

REPORT ON BOILERS.

No. 12715

13 JUN 1949

Received at London Office

Date of writing Report 3rd June 1949 When handed in at Local Office 1949 Port of Copenhagen

No. in Reg. Book. 91565 Survey held at Nalborg Date, First Survey 17th December 1947 Last Survey 18th May 1949

on the Steel Single Screw Steamer KAMMA DAN (Number of Visits 47) Gross 3490.63 Tons Net 1944.39

Master ✓ Built at Nalborg By whom built Nalborg Verft A/S Yard No. 76 When built 1949

Engines made at Copenhagen By whom made A/S Atlas Engine No. 892 When made 1949

Boilers made at Nalborg By whom made Nalborg Verft A/S Boiler No. 1101 When made 1949

Nominal Horse Power 417.4 Owners Rederiet "Ocean" A/S J. Launby Port belonging to Esbjerg

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

CENT. COMB. CHAMBR. BOGK PLATES: Applied by Sindingham Steel Co. Copenhagen REMAINING PLATES

Manufacturers of Steel STAYS-SCREW STAYS-TUBES: Wilkovic Steel Works Nat. Corporation, Wilkovic (Letter for Record S)

Total Heating Surface of Boilers 428.84² ~ 4615.6² Is forced draught fitted yes Coal or Oil fired oil fired

No. and Description of Boilers Two off single ended return multitubular Working Pressure 235 lbs/10"

Tested by hydraulic pressure to 28.3 kg/cm² Date of test 17.12.1948 No. of Certificate 721-722 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 off improved high lift "Cockburn" valves

Area of each set of valves per boiler per Rule 7050:2 = 352.5² as fitted 5104² 1/4" Pressure to which they are adjusted 235 lbs/10" Are they fitted with casing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No donkey boiler fitted

Smallest distance between boilers or uptakes and bunkers or woodwork 55.5 1/4" Is oil fuel carried in the double bottom under boilers yes

Smallest distance between shell of boiler and tank top plating 456 1/4" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 4100 1/4" Length 3300 1/4" Shell plates: Material Siemens M. Steel Tensile strength 47.5-52.9 kg/cm²

Thickness 34 1/4" Are the shell plates welded or flanged No Description of riveting: circ. seams lap joint end double riveting

long. seams double butt strap Diameter of rivet holes in circ. seams 39 1/4" long. seams 36 1/4" Pitch of rivets 110.1 1/4" 237 1/4"

Percentage of strength of circ. end seams plate 64.5 rivets 48.4 Percentage of strength of circ. intermediate seam plate 84.9 rivets 90.1

Percentage of strength of longitudinal joint plate 84.9 rivets 90.1 Working pressure of shell by Rules 16.6 kg/cm² ~ 235.7 lbs/10"

Thickness of butt straps outer 26 1/4" inner 29 1/4" No. and Description of Furnaces in each Boiler Three off - Jeighdon's corrugated section

Material Siemens Martin Steel Tensile strength 41.4-45.1 kg/cm² Smallest outside diameter 934 1/4"

Length of plain part top 17 1/4" bottom 17 1/4" Thickness of plates top 17 1/4" bottom 17 1/4" Description of longitudinal joint ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 18.7 kg/cm² (500-520 1/4")

End plates in steam space: Material Siemens M. Steel Tensile strength 43.7-47.3 kg/cm² Thickness 33 1/4" Pitch of stays 40 1/4"

How are stays secured Screwed in both plates with washers in & outside Working pressure by Rules 17.4 kg/cm²

Tube plates: Material front Siemens Martin Steel back Siemens Martin Steel Tensile strength 42.5-46.9 kg/cm² 43.9-46.7 kg/cm² Thickness 27 1/4" 22 1/4"

Mean pitch of stay tubes in nests 262.5 1/4" Pitch across wide water spaces 380 1/4" Working pressure front 16.5 kg/cm² back 17.9 kg/cm²

Girders to combustion chamber tops: Material Siemens M. Steel Tensile strength 45.5 kg/cm² Depth and thickness of girder

at centre 200 1/4" x 25 1/4" Length as per Rule 72.7 1/4" Distance apart 168 1/4" No. and pitch of stays

in each Welded along the foot Working pressure by Rules 17.1 kg/cm² Combustion chamber plates: Material Siemens M. Steel

Tensile strength 41.5-46.8 kg/cm² Thickness: Sides 18 1/4" Back 18 1/4" Top 18 1/4" Bottom 22 1/4"

Pitch of stays to ditto: Sides 200 1/4" x 230 1/4" Back 210 1/4" x 250 1/4" Top 168 1/4" Are stays fitted with nuts or riveted over riveted outside shell otherwise welded

Working pressure by Rules TOP 33.4 kg/cm² FRONT 33.4 kg/cm² BACK 25.2 kg/cm² Front plate at bottom: Material Siemens M. Steel Tensile strength 42.5-46.9 kg/cm²

Thickness 27 1/4" Lower back plate: Material Siemens M. Steel Tensile strength 43.0-46.6 kg/cm² Thickness 25 1/4"

Pitch of stays at wide water space 380 1/4" x 250 1/4" Are stays fitted with nuts or riveted over Nuts inside

Working pressure 17.5 kg/cm² Main stays: Material Siemens Martin Steel Tensile strength 48.1-50.3 kg/cm²

diameter At body of stay 3 1/4" Over threads 3 1/4"-3 1/2" No. of threads per inch 6 Area supported by each stay 20.000 1/4" x 15.1200 1/4"

Working pressure by Rules 18.2 kg/cm² Screw stays: Material Siemens M. Steel Tensile strength 42.4-46.1 kg/cm²

diameter At turned off part 1 3/4" Over threads 1 7/8" No. of threads per inch 9 Area supported by each stay 46.000 1/4" x 52.500 1/4"

Working pressure by Rules 19.8 kg/cm^2 Are the stays drilled at the outer ends. *No* ✓ Margin stays: Diameter $50\frac{1}{2}$ CORNERS $2\frac{1}{8}$ ✓ $2\frac{1}{8}$ ✓
No. of threads per inch 9 ✓ Area supported by each stay $67500 \frac{1}{4}$ Working pressure by Rules 18.0 kg/cm^2
Tubes: Material *Stainless Steel* External diameter $3\frac{1}{2}$ ✓ Thickness $8\frac{1}{2}$ ✓ $9.5\frac{1}{2}$ No. of threads per inch 19
Pitch of tubes $105\frac{1}{4} \times 105\frac{1}{4}$ Working pressure by Rules 17.5 kg/cm^2 Manhole compensation: Size of opening 36 ✓ 34 ✓ $39\frac{1}{4}$
shell plate $440\frac{1}{2} \times 540\frac{1}{2}$ Section of compensating ring *flanged* ✓ No. of rivets and diameter of rivet holes 36 ✓ 34 ✓ $39\frac{1}{4}$
Outer row rivet pitch at ends 250 ✓ $200\frac{1}{4}$ ✓ Depth of flange if manhole flanged $105\frac{1}{4}$ ✓ Steam Dome: Material *✓*
Tensile strength *✓* Thickness of shell *✓* Description of longitudinal joint *✓*
Diameter of rivet holes *✓* Pitch of rivets *✓* Percentage of strength of joint *✓*
Internal diameter *✓* Working pressure by Rules *✓* Thickness of crown *✓* No. and diameter *✓*
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 *Vilh. Schmidts patent* Manufacturers of *Stewart & Lloyds Ltd.*
Number of elements 68 Material of tubes *Stainless Steel* Internal diameter and thickness of tubes $16\frac{1}{4}$ ✓ $13\frac{1}{4}$ ✓
Material of headers *Cast steel* ✓ Tensile strength $28-30.15 \text{ tons/in}^2$ Thickness $30\frac{1}{2}$ ✓ $25\frac{1}{2}$ ✓ Can the superheater be shut off and
the boiler be worked separately. *yes* ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler. *yes* ✓
Area of each safety valve $1963\frac{1}{4} \text{ in}^2$ ✓ Are the safety valves fitted with easing gear. *yes* ✓ Working pressure as per
Rules 160 kg/cm^2 ✓ Pressure to which the safety valves are adjusted 16.5 kg/cm^2 ✓ Hydraulic test pressure
tubes 70 kg/cm^2 ✓ forgings and castings 50 kg/cm^2 ✓ and after assembly in place 50 kg/cm^2 ✓ Are drain cocks
valves fitted to free the superheater from water where necessary. *yes* ✓
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with. *yes* ✓

The foregoing is a correct description,

AALBORG VÆRFT A/S

Manufactured

Dates of Survey while building
During progress of work in shops - $1947-12-12-1948-6-2-1948-10-3-11-3-12-3-3-4-6-4-26-4-28-4-29-4-12-5-24-5-25-5-26-2$
During erection on board vessel - $14-10-9-11-11-11-15-11-4-12-15-12-16-12-17-12$
Are the approved plans of boiler and superheater forwarded herewith. (If not state date of approval.)
Total No. of visits 47
 $1949-20-1-4-2-15-2-24-2-4-3$
 $14-3-22-3-29-3-7-4-8-4-26-4-6-5-11-5-16-5-17-5-18-5$

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.)

The boilers and superheaters have been built under special survey in accordance with the requirements of the Rules, the approved plans and the Secretary's letters E dated 12/6.47 - 19/9.47 - 19/3.48 - 14/6.48 - 19/11.48 - 30/11.48. The material has been tested as required by the Rules, and new certificates produced and the workmanship is good.

The boilers and superheaters have been installed on board under special survey and tested under steam as per Rules and found satisfactory.

Arrangement for carrying and burning of oil used as fuel. The installation is made by the builders under special survey and in accordance with the plans approved by the Secretary's letter E dated 28.3.1947. Two units i.e. 2 pressure pumps, 2 oil heaters, 2 suction filters and 2 discharge filters are fitted. Steam heating coils made of solid drawn steel pipes fitted in No 1-2-3-4-6-7 double bottom tanks. The pipes tested by hydraulic pressure to twice the working pressure and found tight.

Survey Fee *Noted on Report 4* : When applied for 19
Travelling Expenses (if any) £ : : When received 19

L. L. L.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 15 JUL 1949*
Assigned *In unib. see J.E. Pfe*