

## REPORT ON BOILERS.

No. 9423.

-4 SEP 1934

Received at London Office

Date of writing Report 18<sup>th</sup> August 1934 When handed in at Local Office

Port of Copenhagen

No. in Survey held at Copenhagen & Odense Date, First Survey 13<sup>th</sup> March Last Survey 15<sup>th</sup> August 1934.  
 Reg. Book. 12035 on the Steel Se. Motor Vessel NORA MÆRSK. (Number of Visits 13.) Gross 6270.70  
 Tons Net 3888.51

Built at Odense By whom built O. Odense Staalvareværk Yard No. 52 When built 1934  
 Engines made at Copenhagen By whom made Asst. Burmeister & Wain Engine No. 2187 When made 1934  
 Boilers made at Copenhagen By whom made Smith, Skjold & Thillemann Boiler No. 649 When made 1934  
 Owners O. S. Sørensen & Sønner af 1912 Port belonging to Copenhagen.

## VERTICAL DONKEY BOILER.

Made at Copenhagen By whom made Smith, Skjold & Thillemann Boiler No. 649 When made 1934 Where fixed in the motor room

Manufacturers of Steel Plates: Colville & Co. Glasgow Tubes: Stuart & Lloyds Ltd. Rivets: Lewis Bros. Copenhagen.

Total Heating Surface of Boiler 127.5 m<sup>2</sup> { oil firing: 59 m<sup>2</sup> gas firing: 68.5 m<sup>2</sup> Is forced draught fitted no Coal or Oil fired oil & exhaust gas

No. and Description of Boilers 1 off vertical multitubular Working pressure 100 lbs/0"

Tested by hydraulic pressure to 200 lbs/0" Date of test 18<sup>th</sup> May 1934 No. of Certificate 553

Area of Firegrate in each Boiler No. and Description of safety valves 2 off direct spring loaded 3" diam

Area of each set of valves per boiler as fitted 14.130" Pressure to which they are adjusted 100 lbs/0" Are they fitted with easing gear yes

State whether steam from main boilers can enter the donkey boiler no main boiler. Smallest distance between boiler or uptake and bunkers

or woodwork Is oil fuel carried in the double bottom under boiler yes Smallest distance between base of boiler and tank top plating

950 m/m Is the base of the boiler insulated yes Largest internal dia. of boiler 2500 m/m Height 5642 m/m

Shell plates: Material S. M. Steel Tensile strength Top: 30.1 lbs/0" Bottom: 30.0 lbs/0" Thickness Top: 14 m/m Bottom: 16 m/m

Are the shell plates welded or flanged no Description of riveting: circ. seams end single inter. single long. seams 2 lbs rivets 2 butt straps

Dia. of rivet holes in { circ. seams 23 m/m Pitch of rivets 57 m/m Percentage of strength of circ. seams { plate 59.6 of Longitudinal joint { plate 77  
 { long. seams 23 m/m { rivets 43.0 { rivets 87  
 in tube plates 56 m/m { combined 83

Working pressure of shell by rules 136 lbs/0" Thickness of butt straps { outer 15 m/m inner 15 m/m

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Spherical Material S. M. Steel

Tensile strength 28.4 lbs/0" Thickness 20 m/m Radius 2286 m/m Working pressure by rules 114 lbs/0"

Description of Furnace: Plain, spherical, or dished crown part conical part spherical Material S. M. Steel Tensile strength 27.5 lbs/0"

Thickness 18 m/m External diameter { top 2136 m/m Length as per rule 700 m/m Working pressure by rules 115 lbs/0"

Pitch of support stays circumferentially and vertically Are stays fitted with nuts or riveted over

Diameter of stays over thread Radius of spherical or dished furnace crown 1000 m/m Working pressure by rule 153 lbs/0"

Thickness of Ogee Ring 50 m/m x 140 m/m Diameter as per rule { D 2500 m/m Working pressure by rule 100 lbs/0"  
 { d 2400 m/m

Combustion Chamber: Material Tensile strength Thickness of top plate

Radius if dished Working pressure by rule Thickness of back plate Diameter if circular

