Rpt. 5a.

REPORT ON BOILERS.

No. 1597.

Received at London Office AUG 11 1937

Date of writing Report 7th Aug. 1937. When handed in at Local Office 9th Aug. 1937. Port of Malmö

No. in Reg. Book. 28146 Survey held at Malmö Date, First Survey 10th March Last Survey 3rd Aug. 1937. (Number of Visits 36.)

on the Single Screw Motor Tanker "KONGSGAARD" Tons Gross 9467 Net 5677

Master — Built at Malmö By whom built Kockums M.V.A.-B. Yard No. 196 When built 1937.

Engines made at Malmö By whom made Kockums M.V.A.-B. Engine No. 155 When made 1937.

Boilers made at Malmö By whom made Kockums M.V.A.-B. Boiler No. 944/5 When made 1937

Nominal Horse Power 1361 (1358) Owners Skibs A/S Solvang Port belonging to Stavanger.

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

Manufacturers of Steel Witkowitzer Bergbau & Eisenhütten Gewerkschaft (Letter for Record S. ✓)

Total Heating Surface of Boilers 2 × 131 = 262 m² ✓ Is forced draught fitted Yes ✓ Coal or Oil fired Oil ✓

No. and Description of Boilers Two S.D. ✓ **Working Pressure** 12 kg. cm⁻² ✓

Tested by hydraulic pressure to 306 lbs. ✓ Date of test 16-6-37 No. of Certificate 76 & 77 Can each boiler be worked separately Yes ✓

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

Area of each set of valves per boiler { per Rule 6300 mm² / as fitted 7697 mm² ✓ } Pressure to which they are adjusted 175 lbs ✓ 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 O.T. side bunkers ~~or woodwork~~ 12240 mm ✓ Is oil fuel carried in the ~~double bottom~~ deep tanks under boilers Yes

Smallest distance between shell of boiler and tank top plating 600 mm. ✓ Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 3405 mm ✓ Length extr. 3600 mm ✓ **Shell plates:** Material Steel ✓ Tensile strength 44-50 kg. mm⁻² ✓

Thickness 22.5 mm. ✓ Are the shell plates welded or flanged No ✓ Description of riveting: circ. seams { end D.R. / inter. ✓ }

long. seams T.R. Dbl. S. ✓ Diameter of rivet holes in { circ. seams 26 mm. ✓ / long. seams 23.5 mm. ✓ } Pitch of rivets { 83 mm. ✓ / 171.5 mm. ✓ }

Percentage of strength of circ. end seams { plate 68.6 % / rivets 46.7 % } Percentage of strength of circ. intermediate seam { plate ✓ / rivets ✓ }

Percentage of strength of longitudinal joint { plate 86.3 % / rivets 86.2 % / combined 89.8 % } Working pressure of shell by Rules 12.14 kg. cm⁻² ✓

Thickness of butt straps { outer 17 mm. / inner 20 mm. ✓ } **No. and Description of Furnaces in each Boiler** Two - Corrugated. ✓

Material Steel ✓ Tensile strength 41.7 - 42.0 kg. mm⁻² Smallest outside diameter 1076 mm. ✓

Length of plain part { top ✓ / bottom ✓ } Thickness of plates { ~~crown~~ / ~~bottom~~ 13 mm. ✓ } Description of longitudinal joint Welded. ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 13.5 kg. cm⁻²

End plates in steam space: Material Steel ✓ Tensile strength 44.4 - 46.3 kg. mm⁻² Thickness 22 mm. ✓ Pitch of stays 350 × 406 mm.

How are stays secured Double nuts and washers ✓ Working pressure by Rules 13 kg. cm⁻² ✓

Tube plates: Material { front Steel / back " } Tensile strength { 44.6 - 46.3 kg. mm⁻² / 45.4 kg. mm⁻² } Thickness { 22 mm. ✓ / 21 mm. ✓ }

Mean pitch of stay tubes in nests 240 mm. ✓ Pitch across wide water spaces 330 mm. Working pressure { front 14.5 kg. cm⁻² ✓ / back 14.3 kg. cm⁻² ✓ }

