

REPORT ON BOILERS.

No. 96680

SEP 16 1938

Received at London Office

Date of writing Report

19

When handed in at Local Office

15 SEP 1938

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

wallsend

Date, First Survey

21/3/38

Last Survey

8/9/1938

on the

SS "ITTERSUM"

(Number of Visits)

Gross
Tons
Net

Master

Built at

Sunderland

By whom built

Wm. Duxford & Sons Ltd

Yard No.

647

When built

1938

Engines made at

wallsend

By whom made

H. E. Marine Eng Co.

Engine No.

2919

When made

1938

Boilers made at

wallsend

By whom made

H. E. Marine Eng Co.

Boiler No.

2919

When made

1938

Nominal Horse Power

455

Owners

Vinke & Co.

Port belonging to

Amsterdam

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd. Applby-Hoddingham S. Co. Steel Co of Scotland (Letter for Record S)

Total Heating Surface of Boilers

5280 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

Two single ended multitubular

Working Pressure

220 lbs

Tested by hydraulic pressure to

380 lbs

Date of test

25-7-38

No. of Certificate

787

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

46 1/2 sq ft

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

per Rule 14.04 sq in

as fitted 16.58 sq in

Pressure to which they are adjusted

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

21"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

25"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-3"

Length

12'-4 1/2"

Shell plates: Material

Steel

Tensile strength

29-33 tons

Thickness

1 1/2"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

inter.

Long. seams

T.R. double straps

Diameter of rivet holes in

circ. seams 1 1/2"

long. seams 1 1/2"

Pitch of rivets

4"

Percentage of strength of circ. end seams

plate 62.5

rivets 46.7

Percentage of strength of circ. intermediate seam

plate —

rivets —

Percentage of strength of longitudinal joint

plate 85.36

rivets 85.45

combined 87.82

Working pressure of shell by Rules

226 lbs

Thickness of butt straps

outer 1 5/32"

inner 1 9/32"

No. and Description of Furnaces in each Boiler

Three corrugated (Seignton)

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

44 5/8"

Length of plain part

top —

bottom —

Thickness of plates

crown 11/16"

bottom 11/16"

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

225 lbs

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays

23" x 20 13/16"

How are stays secured

double nuts

Working pressure by Rules

220 lbs

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons

Thickness

7/8"

Mean pitch of stay tubes in nests

8'7"

Pitch across wide water spaces

14 1/2"

Working pressure

front 259 lbs

back 380 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33 tons

Depth and thickness of girder

at centre

11 1/2" x 2 @ 1"

Length as per Rule

46 1/2"

Distance apart

8 1/2"

No. and pitch of stays

in each

3 @ 10 3/4"

Working pressure by Rules

230 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

25/32"

Back

11/16"

Top

25/32"

Bottom

27/32"

Pitch of stays to ditto: Sides

10 15/16" x 8 3/4"

Back

9 1/4" x 8"

Top

10 3/4" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

220 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

15/16"

Pitch of stays at wide water space

14 1/2" x 10 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

225 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

479 sq in

Working pressure by Rules

225 lbs

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part, or over threads

13/4" + 1 1/8"

No. of threads per inch

9

Area supported by each stay

91.3 sq in

Working pressure by Rules 233 lbs Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part,} 1 3/8" ^{or} Over threads

No. of threads per inch 9 Area supported by each stay 88 sq" Working pressure by Rules 240 lbs

Tubes: Material A.D. Steel External diameter ^{Plain} 2 1/2" ^{Stay} 2 1/2" Thickness 7/16" + 3/8" No. of threads per inch 9

Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 252 lbs Manhole compensation: Size of opening 16" x 12"

END steel plate Section of compensating ring — No. of rivets and diameter of rivet holes —

Outer row rivet pitch at ends — Depth of flange if manhole flanged 4 5/16" 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 — 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 Combustion Chamber Manufacturers of ^{Tubes} Tubes Ltd ^{Steel forgings} Chesterfield Tube Co ^{Steel castings} Hopkinsons Ltd.

Number of elements 32 Material of tubes Solid drawn steel Internal diameter and thickness of tubes 1.023" x 7/16"

Material of headers Solid drawn 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 3.1416 sq" 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 1500 lbs

tubes 1500 lbs forgings and castings 660 lbs and after assembly in place 440 lbs Are drain cocks 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 —

The foregoing is a correct description,
THE NORTH EASTERN MARINE ENGINEERING CO. (1939) LTD. Manufacture
John Neill

Dates of Survey ^{During progress of work in shops - -} See Survey 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 - -} See Survey Report Total No. of visits —

Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. —

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey, in accordance with the approved plan and Rules, the materials and workmanship are good: on completion they were tested by hydraulic pressure to 380 lbs per square inch and found tight and satisfactory.

They have been fitted on board in an efficient manner, tried under steam and found in order.

Survey Fee ... Charged on When applied for, 19

Travelling Expenses (if any) £ machs Rpt When received, 19

J. S. Sellar

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 23 SEP 1938

Assigned See F.E. Rpt.



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Foundation