

REPORT ON BOILERS.

No. 44466.

23 APR 1937

Received at London Office APR 24 1937

Date of writing Report 24.2.37 When handed in at Local Office 10 Port of HULL

No. in Survey held at Hull. Date, First Survey 6th Nov. 1936 Last Survey 13th Apr. 1937

8451 on the Steam Trawler "MAN O WAR" (Number of Visits ✓) Gross Tons 575.75 Net Tons 284.87

Master Built at Selby By whom built Lochrane & Sons Ltd Yard No. 1179 When built 1937-4

Engines made at Hull By whom made Amos & Smith Ltd Engine No. 653 When made 1937

Boilers made at Hull By whom made Amos & Smith Ltd Boiler No. 653 When made 1937

Nominal Horse Power 135 Owners Sir Alec Black Bart. Port belonging to Grimsby.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 2370 square feet. Is forced draught fitted No Coal or Oil fired Coal ✓

No. and Description of Boilers One Single Ended Return Tube 186 Working Pressure 220 lbs/sq. in. ✓

Tested by hydraulic pressure to 380 lbs/sq. in. Date of test 10.3.37 No. of Certificate 3967. Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 66.5 sq. ft. No. and Description of safety valves to each boiler Two 3" diameter spring loaded ✓

Area of each set of valves per boiler {per Rule 12.6 sq. ins. as fitted 14.13 sq. ins. Pressure to which they are adjusted 220 lbs/sq. in. 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 Yes ✓

Largest internal dia. of boilers 15'-9" Length 11'-0" Shell plates: Material Steel Tensile strength 30-34 Tons/sq. in. ✓

Thickness 1 1/2" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end Double riveted ✓ inter. ✓

Long. seams Treble riveted D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" long. seams 1 1/2" Pitch of rivets {4 3/8" 10" ✓

Percentage of strength of circ. end seams {plate 65.7 rivets 42.1 Percentage of strength of circ. intermediate seam {plate rivets ✓

Percentage of strength of longitudinal joint {plate 85 rivets 86.4 combined 87.8 Working pressure of shell by Rules 221 lbs/sq. in. ✓

Thickness of butt straps {outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler 3 Deighton Corrugated 2cf ✓

Material Steel Tensile strength 26-30 Tons/sq. in. Smallest outside diameter 4'-0" ✓

Length of plain part {top bottom Thickness of plates {crown 3/4" bottom 3/4" Description of longitudinal joint Welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 230 lbs/sq. in. ✓

End plates in steam space: Material Steel Tensile strength 26-30 Tons/sq. in. Thickness 1 1/4" Pitch of stays 18" x 18" Mean ✓

How are stays secured Double nuts & washers. Working pressure by Rules 225 lbs/sq. in. ✓

Tube plates: Material {front Steel back Steel Tensile strength {26-30 Tons/sq. in. 26-30 Tons/sq. in. Thickness {1" 7/8" ✓

Mean pitch of stay tubes in nests 10.828" Pitch across wide water spaces 1'-2 1/4" Working pressure {front 237 lbs/sq. in. back 236 lbs/sq. in. ✓

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 Tons/sq. in. Depth and thickness of girder 9 1/4" Wings 2" ✓

at centre 10" Centre 8 1/2" Double Length as per Rule 34" Distance apart 11" Centre 9" Wings No. and pitch of stays in each 3 x 8" pitch. Working pressure by Rules 221 lbs/sq. in. ✓

Tensile strength 26-30 Tons/sq. in. Thickness: Sides 3/4" Back 1/4" Top 1/6" Bottom 7/8" ✓

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

Working pressure by Rules 221 lbs/sq. in. Front plate at bottom: Material Steel Tensile strength 26-30 Tons/sq. in. ✓

Thickness 1" Lower back plate: Material Steel Tensile strength 26-30 Tons/sq. in. Thickness 7/8" ✓

Pitch of stays at wide water space 1'-2 1/4" x 8 1/2" Max Are stays fitted with nuts or riveted over Nuts. ✓