Length as per rule Pitch of stays Are stays fitted with nuts or riveted over

Diameter of stays over thread Working pressure of back plate by rules

Tube Plates: Material { front S. M. Steel Tensile strength 28.9 lbs/0" Thickness 20 m/m Mean pitch of stay tubes in nests 371 m/m

If comprising shell, Dia. as per rule { front 2480 m/m Pitch in outer vertical rows { 380 m/m Dia. of tube holes FRONT { stay 57 m/m BACK { stay 55 m/m

Is each alternate tube in outer vertical rows a stay tube yes Working pressure by rules { front 118 lbs/0" back 118 lbs/0"

Girders to combustion chamber tops: Material Tensile strength

Depth and thickness of girder at centre Length as per rule

Distance apart No. and pitch of stays in each Working pressure by rule

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**Crown stays:** Material                      Tensile strength                      Diameter                      { at body of stay,                      or over threads                       
 No. of threads per inch                      Area supported by each stay                      Working pressure by rules                       
**Screw stays:** Material                      Tensile strength                      Diameter                      { at turned off part,                      or over threads                      No. of threads per inch                       
 Area supported by each stay                      Working pressure by rules                      Are the stays drilled at the outer ends                       
**Tubes:** Material Steel External diameter { plain 5 1/4" 89 m stay 5 1/4" 89 m Thickness { LSG 11 - LSG 10 1/4" 1/4"  
 No. of threads per inch 11 Pitch of tubes 190 m/m Working pressure by rules 155 lbs 10" & 120 lbs 10"  
**Manhole Compensation:** Size of opening in shell plate 320 m x 420 m Section of compensating ring 44 (165 x 18 x 2) No. of rivets and diameter  
 of rivet holes 44 off .23 m Outer row rivet pitch at ends 100 m/m Depth of flange if manhole flanged                       
**Uptake:** External diameter                      Thickness of uptake plate                       
**Cross Tubes:** No.                      External diameters {                      Thickness of plates                     

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes

The foregoing is a correct description,  
SMITH, MYND & RUTEMER  
\$ PUNCHUP Manufacturer.

Dates of Survey { During progress of work in shops - 13/3 - 16/4 - 24/4 - 2/5 - 3/5 - 1934 Is the approved plan of boiler forwarded herewith yes (3 plans)  
 while building { During erection on board vessel - 20/6 - 6/7 - 14/7 - 20/7 - 28/7 - 3/8 - 10/8 - 15/8 - 1934 (If not state date of approval.) Total No. of visits 13.

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey in accordance with the Rules, the approved plans and the requirements contained in the Secretary's letter 24/2 & 7/3 1934  
The material used in construction of the boiler has been tested as required by the Rules as per Certificate produced, and the workmanship is of good description throughout.  
The boiler has been fitted on board the above named vessel and completed to our entire satisfaction.  
An "Eureka" duplex feed pump 135 x 90 x 125 m/m and a feed injector have been installed.  
Recommend the vessel to have notation of D.B. 100 LB.

Survey Fee £ 150.00 : : When applied for, 28.5 19 34  
 Travelling Expenses (if any) £ : : When received, 25.6 19 34

Whiff J. Langille Jones  
 Engineer Surveyor Lloyd's Register of Shipping.

Committee's Minute FRL 14 SEP 1934

Assigned See F.B. Rpt.



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Rpt. 13.  
**RE**  
 Date of writing                       
 No. in S                       
 Reg. Book. 82035  
 Built at                       
 Owners                       
 Electric L                       
 Is the Vess                       
 System of                       
 Pressure of                       
 Direct or                       
 If alternatin                       
 Has the Au                       
 Generator                       
 are they over                       
 Where more                       
 series with ec                       
 Are all term                       
 short circuit                       
 Position o                       
 is the ventil                       
 if situated                       
 are their ax                       
 Earthing,                       
 their respect                       
 Main Swit                       
 a fuse on ec                       
 Switchbo                       
 are they pro                       
 woodwork c                       
 are they con                       
 permanentl                       
 with mica c                       
 and is the                       
 bars                       
 Main Sw                       
 insul                       
 OUTGOING                       
 Instrum                       
 Earth T                       
 2 set                       
 Switches                       
 Joint Bo