Smallest outside diameter 35.9"

Length of plain part {top - bottom - Thickness of plates {crown 2 1/4" bottom 64 Description of longitudinal joint welded

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

End plates in steam space: Material steel Tensile strength 26-30 Thickness 1 3/32 Pitch of stays 17 1/2" x 17 1/2"

How are stays secured W.N. Working pressure by Rules 181

Tube plates: Material {front steel back steel Tensile strength {26-30 26-30 Thickness {2 1/2" 2 1/2" 182

Mean pitch of stay tubes in nests 10" Pitch across wide water spaces 15 1/8" Working pressure {front 182 back 208

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 2 @ 8 x 7/8 Length as per Rule 30-56 Distance apart 11 1/8 No. and pitch of stays

in each 3 @ 7 1/4 Working pressure by Rules 182 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 1 1/8 Back 5/8 W 3/32 Top 1 1/8 Bottom 1 1/8

Pitch of stays to ditto: Sides 10 x 9 Back 9 1/2 x 8 3/4 Top 7 1/4 x 11 1/8 Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 180 Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 2 1/2 Lower back plate: Material steel Tensile strength 26-30 Thickness 5 1/4

Pitch of stays at wide water space 14 3/8 Are stays fitted with nuts or riveted over nuts

Working Pressure 183 Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, 2 1/2 No. of threads per inch 6 Area supported by each stay 280 sq in

Working pressure by Rules 191 Screw stays: Material steel Tensile strength 26-30 tons

Diameter {At turned off part, 1 5/8 No. of threads per inch 10 Area supported by each stay 83 sq in



Lloyd's Register Foundation

Working pressure by Rules 183 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads }
 No. of threads per inch 10 Area supported by each stay 92.20" Working pressure by Rules 232
 Tubes; Material iron External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { 9 w.g. 1 1/4 & 5/16" No. of threads per inch 9
 Pitch of tubes 4 5/8 x 4 1/2" & 4 3/8 x 4 1/2" Working pressure by Rules 188 Manhole compensation: Size of opening in shell plate 19 1/2" x 15 1/2" Section of compensating ring 8 1/2" x 1 5/8" flanged No. of rivets and diameter of rivet holes 34 @ 1 3/8"
 Outer row rivet pitch at ends 8 1/8" Depth of flange if manhole flanged 1 5/8" 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 _____
 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 _____

The foregoing is a correct description,
 For David Rowan & Co. Ltd. Manufacturer.
 Arch. H. Emerson

Dates of Survey { During progress of work in shops - - } 1924 Sep 23 Oct 9 21 Nov 4 12 30 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes
 { During erection on board vessel - - } _____
 Total No. of visits 6

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The materials and workmanship are good.
The boiler has been constructed under special survey and in accordance with the Rules.

Annual Survey Request

This boiler has securely fitted on board & tried under steam see S's report N°

Jas Cairns

Survey Fee £ 10 : : } When applied for, 8/12/24 192 4
 Travelling Expenses (if any) £ : : } When received, 17/12/24 192 4

L. C. Davis
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 9-DEC-1924

Assigned TRANSMIT TO LONDON See accompanying machinery report