

## REPORT ON BOILERS.

No. 99127

Received at London Office

JAN 22 1941

1.2. Date of writing Report 19 When handed in at Local Office 14/1/1941 Port of NEWCASTLE-ON-TYNE

2.1.2. No. in Survey Book. 1995 on the S. S. EMPIRE RAIN Date, First Survey 15 March 1940 Last Survey Dec 31 1940

(Number of Visits) Gross 7290.13 Tons Net 5122.92

Built at S. Shields By whom built J. Readhead & Sons Ltd Yard No. 520 When built 1940

Engines made at S. Shields By whom made J. Readhead & Sons Ltd Engine No. 520 When made 1940

Boilers made at S. Shields By whom made J. Readhead & Sons Ltd Boiler No. 520 When made 1940

Nominal Horse Power Owners Ministry of Shipping Port belonging to S. Shields

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~ OR ~~DONKEY~~

Manufacturers of Steel The Steel Company of Scotland Ltd (Letter for Record 5)

Total Heating Surface of Boilers 5486 sq ft Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers 2 Single ended multitubular 2-30-3-40 8-665 Working Pressure 220 lb/sq in

Tested by hydraulic pressure to 380 lb/sq in Date of test P-27-9-40 No. of Certificate P-870 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 60 sq ft No. and Description of safety valves to each boiler 2 Double spring loaded (H.L.)

Area of each set of valves per boiler {per Rule 9.72 sq ft as fitted 9.9 sq ft Pressure to which they are adjusted 220 lb/sq in 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 1'-6" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 15'-6" Length 11'-9" Shell plates: Material S.W. Steel Tensile strength 29-33 Tons/sq in

Thickness 1 1/2" Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R.L.U. inter. 4 1/4" 10" long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" long. seams 1 1/2" Pitch of rivets 10"

Percentage of strength of circ. end seams {plate 64.8 rivets 44.0 Percentage of strength of circ. intermediate seam {plate 85.0 rivets 81.6

Percentage of strength of longitudinal joint {plate 85.0 rivets 81.6 combined 87.5

Thickness of butt straps {outer 1 3/16" inner 1 5/16" No. and Description of Furnaces in each Boiler 3 Deighton Type

Material S.W. Steel Tensile strength 26-30 Tons/sq in Smallest outside diameter 3'-9 1/8"

Length of plain part {top 11'-6" bottom 11'-6" Thickness of plates {crown 1 1/16" bottom 1 1/16" Description of longitudinal joint

Dimensions of stiffening rings on furnace or c.e. bottom

End plates in steam space: Material S.W. Steel Tensile strength 26-30 Tons/sq in Thickness 1 5/16" Pitch of stays 20 1/2 x 20 1/4"

How are stays secured Double nuts & washers outside (1 1/2" dia x 1" thick)

Tube plates: Material {front S.W. Steel Tensile strength 26-30 Tons/sq in Thickness 15/16" {back S.W. Steel Tensile strength 26-30 Tons/sq in Thickness 13/16"

Mean pitch of stay tubes in nests 9 13/16" Pitch across wide water spaces 14"

Girders to combustion chamber tops: Material S.W. Steel Tensile strength 29-33 Tons/sq in Depth and thickness of girder at centre 8 1/2 x 1 3/4" Length as per Rule 2'-7 1/2" Distance apart 9 1/8" No. and pitch of stays in each 229

Combustion chamber plates: Material S.W. Steel Tensile strength 26-30 Tons/sq in Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/2 x 9 3/8" Back 9 15/16 x 9" Top 9 x 9 1/8" Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material S.W. Steel Tensile strength 26-30 Tons/sq in Thickness 15/16"

Lower back plate: Material S.W. Steel Tensile strength 26-30 Tons/sq in Thickness 7/8"

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

Main stays: Material S.W. Steel Tensile strength 28-32 Tons/sq in

Diameter {At body of stay, or Over threads 3 1/2" No. of threads per inch 6

Screw stays: Material S.W. Steel Tensile strength 26-30 Tons/sq in

Diameter {At turned off part, or Over threads 1 7/8" No. of threads per inch 9



Are the stays drilled at the outer ends

No

Margin stays: Diameter { At turned off part, or Over threads } 2

No. of threads per inch

9

Tubes: Material Iron

External diameter

Plain

3

Stay

3

Thickness

8.1.8.9. 5/16 3/8

No. of threads per inch

9

Pitch of tubes

shell plate 16 x 12

Section of compensating ring

8 x 1 1/2

Manhole compensation: Size of opening

No. of rivets and diameter of rivet holes

28 2 1/2

Outer row rivet pitch at ends

10

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

✓

Thickness of crown

✓

No. and diameter of

stays

✓

Inner radius of crown

✓

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 easing gear

Pressure to which the safety valves are adjusted

Hydraulic test pressure

tubes

forgings and castings

and after assembly in place

Are drain cocks on

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

FOR JOHN READHEAD & SONS LTD.

The foregoing is a correct description,

Manufacturer

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - }

See Mely Report

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

31-10-2

Total No. of visits

Is this Boiler a duplicate of a previous case

Yes

If so, state Vessel's name and Report No. THORNHURST BANK. 97322.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boilers have been built under special survey in accordance with rule requirements & approved plans. Materials & workmanship are good. Hydraulic test satisfactory. They have been efficiently installed & fixed in vessel, examined under steam & the safety valves adjusted to the approved pressure.

Survey Fee ... £

Travelling Expenses (if any) £

When applied for, 19

When received, 19

J. W. Matthews

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 28 JAN 1941

Assigned

See Mely. T.B. 99127



© 2020 Lloyd's Register Foundation