

REPORT ON BOILERS.

No. 100141

Received at London Office

4 FEB 1942

Date of writing Report

19

When handed in at Local Office

2/2/1942 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

Wallsend.

Date, First Survey 27th July 1941 Last Survey 26 Jan 1942

(Number of Visits)

Gross
Tons
Net

on the

SS. "EMPIRE AIRMAN"

Master

Built at Sunderland

By whom built Sir J. Laing & Sons Ltd Yard No. 739 When built 1942

Engines made at

Wallsend

By whom made H.E. Marine Eng Co (1938) Ltd

Engine No. 3009 When made 1942

Boilers made at

By whom made

Boiler No. 3009 When made 1942

Nominal Horse Power

Owners Ministry of War Transport

Port belonging to Sunderland

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Co of Scotland Ltd.

(Letter for Record S ✓)

Total Heating Surface of Boilers

10020 ✓

Is forced draught fitted

yes ✓

Coal or Oil fired

oil ✓

No. and Description of Boilers

3 S.B. ✓

Working Pressure 220 ✓

Tested by hydraulic pressure to

380 lbs.

Date of test 27.11.41

No. of Certificate

926

Can each boiler be worked separately

yes ✓

Area of Firegrate in each Boiler

8.88 ✓

No. and Description of safety valves to each boiler

1 double improved high lift ✓

Area of each set of valves per boiler

per Rule
as fitted8.88
9.8 ✓

Pressure to which they are adjusted

225 lbs.

Are they fitted with easing gear

yes ✓

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

Is oil fuel carried in the double bottom under boilers

yes ✓

Smallest distance between boilers or uptakes and bunkers or woodwork

Is the bottom of the boiler insulated

yes ✓

Smallest distance between shell of boiler and tank top plating

Largest internal dia. of boilers

16'-2 3/8" ✓

Length

12'-6" ✓

Shell plates: Material

S ✓

Tensile strength

30-34 ✓

Thickness

1 33/64" ✓

Are the shell plates welded or flanged

no ✓

Description of riveting: circ. seams

end DR ✓

long. seams

H.R.D.B.S. ✓

Diameter of rivet holes in

circ. seams
long. seams

1 9/16" ✓

Pitch of rivets

4 1/2" ✓

Percentage of strength of circ. end seams

plate
rivets62.1
47 ✓

Percentage of strength of circ. intermediate seam

plate
rivets84.75
88.7 ✓

Percentage of strength of longitudinal joint

plate
rivets
combined84.75
88.7
87.4 ✓

Working pressure of shell by Rules

Thickness of butt straps

outer
inner1 3/32"
1 1/32" ✓

No. and Description of Furnaces in each Boiler

3 cf ✓

Material

S ✓

Tensile strength

26-30 ✓

Smallest outside diameter

47 3/32" ✓

Length of plain part

top
bottom✓
✓

Thickness of plates

crown
bottom47/64"
64/64" ✓

Description of longitudinal joint

weld ✓

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

Working pressure of furnace by Rules

End plates in steam space: Material

S ✓

Tensile strength

26-30 ✓

Thickness

1 1/32" ✓

Pitch of stays 22 1/4" x 18 1/2" ✓

How are stays secured

Double nuts ✓

Working pressure by Rules

15/16" ✓

Tube plates: Material

front
backS ✓
S ✓

Tensile strength

26-30 ✓

Thickness

15/16" ✓

7/8" ✓

Mean pitch of stay tubes in nests

8.7" ✓

Pitch across wide water spaces

14 1/2" x 7 1/2" ✓

Working pressure

front
back✓
✓

Girders to combustion chamber tops: Material

S ✓

Tensile strength

29-33 ✓

Depth and thickness of girder

at centre

11 3/4" x 1" double ✓

Length as per Rule

46 1/2" ✓

Distance apart

8 1/2" wing 9" centre

No. and pitch of stays

in each

30 11 1/8" ✓

Working pressure by Rules

Combustion chamber plates: Material

S ✓

Tensile strength

26-30 ✓

Thickness: Sides

13/16" ✓

Back

23/32" ✓

Top

13/16" ✓

Bottom

29/32" ✓

Pitch of stays to ditto: Sides

11 1/8" x 8 1/2" ✓

Back

9 3/4" x 8" ✓

Top

11 1/8" x 9" ✓

Are stays fitted with nuts or riveted over

nuts ✓

Working pressure by Rules

Front plate at bottom: Material

S ✓

Tensile strength

26-30 ✓

Thickness

15/16" ✓

Lower back plate: Material

S ✓

Tensile strength

26-30 ✓

Thickness

15/16" ✓

Pitch of stays at wide water space

15 3/8" x 8" ✓

Are stays fitted with nuts or riveted over

nuts ✓

Working Pressure

Main stays: Material

S ✓

Tensile strength

28-32 ✓

Diameter

At body of stay,
or
Over threads3 1/4" x 3 1/2"
3 1/4" ✓

No. of threads per inch

6 ✓

Area supported by each stay

Working pressure by Rules

Screw stays: Material

S ✓

Tensile strength

26-30 ✓

Diameter

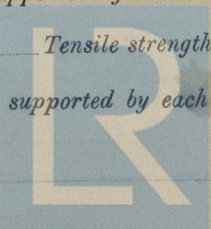
At turned off part,
or
Over threads

1 3/4" x 2" ✓

No. of threads per inch

9 ✓

Area supported by each stay

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005436-005442-0171

Working pressure by Rules Are the stays drilled at the outer ends NO Margin stays: Diameter ^{At turned off part,} or Over threads 2 1/2" x 2"

No. of threads per inch 9 Area supported by each stay Working pressure by Rules

Tubes: Material S.D. Steel External diameter ^{Plain} 2 1/2" ^{Stay} 2 1/2" Thickness 8 L.S.G. 3/16" x 3/16" No. of threads per inch 9

Pitch of tubes 4" x 3 7/8" Working pressure by Rules Manhole compensation: Size of opening in shell plate none Section of compensating ring No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends Depth of flange if manhole flanged 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

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 N.E.M. Combustion Chamber

Manufacturers of ^{Tubes} ^{Steel forgings} ^{Steel castings}

Number of elements 36 Material of tubes S.D. Steel Internal diameter and thickness of tubes 1273 x 7 W.G.

Material of headers S.D. Steel Tensile strength 26-28 tons Thickness 1" Can the superheater be shut off and the boiler be worked separately no

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes

Area of each safety valve 3.14 Are the safety valves fitted with easing gear yes Working pressure as per Rules 220 lbs

Pressure to which the safety valves are adjusted 225 lbs Hydraulic test pressure: tubes 1500 lbs headers 660 lbs and after assembly in place 440 lbs Are drain cocks or valves fitted to free the superheater from water where necessary yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description,
THE NORTH EASTERN MARINE ENGINEERING CO. (1880) LTD.

John Nall Manufacturer.

Dates of Survey ^{During progress of work in shops} ^{During erection on board vessel}

See Encl. Report

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

Total No. of visits

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. Empire Silver Hare 99435

GENERAL REMARKS (State quality of workmanship; opinions as to class, &c.) These boilers have been made under Special Survey in accordance with the approved Plans, the Requirements of the Rules & the Specification. The materials & workmanship are good. The boilers proved sound & tight under hydraulic test & under steam.

Survey Fee Travelling Expenses (if any)

See Encl. Report

When applied for, 19 When received, 19

R. C. Moffitt
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRL 20 FEB 1942

Assigned

See Std. J.C. 33310



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