

REPORT ON BOILERS.

No. 46504

25 JAN 1936

24 JAN 1936

Received at London Office

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

No. in Reg. Book Hull Date, First Survey 14th October 1935 Last Survey 13th January 1936

on the Steam Trawler "Thornwick Bay" (Number of Visits ✓) (Gross Tons ✓) (Net Tons ✓)

Master ✓ Built at Beverley By whom built Cook, Welton & Semmell Yard No. 604 When built 1936

Engines made at Hull By whom made Amos & Smith Ltd. Engine No. 645 When made 1936

Boilers made at do By whom made do Boiler No. 645 When made 1936

Nominal Horse Power 112 Owners Marine Steam Fishing Co Ltd. Port belonging to Hull.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby - Frodingham Steel Co Ltd. (Letter for Record S)

Total Heating Surface of Boilers 1960 sq. ft. Is forced draught fitted No Coal or Oil fired Coal.

No. and Description of Boilers One Single-ended. Working Pressure 210 lbs

Tested by hydraulic pressure to 365 lbs Date of test 24/12/35 No. of Certificate 3926 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 51 sq. ft. No. and Description of safety valves to each boiler Two Spring loaded.

Area of each set of valves per boiler {per Rule 10.9 sq. ins as fitted 11.9 " Pressure to which they are adjusted 210 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 10 " Is oil fuel carried in the double bottom under boilers ✓

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated No

Largest internal dia. of boilers 14'-9 " Length 10'-9 " Shell plates: Material Steel. Tensile strength 29/33 Tons

Thickness 1 3/8 " Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R. Lap. inter. ✓

long. seams TR. DBS. Diameter of rivet holes in {circ. seams } 1 3/8 " Pitch of rivets { 4 " 9 1/2 "

Percentage of strength of circ. end seams {plate 65.7 rivets 42.75 Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓

Percentage of strength of longitudinal joint {plate 85.6 rivets 84.25 combined 87.95 Working pressure of shell by Rules 211 lbs

Thickness of butt straps {outer 1 1/2 " inner 1 5/32 " No. and Description of Furnaces in each Boiler 3 Plain furnaces, with Goulay necks.

Material Steel Tensile strength 26/30 Tons Smallest outside diameter 42 1/32 "

Length of plain part {top 77 " bottom 74 1/2 " Thickness of plates {crown } 53/64 " Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 211.5 lbs

End plates in steam space: Material Steel Tensile strength 26/30 Tons Thickness 1 1/4 " Pitch of stays 19" by 20"

How are stays secured Double nuts and washers. Working pressure by Rules 215 lbs

Tube plates: Material {front } Steel Tensile strength { 26/30 Tons Thickness { 5/16 " 7/8 "

Mean pitch of stay tubes in nests 11 " Pitch across wide water spaces 14 " Working pressure {front 212 lbs back 230 lbs

Girders to combustion chamber tops: Material Steel. Tensile strength 29/33 Tons Depth and thickness of girder at centre 9 3/4 x 2 x 7/8 " Length as per Rule 3'-1 " Distance apart 8 1/2 " wings. 9" Centre. No. and pitch of stays in each 3 @ 8 " Working pressure by Rules 211 lbs Combustion chamber plates: Material Steel.

Tensile strength 26/30 Tons Thickness: Sides 3/4 " Back 45/64 " Top 1/16 " Bottom 3/4 "

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

Working pressure by Rules 215 lbs (centre back) Front plate at bottom: Material Steel. Tensile strength 26/30 Tons

Thickness 15/16 " Lower back plate: Material Steel Tensile strength 26/30 Tons Thickness 7/8 "

Pitch of stays at wide water space 14" x 7 1/8 " Are stays fitted with nuts or riveted over Nuts.

