

REPORT ON BOILERS.

No. 1524.

Received at London Office 14 JAN 1937

Date of writing Report 9th Jan., 1937. When handed in at Local Office 12th Jan., 1937. Port of Mahmō.

No. in Survey held at Reg. Books Mahmō Date, First Survey 3rd Sept. 1936 Last Survey 5th Jan., 1937.

88569. on the Single Screw Motor Tanker "HAKKONG" (Number of Visits 35) Gross 9666 Tons Net 5714

Master _____ Built at Mahmō By whom built Kockemms M. V. A/S Yard No. 192 When built 1937

Engines made at Mahmō By whom made Kockemms M. V. A/S Engine No. 147 When made 1937

Boilers made at Mahmō By whom made Kockemms M. V. A/S Boiler No. 936/3 When made 1937

Nominal Horse Power 1361 Owners A/S Stavtor Port belonging to Oslo

1358

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wittkornitzer Eisen- u. Maschinenbau-Gesellschaft (Letter for Record S.)

Total Heating Surface of Boilers $2 \times 131 = 262 \text{ m}^2$ Is forced draught fitted yes Coal or Oil fired Oil

No. and Description of Boilers Two SB. Working Pressure 12 kg. cm²

Tested by hydraulic pressure to 306 lbs. Date of test 14-11-1936 No. of Certificate 72 & 73 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 Pressure to which they are adjusted 175 lbs. Are they fitted with easing gear yes
as fitted 7697

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓

Smallest distance between boilers on uptakes and bunkers on woodwork O.F. side 1220 mm. Is oil fuel carried in the 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 3400 mm. Length extr. 3600 mm. Shell plates: Material Steel Tensile strength 44-50 kg. mm²

Thickness 22.5 mm. Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R.
long. seams T.R. Sbl. S. Diameter of rivet holes in { circ. seams 26 mm. Pitch of rivets { 83 mm.
long. seams 23.5 " { 171.5 "

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

Percentage of strength of longitudinal joint { plate 86.3 % ✓ Working pressure of shell by Rules 12.14 kg. cm²
rivets 86.2 % ✓
combined 89.8 % ✓

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

Material Steel ✓ Tensile strength 41.7 - 44.0 kg. mm² Smallest outside diameter 1076 mm.

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

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 13.5 kg. cm²

End plates in steam space: Material Steel ✓ Tensile strength 42.7 - 46.6 kg. mm² Thickness 22 mm. Pitch of stays 350 x 406 mm.

How are stays secured Double nuts and washers ✓ Working pressure by Rules 13 kg. cm² ✓

Tube plates: Material { front Steel ✓ Tensile strength { 42.8 - 43.2 kg. mm² Thickness { 22 mm. ✓
back " ✓ { 43.7 " " " { 21 " ✓

Mean pitch of stay tubes in nests 240 mm. Pitch across wide water spaces 330 mm. Working pressure { front 14.5 kg. cm² ✓
back 14.3 " ✓

Girders to combustion chamber tops: Material Steel ✓ Tensile strength 44-50 kg. mm² Depth and thickness of girder at centre 2 (180 x 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. cm² ✓ Combustion chamber plates: Material Steel ✓

Tensile strength 41-47 kg. mm² ✓ Thickness: Sides 18 mm. ✓ Back 18 mm. ✓ Top 18 mm. ✓ Bottom 18 mm. ✓

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

Working pressure by Rules 12 kg. cm² ✓ Front plate at bottom: Material Steel ✓ Tensile strength 42.8 - 43.2 kg. mm² ✓

Thickness 22 mm. ✓ Lower back plate: Material Steel ✓ Tensile strength 42.7 - 46.6 kg. mm² Thickness 22 mm. ✓

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

Working Pressure 17.8 kg. cm² ✓ Main stays: Material Steel ✓ Tensile strength 44-50 kg. mm² ✓

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

Working pressure by Rules 12.4 kg. cm² ✓ Screw stays: Material Steel ✓ Tensile strength 41-47 kg. mm² ✓

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

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, $34 \times 37 \text{ mm}$.
 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 $2 \frac{1}{2}''$ ✓ Thickness { 3.25 mm . No. of threads per inch 9
 Pitch of tubes $89 \times 92 \text{ mm}$ Working pressure by Rules $12.5 \text{ \& } 15 \text{ kg. cm}^2$ ✓ Manhole compensation: Size of opening in
 shell plate $400 \times 500 \text{ mm}$ Section of compensating ring 12000 mm^2 ✓ No. of rivets and diameter of rivet holes $44 \times 26 \text{ mm}$.
 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 Manufacturer.

Dates of Survey { During progress of work in shops - $3/9, 7/9, 14/9, 17/9, 22/9, 23/9, 28/9, 30/9, 2/10, 3/10, 5/10, 9/10, 10/10, 12/10$.
 while building { During erection on board vessel - $1/12, 3/12, 7/12, 10/12, 16/12, 17/12, 18/12, 1936, 5/11, 1937$.
 Are the approved plans of boiler and superheater forwarded herewith $30-8-1935$.
 (If not state date of approval.)
 Total No. of visits 35 .

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "BRALANTA", Report No. 1495.

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

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

Osunden A. Boring.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 23 JAN 1937
 Assigned See other F. E. rpt.

