

## REPORT ON BOILERS.

No. 25269

Received at London Office 22 FEB 1937

Date of writing Report 5-2-1937 When handed in at Local Office

192

Port of Rotterdam

No. in Reg. Book.

Survey held at Rotterdam

Date, First Survey 30.4.36

Last Survey 15-10-1936

on the Donkey boiler Motor Tanker **ENSIS**

(Number of Visits 16)

Gross 6107 Tons  
Net

Master ☒ Built at Rotterdam By whom built Rott Drogd My Yard No. 195 When built 1936  
 Engines made at Bengelo By whom made Gebr. Hork Engine No. When made 1936  
 Boiler made at Rotterdam By whom made Rott Drogd My Boiler No. 532 When made 1936  
 Nominal Horse Power 37½ Owners Anglo-Taxon Petr Co. Ltd Port belonging to London

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

Manufacturers of Steel The Steel Company of Scotland (Letter for Record S ✓)  
 Total Heating Surface of Boilers 2560 sq 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 lb Date of test 15-10-36 No. of Certificate 983 Can each boiler be worked separately ✓  
 Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 2 spring loaded ✓  
 Diam of each set of valves per boiler (per Rule 16.40) Pressure to which they are adjusted 180 Are they fitted with easing gear Yes ✓  
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Thickness of adjusting washers 1.19 mm ✓  
 Smallest distance between boilers or uptakes and bunkers or woodwork over 24" 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 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 Description of riveting: circ. seams end lap 2 x riv ✓  
 long. seams Double butt straps 3 x riv Diameter of rivet holes in circ. seams 30 mm Pitch of rivets 84 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/cm² ✓  
 Thickness of butt straps outer 25 mm inner 25 mm No. and Description of Furnaces in each Boiler 3 Monsons patent 39. ✓  
 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 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 plate 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 Thickness 23 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 10 mm Back 19 mm Top 18 mm Bottom 25 mm ✓  
 Pitch of stays to ditto: Sides 200 mm Back 200 x 195 mm Top 200 x 220 mm Are stays fitted with nuts or riveted over Riveted 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, 3" No. of threads per inch 9 Area supported by each stay 198000 mm² ✓  
 Over threads 3 1/4" Screw stays: Material S. M. Steel Tensile strength 41-47 kg/mm² ✓  
 Working pressure by Rules 15.5 kg/cm² Diameter At turned off part, 1 7/8" No. of threads per inch 9 Area supported by each stay 40000 mm² ✓  
 Over threads 1 1/2"



Working pressure by Rules 14.1 kg/cm<sup>2</sup> Are the stays drilled at the outer ends yes Margin stays: Diameter { At turned off part, 1 1/16" or Over threads 1 7/8" ✓  
No. of threads per inch 9 Area supported by each stay 50091 mm<sup>2</sup> Working pressure by Rules 14.1 kg/cm<sup>2</sup>  
Tubes: Material Iron External diameter { Plain 2 3/4" ✓ Stay 2 3/4" ✓ Thickness EN 9 459 No. of threads per inch 9  
Pitch of tubes 98 x 110 mm Working pressure by Rules 2.15 kg/cm<sup>2</sup> Manhole compensation: Size of opening in shell plate 370 x 470 mm Section of compensating ring 780 x 880 x 32 mm of rivets and diameter of rivet holes 54 to 52 mm  
Outer row rivet pitch at ends 220 mm Depth of flange if ~~manhole~~ <sup>compensating ring</sup> 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 yes

ROTTERDAMSCH DROOGBOEK MAATSCHAPPIJ  
Directeur  
H. Knap

The foregoing is a correct description,  
Manufacturer.

Dates of Survey { During progress of work in shops - - 30/7, 13/8, 15/8, 11/14, 13/14, 19/19, 8/10 Are the approved plans of boiler and superheater forwarded herewith Retained  
while building { During erection on board vessel - - - 14/5, 15/5, 16/6, 16/6, 18/8, 18/10, 11/10 (If not state date of approval.) 8-4-35  
Total No. of visits 16

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been made in accordance with the approved plan, Society's Rules and Secretary's letter, material tested as required and workmanship good

Survey Fee ... £ 105.00 When applied for, 16.2.1935  
Travelling Expenses (if any) £ : : When received, 5.3.1935

J. J. Tehoo  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 26 FEB 1937  
Assigned See other F.E. report