

# REPORT ON BOILERS.

No. 12167

29 NOV 1924

Received at London Office

Date of writing Report 192 When handed in at Local Office 27/11/24 192 Port of Huddersburgh

No. in Survey held at Stockton-on-Tees Date, First Survey while building Last Survey 192

on the Steel screw steamer "DRAKEPOOL" (Number of Visits     ) Tons { Gross      Net     

Master      Built at Stockton By whom built Ropner S. B. & Co Ltd Yard No. 546 When built 1924

Engines made at Stockton By whom made Thos Blair & Co Ltd Engine No. 1957 When made 1924

Boilers made at Stockton By whom made Thos Blair & Co Ltd Boiler No. 1957 When made 1924

Indicated Horse Power 437 Owners      Port belonging to     

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

Manufacturers of Steel D. Dobson & Sons Ltd & Steel Co of Scotland Ltd (Letter for Record (S))

Total Heating Surface of Boilers 7526  $\text{sq ft}$  Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers 3 single ended Working Pressure 180 lbs

Tested by hydraulic pressure to 320 Date of test 25-10-24 No. of Certificate 6405 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 63.3  $\text{sq ft}$  No. and Description of safety valves to each boiler 2 Direct Spring - "High Lift"

Area of each set of valves per boiler 10.72  $\text{sq ft}$  (per Rule) 11.88 (as fitted) Pressure to which they are adjusted 185 Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated no

Largest internal dia. of boilers 15'-9 3/8" Length 11'-0" Shell plates: Material steel Tensile strength 28-32

Thickness 1 5/16" Are the shell plates welded or flanged no Description of riveting: circ. seams { end 2 Riv. Lap inter.      }

Diagonal seams 2 Butt - 3 Riveted Diameter of rivet holes in { circ. seams 1 3/8" long. seams 1 5/16" } Pitch of rivets { 4 3/8" 8 3/4" }

Percentage of strength of circ. end seams { plate 68.57 rivets 42.3 } Percentage of strength of circ. intermediate seam { plate      rivets      }

Percentage of strength of longitudinal joint { plate 85.02 rivets 90.5 combined 88.15 } Working pressure of shell by Rules 184 lbs

Thickness of butt straps { outer 1 3/8" x 1 1/2" inner 1 3/8" x 1 1/4" } No. and Description of Furnaces in each Boiler 3 Dighton

Material Steel Tensile strength 26-30 tons Smallest outside diameter 45 1/8"

Length of plain part { top      bottom      } Thickness of plates { crown 1 1/2" bottom 3/2" } Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 186 lbs

Diagonal plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 20 3/4" x 22"

How are stays secured nuts and 12 1/2" x 1" cone washers Working pressure by Rules 189

Diagonal plates: Material { front Steel back Steel } Tensile strength { 26-30 tons 26-30 " } Thickness { 1 1/2" 1 1/2" }

Mean pitch of stay tubes in nests 11 3/8" Pitch across wide water spaces 14 1/2" x 9 1/2" Working pressure { front 188 lbs back 180 " }

Diagonal plates to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder

Centre 7 3/4" x 1 5/8" Length as per Rule 30" Distance apart 9 1/2" No. and pitch of stays

each 2 @ 9 1/2" Working pressure by Rules 197 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 1/2" Back 2 1/2" Top 1 1/2" Bottom 7/8"

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

Working pressure by Rules 182 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 1" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 3 1/2"

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

Working Pressure 279 lbs Main stays: Material Steel Tensile strength 28-32 tons

Diameter { At body of stay, 3 1/2" or 3 1/2" } No. of threads per inch 6 Area supported by each stay 475

Working pressure by Rules 202 lbs Screw stays: Material Steel Tensile strength 26-30 tons

Diameter { At turned off part, 1 3/4" or 1 3/4" } No. of threads per inch 8 Area supported by each stay 82.125

Working pressure by Rules 218 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8 Over threads 1 7/8

No. of threads per inch 8 Area supported by each stay 99 Working pressure by Rules 210 lbs

Tubes; Material iron External diameter { Plain 3 1/2 Stay 3 1/2 Thickness { N. 8 - S. W. G 5/16 + 7/16 No. of threads per inch 9

Pitch of tubes 4 7/8 + 4 3/4 Working pressure by Rules 215 + 207 Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 8" x 1 3/8" No. of rivets and diameter of rivet holes 27 @ 1 3/8"

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged  Steam Dome: Material iron

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 yes

The foregoing is a correct description, **BLAIR & Co., LIMITED** A. P. Hamilton Manufacturer.

Dates of Survey { During progress of work in shops - - } See Engine Report. 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 \_\_\_\_\_

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey, are of good material and workmanship and on completion were tested by hydraulic pressure with satisfactory results.

The boilers have now been fitted on board in accordance with the Rules examined under steam and safety valves adjusted

Survey Fee ... .. £ \_\_\_\_\_ : When applied for, \_\_\_\_\_ 192 \_\_\_\_\_

Travelling Expenses (if any) £ See Engine Report : When received, \_\_\_\_\_ 192 \_\_\_\_\_

Wm. Morrison  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 2 DEC 1924

Assigned \_\_\_\_\_