Working Pressure 222 lbs/sq. in. Main stays: Material Steel Tensile strength 28-32 Tons/sq. in. ✓

Diameter {At body of stay, 3 1/4" No. of threads per inch 6 Area supported by each stay 324 square inches ✓

Working pressure by Rules 226 lbs/sq. in. Screw stays: Material Steel Tensile strength 26-30 Tons/sq. in. ✓

Diameter {At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 74 square inches ✓

Working pressure by Rules 245 lbs/sq. in. Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part, $1\frac{1}{4}$, $1\frac{1}{8}$ & 2 "
or Over threads $1\frac{1}{4}$, $1\frac{1}{8}$ & 2 "
No. of threads per inch 9 Area supported by each stay 93 square inches Working pressure by Rules 229 lbs/sq. in.
Tubes: Material *Iron* External diameter { Plain $3\frac{1}{2}$ "
Stay $3\frac{1}{2}$ " Thickness { 7 w. 9.
 $\frac{5}{16}$, $\frac{1}{8}$ & $\frac{1}{16}$ " No. of threads per inch 9
Pitch of tubes $4\frac{1}{16}$ " x $4\frac{1}{16}$ " Working pressure by Rules 260 lbs/sq. in. Manhole compensation: Size of opening
shell plate 16 " x 12 " Section of compensating ring $4\frac{1}{2}$ " dia x $1\frac{1}{8}$ " thk No. of rivets and diameter of rivet holes $16 - 1\frac{1}{16}$ " diameter
Outer row rivet pitch at ends $1\frac{1}{2}$ " Depth of flange if manhole flanged $1\frac{1}{2}$ " Steam Dome: Material *Steel*
Tensile strength $28.32 \text{ Tons/sq. in.}$ Thickness of shell $\frac{1}{16}$ " Description of longitudinal joint *Single riveted lap*
Diameter of rivet holes $1\frac{1}{32}$ " Pitch of rivets $2\frac{1}{8}$ " Percentage of strength of joint { Plate 51.4
Rivets 42.8
Internal diameter $3'0"$ Working pressure by Rules 242 lbs/sq. in. Thickness of crown 1 " No. and diameter of
stays $2 - 2\frac{1}{2}$ " diameter Inner radius of crown 1 " Working pressure by Rules 242 lbs/sq. in.
How connected to shell *Single riveted* Size of doubling plate under dome $4\frac{1}{2}$ " dia x $1\frac{1}{8}$ " thk Diameter of rivet holes and pitch
of rivets in outer row in dome connection to shell $44 - 1$ " dia rivets $3 - 6\frac{1}{2}$ " p.c.d.

Type of Superheater

Smoke tube

Manufacturers of

Tubes *Please see Manchester Report*
Steel forgings $N^o F6057/8$
Steel castings *Jopling & Sons Ltd*

Number of elements 43 Material of tubes *S. I. Steel* Internal diameter and thickness of tubes $20 \text{ m.p. } 2\frac{1}{2} \text{ m.p.}$
Material of headers *Steel* Tensile strength $26.30 \text{ Tons/sq. in.}$ 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 $3.1416 \text{ square inches}$ Are the safety valves fitted with easing gear *Yes* Working pressure as per
Rules *Approved for 220 lbs/sq. in.* Pressure to which the safety valves are adjusted 220 lbs/sq. in. Hydraulic test pressure
tubes 1000 lbs/sq. in. forgings and castings 660 lbs/sq. in. and after assembly in place 440 lbs/sq. in. 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,

J. A. Orde

Manufacturer

Dates of Survey { During progress of
work in shops - - -
while building { During erection on
board vessel - - -

Please see Mch. Rpt.

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

Total No. of visits *Herewith*

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.) *The boiler has been built
under Special Survey 9 in accordance with the approved plan, the materials
& workmanship being sound & good.*

The approved plan is retained for guidance in building boiler for C654-596.

Charged on engine report herewith.

Survey Fee ... £ : : When applied for, 10
Travelling Expenses (if any) £ : : When received, 10

J. A. Orde

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 30 APR 1937

Assigned

See Incl. J.C. 47766



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Foundation