

# 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 Reg. Book

Survey held at *Wallsend*

Date, First Survey *21 3 1938*

Last Survey *8 19 1938*

on the

*S.S. "ITTERSUM"*

(Number of Visits)

Gross Tons  
Net

Master

Built at *Sunderland*

By whom built *Wm. Duffield & Sons Ltd*

Yard No. *647*

When built *1938*

Maker of 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. Appby-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* inches

Is oil fuel carried in the double bottom under boilers *Yes*

Smallest distance between shell of boiler and tank top plating

*25* inches

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 *4"*  
inter. *4"*

long. seams

*T.R. double straps*

Diameter of rivet holes in

circ. seams *1 1/2"*

long. seams *1 1/2"*

Pitch of rivets

*10 1/4"*

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 (Daylton)*

Material

*Steel*

Tensile strength *26-30 tons*

Smallest outside diameter

*44 5/8"*

Length of plain part

top *-*

bottom *-*

Thickness of plates

crowns *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"*

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, *3 1/2"*

Over threads *-*

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, *1 3/4" + 1 1/8"*

Over threads *-*

No. of threads per inch

*9*

Area supported by each stay

*91.3 sq in*



Lloyd's Register Foundation

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

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 <sup>Plain</sup> 2 1/2" <sub>Stay</sub> 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 <sup>Plate</sup> — <sub>Rivets</sub> —

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 — Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell —

Type of Superheater Combustion Chamber Manufacturers of <sup>Tubes</sup> Tubes Ltd <sub>Steel forgings</sub> Chesterfield Tube Co <sub>Steel castings</sub> Hopkinson's 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 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 <sup>During progress of work in shops - -</sup> See Weekly Report Are the approved plans of boiler and superheater forwarded herewith Yes <sub>(If not state date of approval.)</sub>

<sup>while building</sup> <sub>board vessel - -</sub> See Weekly 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. Selles  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 23 SEP 1938

Assigned See F.B. Rpt.

