

REPORT ON BOILERS.

No. 85947

Received at London Office 12 JUL 1930

Date of writing Report

192

When handed in at Local Office

11/7/30

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

South Shields

Date, First Survey

14 Jan

Last Survey

2 July 1930

1930

on the S.S.

"HARPAGUS"

(Number of Visits)

Gross Tons

Net

Master

Built at South Shields By whom built J. Readhead & Sons Ltd. Yard No. 502 When built 1930

Engines made at

South Shields

By whom made J. Readhead & Sons Ltd.

Engine No. 502 When made 1930

Boilers made at

South Shields

By whom made J. Readhead & Sons Ltd.

Boiler No. 502 When made 1930

Nominal Horse Power

436.

Owners National S.S. Co. Ltd.

Port belonging to London.

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

Manufacturers of Steel

The Steel Company of Scotland Ltd.

(Letter for Record "V")

Total Heating Surface of Boilers

5994 sq ft.

Is forced draught fitted No

Coal or Oil fired Coal.

No. and Description of Boilers

Two Cylindrical Multitubular

Working Pressure 200 lbs.

Tested by hydraulic pressure to

350 lbs

Date of test 2-5-30

No. of Certificate 458

Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler

61.50 sq ft.

Description of safety valves to each boiler 2 spring loaded Grants High Lift.

Area of each set of valves per boiler

per Rule 11.60"

as fitted 11.88"

Pressure to which they are adjusted 200 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

3'-6"

Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating

2'-10"

Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 16'-6 1/8" Length 11'-0"

Shell plates: Material Steel Tensile strength 29-33 Tons

Thickness 1 7/16"

Are the shell plates welded or flanged No

Description of riveting: circ. seams D.R. Lap

long. seams T. R. D. B. S.

Diameter of rivet holes in

circ. seams 1 7/16"

long. seams 1 7/16"

Pitch of rivets

4 1/8"

9 7/8"

Percentage of strength of circ. end seams

plate 65.15

rivets 43.5

Percentage of strength of circ. intermediate seam

plate 85.45

rivets 85.43

Percentage of strength of longitudinal joint

plate 85.43

combined 87.98

Working pressure of shell by Rules 200.2 lbs.

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler 3 Corrugated (Deighton).

Material Steel

Tensile strength 26-30 Tons

Smallest outside diameter 3'-9 1/8"

Length of plain part

top / bottom /

Thickness of plates

crowns 11/16"

bottom 1/16"

Description of longitudinal joint Weld

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

Working pressure of furnace by Rules 224 lbs.

End plates in steam space: Material

Steel

Tensile strength 26-30 Tons

Thickness 1 1/32"

Pitch of stays 20" x 23 1/4"

How are stays secured

Double nuts & loose Washers 12 1/2" dia. x 1" thk. Working pressure by Rules 203.2 lbs.

Tube plates: Material

front Steel

back Steel

Tensile strength 26-30 Tons

Thickness

7/8" 4 1/16" Doubler.

3/4"

Mean pitch of stay tubes in nests 9 1/4" x 9 1/2"

Pitch across wide water spaces 14" x 9 3/4"

Working pressure

front 200 lbs.

back 217 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength 29-33 Tons

Depth and thickness of girder

at centre 7" x 7 1/8" x 2

Length as per Rule 2'-3 1/2"

Distance apart 10"

No. and pitch of stays

in each 2-9"

Working pressure by Rules 207 lbs.

Combustion chamber plates: Material Steel

Tensile strength 26-30 Tons

Thickness: Sides 2 3/32"

Back 2 3/32"

Top 2 3/32"

Bottom 7/8"

Pitch of stays to ditto: Sides 9" x 9 1/2"

Back 9 1/8" x 9 3/4"

Top 9" x 10"

Are stays fitted with nuts or riveted over Nuts.

Working pressure by Rules

Top 200.5 lbs.

Front plate at bottom: Material Steel

Tensile strength 26-30 Tons

Thickness 7/8"

Lower back plate: Material

Steel

Tensile strength 26-30 Tons

Thickness 7/8"

Pitch of stays at wide water space 14" x 9 3/4"

Are stays fitted with nuts or riveted over Nuts.

Working Pressure 215 lbs

Main stays: Material Steel

Tensile strength 28-32 Tons

Diameter

At body of stay, or Over threads 3 1/2"

No. of threads per inch 6

Area supported by each stay 20" x 23 1/4"

Working pressure by Rules 203 lbs

Screw stays: Material Wrought Iron

Tensile strength 21 1/2 Tons

Diameter

At turned off part, or Over threads 1 7/8"

No. of threads per inch 9

Area supported by each stay 9 1/8" x 9 3/4"



Lloyd's Register Foundation

W1318-0179

61.50
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176

REPORT ON BOILERS

Working pressure by Rules **238 lbs.** Are the stays drilled at the outer ends **No.** Margin stays: Diameter ^{At turned off part.} **2 1/8" + 2 1/4"**
 No. of threads per inch **9.** Area supported by each stay **11 7/8" x 12 7/8"** Working pressure by Rules **219 lbs.**
Tubes: Material **Lap Welded Iron** External diameter ^{Plain} **3 1/2"** Thickness ^{8 L. S. G.} **5/16" + 3/8"** No. of threads per inch **9.**
 Pitch of tubes **4 7/8" x 4 3/4"** Working pressure by Rules **Plain 215 lbs. Stay 210.2 lbs.** Manhole compensation: Size of opening in shell plate **12" x 16"** Section of compensating ring **8" x 1 7/16"** No. of rivets and diameter of rivet holes **28 - 1 7/16"**
 Outer row rivet pitch at ends **9 7/8"** Depth of flange if manhole flanged **---** **Steam Dome:** Material **None fitted**
 Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____
 Diameter of rivet holes _____ Pitch of rivets _____ Percentage of strength of joint ^{Plate} _____
 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 _____
 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 **None fitted** Manufacturers of ^{Tubes} _____
 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 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 _____
 to free the superheater from water where necessary _____

FOR JOHN READHEAD & SONS, LTD.

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **Yes.**

John H. Readhead
CHAIRMAN & MANAGING DIRECTOR

Dates of Survey ^{During progress of work in shops - -} _____
 while building ^{During erection on board vessel - - -} **See Index Report** Are the approved plans of boiler ~~and fittings~~ forwarded herewith **Yes.**
 Total No. of visits _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
These Boilers have been built under Special Survey. Materials + Workmanship are good. Hydraulic tests satisfactory. They have been efficiently installed + fixed in the vessel, examined under steam, + their Safety Valves adjusted.

Survey Fee **1st Entry on Machinery** When applied for. **192**
 Travelling Expenses (if any) £ _____ When received. **192**

Rob. Knowles
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI, 18 JUL 1930**

Assigned **See other Rpt - same No.**

