Rpt. 5a.

REPORT ON BOILERS.

JUN -7 1938

No. M 26523

Received at London Office FEB 16 1938

Date of writing Report ____ 192 ____ When handed in at Local Office ____ 192 ____ Port of Rotterdam

No. in Reg. Book. Survey held at Flushing Date, First Survey 19.1.37 Last Survey 17.12.1937

on the M.V. "Opalia" (Number of Visits 17.) Tons Gross 6195 Net 3596

Master ____ Built at Amsterdam By whom built Ned Dok My Yard No. 67 When built 1930

Engines made at Amsterdam By whom made N.V. Werkspoor Engine No. ~~706~~ 707 (see letter) When made 1938

Boilers made at Flushing By whom made Kon My. De Schelde Boiler No. 1043 When made 1937

Nominal Horse Power 377. Owners Anglo Saxon Petroleum Co Ltd. Port belonging to London.

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

Manufacturers of Steel The Steel Co of Scotland (Letter for Record S)

Total Heating Surface of Boilers 2560 ☐ft Is forced draught fitted yes Coal or Oil fired Oil

No. and Description of Boilers One multitubular marine boiler **Working Pressure** 180 lb

Tested by hydraulic pressure to 320 lbs Date of test 17.12.37 No. of Certificate 1005 Can each boiler be worked separately —

Area of Firegrate in each Boiler — No. and Description of safety valves to each boiler 2 spring loaded

~~Area~~ diam. of each set of valves per boiler {per Rule —, as fitted 90 mm} Pressure to which they are adjusted 180 lb. 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 Over 2 feet Is oil fuel carried in the double bottom under boilers —

Smallest distance between shell of boiler and tank top plating placed on platform on after side of motor room. Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 4400 mm Length 3468 mm **Shell plates:** Material S.M. Steel Tensile strength 46.8 - 52 Kg/mm²

Thickness 29 mm Are the shell plates welded ~~or flanged~~ Welded at outer ends in way of butt straps Description of riveting: circ. seams {end lap 2 x 210., inter. —}

long. seams Double butt straps 3 x 210 Diameter of rivet holes in {circ. seams 30 mm, long. seams 30 mm} Pitch of rivets {84 mm, 200 mm}

Percentage of strength of circ. end seams {plate 65%, rivets 50%} Percentage of strength of circ. intermediate seam {plate —, rivets —}

Percentage of strength of longitudinal joint {plate 85%, rivets 85%, combined 87%} Working pressure of shell by Rules 12.8 Kg/mm² calc

Thickness of butt straps {outer 25 mm, inner 25 mm} **No. and Description of Furnaces in each Boiler** 3 Morrison patent

Material S.M. Steel Tensile strength 41.47 Kg/mm² Smallest outside diameter 1130 mm

Length of plain part {top —, bottom —} Thickness of plates {crown, bottom} 15 mm Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom — Working pressure of furnace by Rules 13.22 Kg/cm²

End plates in steam space: Material S.M. Steel Tensile strength 41.47 Kg/mm² Thickness 29.5 mm Pitch of stays 440 - 450 mm

How are stays secured Screwed in plates with nuts outside ~~Working~~ pressure by Rules 12.65 Kg/cm²

Tube plates: Material {front S.M. Steel, back S.M. Steel} Tensile strength {41-47 Kg/mm², 41.47 Kg/mm²} Thickness {23 mm, 22 mm}

Mean pitch of stay tubes in nests 196 x 300 mm Pitch across wide water spaces 360 mm Working pressure {front 17.8 Kg/cm², back —}

Girders to combustion chamber tops: Material S.M. Steel Tensile strength 44-50 Kg/mm² Depth and thickness of girder at centre 220 x 2 x 19 mm Length as per Rule 776 mm Distance apart 220 mm No. and pitch of stays in each 3 à 200 mm Working pressure by Rules 17.2 Kg/cm² **Combustion chamber plates:** Material S.M. Steel

Tensile strength 41.47 Kg/mm² Thickness: Sides 16 mm Back 19 mm Top 18 mm Bottom 25 mm

Pitch of stays to ditto: Sides 250 mm Back 200 x 195 mm Top 200 x 220 mm Are stays fitted with nuts or riveted over Rivetted over

Working pressure by Rules 15.3 Kg/cm² **Front plate at bottom:** Material S.M. Steel Tensile strength 41-47 Kg/mm²

Thickness 23 mm **Lower back plate:** Material S.M. Steel Tensile strength 41-47 Kg/mm² Thickness 23 mm

Pitch of stays at wide water space 366 mm. Are stays fitted with nuts or riveted over Fitted with nuts

Working Pressure 17.7 Kg/cm² **Main stays:** Material S.M. Steel Tensile strength 44-50 Kg/mm²

Diameter {At body of stay, or Over threads 3" / 3¼"} No. of threads per inch 9 Area supported by each stay 198000 mm²

Working pressure by Rules 15.5 Kg/cm² **Screw stays:** Material S.M. Steel Tensile strength 41-47 Kg/mm²

Diameter {At turned off part, or Over threads 1⅜" / 1½"} No. of threads per inch 9 10. Area supported by each stay 40000 mm²

Working pressure by Rules 14.1 Kg/cm² Are the stays drilled at the outer ends Yes Margin stays: Diameter {At turned off part or Over threads} 1 7/16" 1 5/8"
No. of threads per inch 9 Area supported by each stay 50091 mm² Working pressure by Rules 14.1 Kg/cm²
Tubes: Material Iron External diameter {Plain 2 1/4 Stay 2 1/4} Thickness {N°9 LSG 5/16" & 9/16"} No. of threads per inch 9
Pitch of tubes 98 x 100 mm Working pressure by Rules 215 lbs **Manhole compensation:** Size of opening in shell plate 370 x 470 mm Section of compensating ring 780 x 880 x 32 mm No. of rivets and diameter of rivet holes 54 à 32 mm
Outer row rivet pitch at ends 220 mm Depth of flange if ~~manhole~~ compensating ring flanged 100 mm **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 – 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 –, 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 23 inclusive for boilers been complied with – .

N.V. Kon. Mij. „De Schelde" [signature] The foregoing is a correct description,
Manufacturer.

Dates of Survey while building		
During progress of work in shops	19/5 27/5 19/6 22/6 29/6 21/7 7/9 16/9 24/9 8/10 14/10 28/10 12/11 16/11 1/12 9/12 17/12	Are the approved plans of boiler and superheater forwarded herewith Retained (If not state date of approval.)
During erection on board vessel	–	Total No. of visits 17

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been made in accordance with the approved plan, Secretary's letter and Society's Rules, material tested as required and workmanship good.
Safety valves adjusted under steam to 180 lb. thickness of washers 19-20 m/m.

[signature]

Survey Fee ... ... f 205.00 When applied for, 192
Travelling Expenses (if any) f 37.00 When received, 192
Amount received as per Secretary's letter 5-3-1938

[signature] ~~Engineer~~ Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 24 JUN 1938

Assigned See Ans. F.E. 15288