

REPORT ON BOILERS.

No. 20189.

Received at London Office 29 JUL 1936

Date of writing Report 20. 4 36 When handed in at Local Office 14th July 1936 Port of Greenock
No. in Reg. Book. 743 Survey held at Greenock Date, First Survey 11th October 1935 Last Survey 14th July 1936
on the J.M.S. "Arinia" (Number of Visits) Gross 8024.50 Tons Net 4444.26
Master Built at Glasgow By whom built Lithgow & Co Yard No. 880 When built 1936
Engines made at Greenock By whom made John & Duncan Ltd Engine No. 1192 When made 1936
Boilers made at ditto By whom made ditto Boiler No. 1192 When made 1936
Nominal Horse Power Owners Anglo-Saxon Petroleum Co Ltd Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, ~~RECOND~~.

Manufacturers of Steel Bolnisi, Scottish Steel Co of Scotland Cargo Fleet Works (Letter for Record S ✓)

Total Heating Surface of Boilers 2502 ft² ✓ Is forced draught fitted Yes ✓ Coal or Oil fired Oil ✓

No. and Description of Boilers one Single Ended ✓ Working Pressure 180 ✓

Tested by hydraulic pressure to 320 Date of test 3.4.36 No. of Certificate 2050 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler Oil Fired No. and Description of safety valves to each boiler Double Spring

Area of each set of valves per boiler {per Rule 16 sq. in. as fitted 16.58 sq. in. Pressure to which they are adjusted 185 ✓ 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 2'-6" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 17'-0" Is the bottom of the boiler insulated Yes ✓

Largest internal dia. of boilers 14'-6" ✓ Length 11'-6" ✓ Shell plates: Material S ✓ Tensile strength 29.33 ✓

Thickness 1 5/32" ✓ Are the shell plates welded or flanged ✓ Description of riveting: circ. seams {end DR ✓ inter. ✓

long. seams T.R.D.B.S. ✓ Diameter of rivet holes in {circ. seams 1 7/32" ✓ long. seams 1 5/32" ✓ Pitch of rivets {3.527 ✓ 7 7/8" ✓

Percentage of strength of circ. end seams {plate 65.4 ✓ rivets 45.3 ✓ Percentage of strength of circ. intermediate seam {plate 85.82 ✓ rivets 85.75 ✓ combined 84.79 ✓

Percentage of strength of longitudinal joint {plate 7/8" ✓ rivets 1" ✓ Working pressure of shell by Rules 180

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

Material S ✓ Tensile strength 26-30 ✓ Smallest outside diameter 3.4 1/8" ✓

Length of plain part {top ✓ bottom ✓ Thickness of plates {crown 9/16" ✓ bottom ✓ Description of longitudinal joint welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 189 ✓

End plates in steam space: Material S ✓ Tensile strength 26-30 ✓ Thickness 1 9/32" ✓ Pitch of stays 21" + 19 1/2" ✓

How are stays secured D.N. washers ✓ Working pressure by Rules 191 ✓

Tube plates: Material {front S ✓ back S ✓ Tensile strength {26-30 ✓ Thickness {1 5/16" ✓ 1 1/16" ✓

Mean pitch of stay tubes in nests 9.375" Pitch across wide water spaces 13 1/2" ✓ Working pressure {front 225 ✓ back 191 ✓

Girders to combustion chamber tops: Material S ✓ Tensile strength 29.33 ✓ Depth and thickness of girder

at centre 8 1/2" x 3 1/4" (2) ✓ Length as per Rule 2.4578" ✓ Distance apart 9 ✓ No. and pitch of stays

in each 3 at 9 1/2" ✓ Working pressure by Rules 193 ✓ Combustion chamber plates: Material S ✓

Tensile strength 26-30 ✓ Thickness: Sides 1 1/16" ✓ Back 1 1/16" ✓ Top 1 1/16" ✓ Bottom 3/4" ✓

Pitch of stays to ditto: Sides 4 1/2" x 4 7/16" ✓ Back 4 7/16" x 4 1/2" ✓ Top 9" x 4 1/2" ✓ Are stays fitted with nuts or riveted over Rivetted ✓

Working pressure by Rules 184 ✓ Front plate at bottom: Material S ✓ Tensile strength 26.30 ✓

Thickness 1 5/16" ✓ Lower back plate: Material S ✓ Tensile strength 26.30 ✓ Thickness 1 3/16" ✓

Pitch of stays at wide water space 14" ✓ Are stays fitted with nuts or riveted over Marginal stays Nuts & others rivetted ✓

Working Pressure 189 ✓ Main stays: Material S ✓ Tensile strength 28-32

Diameter {At body of stay, 3 1/4" ✓ or Over threads ✓ No. of threads per inch 6 ✓ Area supported by each stay 409.5 sq. in.

Working pressure by Rules 191 ✓ Screw stays: Material S ✓ Tensile strength 26.30 ✓

Diameter {At turned off part, 1 3/8" ✓ or Over threads ✓ No. of threads per inch 9 ✓ Area supported by each stay 55.9 sq. in.

Working pressure by Rules 184 ✓ Are the stays drilled at the outer ends 90 ✓ Margin stays: Diameter { At turned off part, or Over threads 15/8" ✓

No. of threads per inch 9 ✓ Area supported by each stay 80.3 sq in Working pressure by Rules 189 ✓

Tubes: Material 900 ✓ External diameter { Plain } 2 1/2" Thickness { 9 WG ✓ } 9/32" No. of threads per inch 9 ✓

Pitch of tubes 33/4, 33/4" ✓ Working pressure by Rules 210 ✓ Manhole compensation: Size of opening in shell plate 16 1/2 x 20 1/2" ✓ Section of compensating ring 2.11 x 2.9" ✓ 19/32" No. of rivets and diameter of rivet holes 38 at 15/16"

Outer row rivet pitch at ends 9 1/4" ✓ Depth of flange if manhole flanged 3 1/4" ✓ 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 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		Manufacturers of	
		Tubes	Steel castings
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	Is a safety valve fitted to every part of the superheater which can be shut off from the boiler		
Rules	Pressure to which the safety valves are adjusted	Working pressure as per	Hydraulic test pressure:
tubes	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

The foregoing is a correct description,
For JOHN G. KINCAID & CO. LIMITED.
J. G. Kincaid, Director, Manufacturer.

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

SEE MACHINERY REPORT.

Are the approved plans of boiler ~~and superheater~~ forwarded herewith *Yes*
(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. 13 Quanta (Ent Rpt 19920)

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

This boiler has been built under Special Survey in accordance with the approved plan & the workmanship & material are of good quality. Boiler now securely fitted on board.

Survey Fee *Charge d.* £

Travelling Expenses (if any) on Machinery Del.

When applied for, 19

When received, 19

W^{gill} Gordon. Minchline

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 28 JUL 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT.