

# REPORT ON BOILERS.

No. 20414.

Received at London Office

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Date of writing Report 5. 1. 1939 When handed in at Local Office 18-3-1939 Port of Liverpool

No. in Reg. Book. Survey held at Liverpool Date, First Survey 11<sup>th</sup> April 1938 Last Survey 17-3-1939

on the

M/S "Karo"

(Number of Visits ) Tons {Gross Net

Master Built at Glasgow By whom built Blythwood Stacks Yard No. 53 When built 1939

Engines made at Liverpool By whom made John & Macaulay Engine No. 1120 When made 1939

Boilers made at ditto By whom made ditto Boiler No. 1120 When made 1939

Nominal Horse Power Owners Western Oil Shipping Co Ltd Port belonging to London

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

Manufacturers of Steel Colville & Steel Co of Scotland (Letter for Record S)

Total Heating Surface of Boilers 3302 # Is forced draught fitted yes Coal or Oil fired oil

No. and Description of Boilers 2 Single Ended Working Pressure 180 lb

Tested by hydraulic pressure to 320 Date of test 5-10-38 No. of Certificate 2166 Can each boiler be worked separately yes

Area of Firegrate in each Boiler Oil Fired No. and Description of safety valves to each boiler 2 Colclur's Improved High Lift

Area of each set of valves per boiler {per Rule 5.3" as fitted 6.3" 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 yes

Smallest distance between boilers or uptakes and bunkers or woodwork Well clear Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating Fixed in tank deck - aft end of E.R. Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 12-6 Length 11-0 Shell plates: Material S Tensile strength 29.33

Thickness 11/32" Are the shell plates welded or flanged yes Description of riveting: circ. seams {end DR inter. 3"003"

long. seams TRDBS Diameter of rivet holes in {circ. seams 11/16" long. seams 11/32" Pitch of rivets 7"

Percentage of strength of circ. end seams {plate 64.6 rivets 45.3 Percentage of strength of circ. intermediate seam {plate 85.26 rivets 86

Percentage of strength of longitudinal joint {plate 85.26 rivets 86 Working pressure of shell by Rules 183

Thickness of butt straps {outer 13/16" inner 15/16" No. and Description of Furnaces in each Boiler 2 Deightons

Material S Tensile strength 26.30 Smallest outside diameter 3-9 1/8"

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

Dimensions of stiffening rings on furnace or c.c. bottom yes Working pressure of furnace by Rules 181

End plates in steam space: Material S Tensile strength 26.30 Thickness 11/8" Pitch of stays 19 x 16 1/2"

How are stays secured D. Nuts Working pressure by Rules 185

Tube plates: Material {front S back S Tensile strength { 26.30 Thickness { 15/16" 11/16"

Mean pitch of stay tubes in nests 9 1/2" Pitch across wide water spaces 13 1/2" Working pressure {front 184 back 185

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

at centre 9 x 3/4 (2) Length as per Rule 2-9 5/8 Distance apart 8 1/2" No. and pitch of stays

in each 5 at 4 3/4" Working pressure by Rules 202 Combustion chamber plates: Material S

Tensile strength 26.30 Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom 7/8"

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

Working pressure by Rules 190 Front plate at bottom: Material S Tensile strength 26.30

Thickness 15/16" Lower back plate: Material S Tensile strength 26.30 Thickness 13/16"

Pitch of stays at wide water space 14" Are stays fitted with nuts or riveted over Nuts

Working Pressure 214 Main stays: Material S Tensile strength 28.32

Diameter {At body of stay, 2 3/4" or 2 1/4" No. of threads per inch 6 Area supported by each stay 213.5"

Working pressure by Rules 208 Screw stays: Material S Tensile strength 26.230

Diameter {At turned off part, 1 3/8" or 1 1/2" No. of threads per inch 9 Area supported by each stay 53.1"



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Working pressure by Rules 180 Are the stays drilled at the outer ends 90 Margin stays: Diameter 1 5/8" At turned off part. or Over threads.

No. of threads per inch 9 Area supported by each stay 44.5" Working pressure by Rules 193

Tubes: Material S External diameter 2 1/2" Thickness 11/32 + 5/16" No. of threads per inch 9

Pitch of tubes 3 7/8 x 3 3/4" Working pressure by Rules 183 Manhole compensation: Size of opening in shell plate 20 1/2 x 16 1/2" Section of compensating ring 2-10 1/2 + 2-6 1/2 + 1 1/8" No. of rivets and diameter of rivet holes 36 at 1 1/4"

Outer row rivet pitch at ends 8 3/16" Depth of flange if manhole flanged 3 1/2" 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 forgings Steel castings Internal diameter and thickness of tubes

Number of elements Material of tubes Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

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 of 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. KENCAID & CO. LIMITED.  
*[Signature]* Director. Manufacture

Dates of Survey During progress of work in shops - - Are the approved plans of boiler and superheater forwarded herewith Yes (If not state date of approval.)

while building During erection on board vessel - - - Total No. of visits

*See Machinery Report*

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 Rules & the approved plans. Materials & workmanship are good: they have been properly fitted in the vessel, examined under steam & safety valves adjusted as above. This Report accompanies that on the Machinery.*

*In Achy. Rpt.*

Survey Fee ... .. £ — : — } When applied for, 19

Travelling Expenses (if any) £ — : — } When received, 19

For *W. G. Franklin's self* *[Signature]*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 21 MAR 1939

Assigned SEE ACCOMPANYING MACHINERY REPORT.

