

# REPORT ON BOILERS.

No. 124585

Received at London Office 16 OCT 1946

Date of writing Report 19 When handed in at Local Office 19 Port of **LIVERPOOL**

No. in Survey held at Glasgow Dock (San) Date, First Survey 2/4/46 Last Survey 3/9/1946

6503 on the Steam Trawler ST. PHILIP (EX KUNISHI) (Number of Visits ) Gross 301.42 Tons Net 113.33

Builder Middlesbrough By whom built Smiths Dock & Co. Yard No. 827 When built 1927

Engines made at Middlesbrough By whom made Smiths Dock & Co. Ltd. Engine No. 297 When made 1927

Boilers made at Slunderland By whom made George Clark Boiler No. 247 When made 1927

Nominal Horse Power 105 Owners The Boston Ind. & Trading & Ice Co Port belonging to Glutwood

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel (Letter for Record S.B.)

Total Heating Surface of Boilers 1980 Is forced draught fitted No. Coal or Oil fired Coal

No. and Description of Boilers 1 SE. multitubular (Scalped Type) Working Pressure 180 lb/in<sup>2</sup>

Tested by hydraulic pressure to 320 lb/in<sup>2</sup> Date of test 17-3-27 No. of Certificate BCTEST. NO 3105. WP. 180 lb/in<sup>2</sup> Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 55.4 sq ft No. and Description of safety valves to each boiler Two - spring loaded.

Area of each set of valves per boiler { per Rule 12.41 as fitted 14.14 Pressure to which they are adjusted 180 lb/in<sup>2</sup> 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 None clear. Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated ✓

Largest internal dia. of boilers 14'-0" Length 10'-9" Shell plates: Material stew. Tensile strength 28-32 tons

Thickness 1 5/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D.R. inter. ✓

long. seams Trehle Rivets D.B.S. Diameter of rivet holes in { circ. seams 1 3/16" long. seams 1 3/16" Pitch of rivets { 3 1/2" 8 1/2"

Percentage of strength of circ. end seams { plate 66.09% rivets 43.98% Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓

Percentage of strength of longitudinal joint { plate 86.04% rivets 86.2% combined 89.44% Working pressure of shell by Rules 181.24.

Thickness of butt straps { outer 7/8" inner 1" No. and Description of Furnaces in each Boiler 3 - Plain.

Material stew. Tensile strength ✓ Smallest outside diameter 5'-5 3/4"

Length of plain part { top 6'-6 1/16" bottom ✓ Thickness of plates { crown 1/4" bottom 1/64" Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 187.2 lb/in<sup>2</sup>

End plates in steam space: Material stew. Tensile strength 26-30 tons Thickness 1 7/64" Pitch of stays 18" x 19"

How are stays secured Double nut + loose washers. Working pressure by Rules 212.8 lb/in<sup>2</sup>

Tube plates: Material { front stew back stew. Tensile strength { 26-30 tons Thickness { 1" 3/4"

Mean pitch of stay tubes in nests 9" x 11 1/4" Pitch across wide water spaces 14 1/4" Working pressure { front 288.6 lb/in<sup>2</sup> back 253.9.

Girders to combustion chamber tops: Material stew. Tensile strength 28-32 tons Depth and thickness of girder

at centre 9 3/4" Double Plat. Length as per Rule 2'-7 5/8" Distance apart 8 1/2" No. and pitch of stays

in each Two - 9 1/16" Working pressure by Rules 240 lb/in<sup>2</sup> Combustion chamber plates: Material stew.

Tensile strength 26-30 tons Thickness: Sides 2 1/32" Back 5/8" Top 2 1/32" Bottom 1"

Pitch of stays to ditto: Sides 8" x 9 3/4" Back 9" x 9" Top 8 1/2" x 9 1/4" Are stays fitted with nuts or riveted over Nuts.

Working pressure by Rules 187.2 Front plate at bottom: Material stew Tensile strength 26-30 tons.

Thickness 1" Lower back plate: Material stew. Tensile strength 26-30 tons. Thickness 7/8"

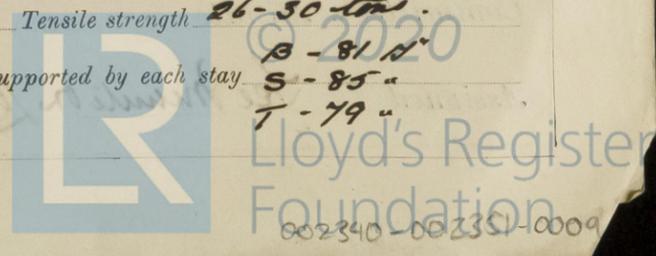
Pitch of stays at wide water space 14 1/4" x 9" Are stays fitted with nuts or riveted over Nuts.

Working Pressure 220.7 lb/in<sup>2</sup> Main stays: Material stew. Tensile strength 28-32 tons.

Diameter { At body of stay, 2 7/8" No. of threads per inch 6 Area supported by each stay 295 in<sup>2</sup> or Over threads

Working pressure by Rules 207 lb/in<sup>2</sup> Screw stays: Material stew. Tensile strength 26-30 tons.

Diameter { At turned off part, 1 3/4" + 1 1/8" No. of threads per inch 9 Area supported by each stay B - 81 in<sup>2</sup> S - 85 in<sup>2</sup> T - 79 in<sup>2</sup> or Over threads



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Working pressure by Rules <sup>B-224</sup> ~~S-214~~ ~~T-213~~ Are the stays drilled at the outer ends *no.* Margin stays: Diameter <sup>At turned off part,</sup> <sub>or</sub> <sup>Over threads</sup>  $1\frac{7}{8} + 2\frac{1}{8}$ "

No. of threads per inch *9.* Area supported by each stay  $104.2\text{ sq. in.}$  Working pressure by Rules  $204.6\text{ lb./sq. in.}$

Tubes: Material *Iron - Salt Water* External diameter <sup>Plain</sup>  $3\frac{1}{4}$ " <sup>Stay</sup>  $3\frac{1}{4}$ " Thickness <sup>8 W.G.</sup>  $3/16, 5/16 + 1/4$ " No. of threads per inch *9.*

Pitch of tubes  $4\frac{1}{2} \times 4\frac{1}{2}$ " Working pressure by Rules  $205 + 230\text{ lb./sq. in.}$  Manhole compensation: Size of opening in shell plate  $16 \times 12$ " Section of compensating ring  $2\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$ " No. of rivets and diameter of rivet holes  $28 @ 1\frac{1}{4}$ "

Outer row rivet pitch at ends  $8\frac{1}{4}$ " 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 <sup>Plate</sup> <sub>Rivets</sub> *✓*

Internal diameter *✓* Working pressure by Rules *✓* Thickness of crown *✓* No. and diameter of stays *✓* Inner radius of crown *✓* Working pressure by Rules *✓*

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 *low.* Manufacturers of <sup>Tubes</sup> *✓* <sup>Steel forgings</sup> *✓* <sup>Steel castings</sup> *✓*

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 *✓* forgings and castings *✓* and after assembly in place *✓* Are drain cocks or 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 *yes.*

The foregoing is a correct description,   
 \_\_\_\_\_ Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> <sub>while building</sub> <sup>During erection on board vessel - - -</sup> 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. *ST CONINGSBY. LIV REPT NO 124316.*

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

*The boiler of the vessel was built under the United Corporation Survey. The boiler has been opened up and examined internally + externally + the safety valves adjusted under steam to 180 lb./sq. in. The scantlings of the boiler have been checked and are in accordance with the Bureau Plans. The workmanship and material appear to be of good quality and the boiler in my opinion is eligible for classification with record of - 1 S.B. 3 P.F. 180 lb./sq. in.*

Survey Fee *See Machinery Report 9* : *10* When applied for, *10*

Travelling Expenses (if any) £ : : When received, *10*

*H. H. Kindley*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *LIVERPOOL 15 OCT 1946*

Assigned *See Minute on Liverpool Report 9 No. 124585*



Rpt. 13.

Date of writing Report

No. in Survey Reg. Book. *62199*

Built at *M...*

Owners *B...*

Electrical Installation

Is vessel fitted with

Have plans been approved

Heating *...*

has the governing machinery

trip switch as per

if not compound

arranged to run

*Legal*

test for machinery

of the generator

near unprotected

injury and damage

contact *yes*

are they in accordance

and oil *...*

material is used

semi-insulating

Is the construction

to pilot and

side of switch

*✓*

Are compartments

ammeters *...*

equaliser con