Girders to combustion chamber tops: Material Steel ✓ Tensile strength 44-50 kg. mm⁻² Depth and thickness of girder

at centre 2 (180 × 20) mm. ✓ Length as per Rule 735 mm. ✓ Distance apart 210 mm. ✓ No. and pitch of stays

in each 2 - 228 mm. ✓ Working pressure by Rules 15.6 kg. cm⁻² **Combustion chamber plates:** Material Steel

Tensile strength 41-47 kg. mm⁻² ✓ Thickness: Sides 18 mm. ✓ Back 18 mm. ✓ Top 18 mm. ✓ Bottom 18 mm. ✓

Pitch of stays to ditto: Sides 228 × 180-190 mm. ✓ Back 216 × 203 mm. Top 228 × 210 mm. ✓ Are stays fitted with nuts or riveted over Both ✓

Working pressure by Rules 12 kg. cm⁻² ✓ **Front plate at bottom:** Material Steel ✓ Tensile strength 44.6 - 46.3 kg. mm⁻² ✓

Thickness 22 mm. ✓ **Lower back plate:** Material Steel ✓ Tensile strength 44.4 - 45.7 kg. mm⁻² Thickness 22 mm. ✓

Pitch of stays at wide water space 216 × 330 mm. ✓ Are stays fitted with nuts or riveted over Nuts. ✓

Working Pressure 17.8 kg. cm⁻² ✓ **Main stays:** Material Steel ✓ Tensile strength 44-50 kg. mm⁻²

Diameter { At body of stay, 2 — / Over threads 2 3/8" & 3" ✓ } No. of threads per inch 6 ✓ Area supported by each stay 142100 mm² ✓

Working pressure by Rules 12.4 kg. cm⁻² **Screw stays:** Material Steel Tensile strength 41-47 kg. mm⁻² ✓

Diameter { At turned off part, or / Over threads } 34 & 37 mm. ✓ No. of threads per inch 9 ✓ Area supported by each stay 43320 mm² ✓

Working pressure by Rules 12.9 kg. cm^{-2} *Are the stays drilled at the outer ends* No *Margin stays: Diameter* {At turned off part / or Over threads} 34 & 37 mm

No. of threads per inch 9 *Area supported by each stay* 57560 mm^2 *Working pressure by Rules* 12 kg. cm^{-2}

Tubes: *Material* Steel *External diameter* {Plain 2½" / Stay 2½"} *Thickness* {3.25 mm. / 8 mm.} *No. of threads per inch* 9.

Pitch of tubes 89 × 92 mm *Working pressure by Rules* 12.5 & 15 kg. cm^{-2} **Manhole compensation:** *Size of opening in shell plate* 400 × 500 mm *Section of compensating ring* 12000 mm^2 *No. of rivets and diameter of rivet holes* 44-26 mm.

Outer row rivet pitch at ends 190 mm. *Depth of flange if manhole flanged* 83 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 forgings / 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* *forgings and 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,

KOCKUMS MEKANISKA VERKSTADS AKTIEBOLAG
S. Lundqvist *Manufacturer*

Dates of Survey while building	
During progress of work in shops	10/3, 12/3, 16/3, 25/3, 31/3, 1/4, 5/4, 9/4, 13/4, 19/4, 21/4, 29/4, 30/4, 3/5, 5/5, 8/5, 11/5, 13/5, 14/5, 18/5, 19/5, 21/5, 25/5, 27/5, 31/5, 5/6, 15/6, 16/6, 1/7-1937.
During erection on board vessel	9/7, 10/7, 14/7, 21/7, 26/7, 29/7, 3/8-1937.

Are the approved plans of boiler ~~and superheater~~ forwarded herewith 6-4-193
(If not state date of approval.)

Total No. of visits 36.

Is this Boiler a duplicate of a previous case Yes *If so, state Vessel's name and Report No.* M/T "HAVKONG", Rpt. No. 1524

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

These donkey boilers have been built under special survey in accordance with the Rules and the approved plans.

The materials used have been tested as per Rule and the workmanship is good.

A waste heat boiler, see Hamburg report No. 22366, heated by exhaust gas from top of main engine cylinders has also been installed. A double 1½" safety valve is fitted on this boiler and adjusted to the safe working pressure.

Survey Fee ... ... £ See Rpt. 46! When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

A. Sundén, A. Börring
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 17 AUG 1937

Assigned See Mmo. F.E. 1597