Working Pressure 243 lbs Main stays: Material Steel. Tensile strength 28/32 Tons

Diameter {At body of stay, } 3 1/4 " No. of threads per inch 6 Area supported by each stay 380 "

Working pressure by Rules 211 lbs Screw stays: Material Steel Tensile strength 26/30 Tons

Diameter {At turned off part, } 1 3/4 ", 1 7/8 " & 2 " No. of threads per inch 9 Area supported by each stay 78.75 (Centre back)

Working pressure by Rules 231 lb^2 Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1 \frac{7}{8}''$
 No. of threads per inch *9* Area supported by each stay 96 sq ins. Working pressure by Rules 222 lb^2
 Tubes: Material *W.I.* External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 3 \frac{1}{2}''$ Thickness $\left\{ \begin{array}{l} 8 \text{ W.G.} \\ 3/8'' \text{ or } 5/16'' \end{array} \right.$ No. of threads per inch *9*
 Pitch of tubes $5'' \times 4 \frac{3}{4}''$ Working pressure by Rules 215 lb^2 Manhole compensation: Size of opening in shell plate 16×12 (in dome) Section of compensating ring *Steam dome.* No. of rivets and diameter of rivet holes
 Outer row rivet pitch at ends Depth of flange if manhole flanged Steam Dome: Material *Steel*
 Tensile strength $26/30 \text{ Tons}^2$ Thickness of shell $3/4''$ Description of longitudinal joint *S.R. Lap.*
 Diameter of rivet holes $1 \frac{1}{2}''$ Pitch of rivets $2 \frac{1}{4}''$ Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate } 54.2\% \\ \text{Rivets } 43.5\% \end{array} \right.$
 Internal diameter $3'-0''$ Working pressure by Rules 210 lb^2 Thickness of crown $1''$ No. and diameter of stays $2 @ 2 \frac{1}{2}''$ Inner radius of crown *flat.* Working pressure by Rules *ample.*
 How connected to shell *S.R. Lap.* Size of doubling plate under dome $4'-5 \frac{3}{4}'' \text{ dia} \times 1 \frac{1}{8}''$ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell $1 \frac{3}{8}'' \times 9 \frac{3}{4}''$

Type of Superheater *Smoke Tube Type.* Manufacturers of Tubes *The Superheater Co. Ltd. Mchtr.*
 Number of elements *41* Material of tubes *SD. Steel* Steel castings *Merr & Gopling - South Sunderland.* Internal diameter and thickness of tubes $20 \text{ mm} \text{ by } 2.5 \text{ mm.}$
 Material of headers *Jorgel Steel.* Tensile strength $28/32 \text{ Tons}^2$ Thickness $5/8''$ Can the superheater be shut off and the boiler be worked separately *Yes* 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 sq ins Are the safety valves fitted with easing gear *Yes* Working pressure as per Rules 217 lb^2 Pressure to which the safety valves are adjusted 210 lb^2 Hydraulic test pressure: tubes 1000 lb^2 castings 630 lb^2 and after assembly in place 420 lb^2 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 **For AMOS & SMITH LTD.**

The foregoing is a correct description,
A. L. Kearney Manufacturer.
 MANAGER

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops - -} \end{array} \right.$ *See machinery* Are the approved plans of boiler and superheater forwarded herewith *Yes.*
 while $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel - - -} \end{array} \right.$ *Report herewith* (If not state date of approval.)
 building Total No. of visits

Is this Boiler a duplicate of a previous case *Yes.* If so, state Vessel's name and Report No. *"Drengley" (Hull Rpt N° 45423)*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been constructed under Special Survey and in accordance with the approved plan. It has been satisfactorily fitted on board, examined under steam and safety valves adjusted as above.*

Survey Fee $\dots \dots \dots$ £ *charged on next Rpt* When applied for, 19
 Travelling Expenses (if any) £ *Hendon* When received, 19

W. B. Edwards.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 31 JAN 1936*
 Assigned *+ Linc 136*
C.L.



Rpt. 13.
 Date of writ
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