

REPORT ON BOILERS.

No. 9869.

Received at London Office

23 MAR 1936

Date of writing Report 10th March 1936 When handed in at Local Office

102

Port of Copenhagen

No. in Reg. Book. 38431 on the Single Sc. Motor Tanker "HENNING MÆRSK" Date, First Survey 1st August 1935 Last Survey 4th March 1936

(Number of Visits 19.)

Tons { Gross 9386
Net 5839Master - Built at Odense By whom built ^{of} Odense Staalskibsværft No. 57 When built 1936

Engines made at Copenhagen By whom made A.B. Burmeister & Wain Engine No. - When made -

Boilers made at Copenhagen By whom made A.B. Burmeister & Wain Boiler No. 1895 When made 1936

Nominal Horse Power - Owners 9/16 of 1912 & 5/16 Sundt & Søn Port belonging to Copenhagen

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Tubes: Uddannelses skolebøger, Sweden. Slags: - Corbilles, Rivets Løsnings Mors, Slag bolle: United Steel Cos.

Manufacturers of Steel Plates: The Steel Co. of Scotland, Furness, Rosely Bridge & Piggott Ltd. (Letter for Record -)

Total Heating Surface of Boilers Oil fired 1615 sq. ft. Gas fired 628 sq. ft. Is forced draught fitted yes Coal or Oil fired & exhaust gas

No. and Description of Boilers 2 off horizontal multitubular Working Pressure 180 lb/sq. in

Tested by hydraulic pressure to 320 lb/sq. in Date of test 12/12/35 No. of Certificate 580-81 Can each boiler be worked separately yes

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 2 off 3 1/2" diam direct spring loaded and fitted with

Area of each set of valves per boiler (per Rule 9270 mm² as fitted 12450 mm²) Pressure to which they are adjusted 180 lb/sq. in 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 tank or woodwork OIL DEPT TANK 2 1/2 m Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating boilers placed on a platform the bottom of the boiler insulated yes

Largest internal dia. of boilers 3850 mm Length 3180 mm Shell plates: Material S. Ch. Steel Tensile strength 30.2-31.1 lb/sq. in

Thickness 26 mm Are the shell plates welded or flanged no Description of riveting: circ. seams 88.24 mm inter. double 219-249

long. seams 266 butt strap 366 rivets Diameter of rivet holes in (circ. seams 29 mm long. seams 28 mm) Pitch of rivets 190 mm

Percentage of strength of circ. end seams (plate 67 rivets 47) Percentage of strength of circ. intermediate seam (plate 67 rivets 47)

Percentage of strength of longitudinal joint (plate 85.3 rivets 95.5 combined 89.6) Working pressure of shell by Rules 191 lb/sq. in

Thickness of butt straps (outer 26 mm inner 26 mm) No. and Description of Furnaces in each Boiler 2 off corrugated, Dighton section

Material S. Ch. Steel Tensile strength 28.3-29.9 lb/sq. in Smallest outside diameter 940 mm

Length of plain part (top - bottom -) Thickness of plates 13 mm Description of longitudinal joint none

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 200 lb/sq. in

End plates in steam space: Material S. Ch. Steel Tensile strength 28.3-30.0 lb/sq. in Thickness 27 mm Pitch of stays 330 x 490 mm

How are stays secured Screwed in both plates, nuts inside & outside Working pressure by Rules 183 lb/sq. in

Tube plates: Material (front S. Ch. Steel back S. Ch. Steel) Tensile strength (front 27.3-29.1 lb/sq. in back 28.3 lb/sq. in) Thickness (front 24 mm back 19 mm)

Mean pitch of stay tubes in nests 228 mm Pitch across wide water spaces 355 mm Working pressure (front 181 lb/sq. in back 224 lb/sq. in)

Girders to combustion chamber tops: Material S. Ch. Steel Tensile strength 29.7 lb/sq. in Depth and thickness of girder

at centre 2 x 160 x 19 mm Length as per Rule 672 mm Distance apart 225 mm No. and pitch of stays

in each 2 off - 224 mm Working pressure by Rules 181 lb/sq. in Combustion chamber plates: Material S. Ch. Steel

Tensile strength 28.9 lb/sq. in Thickness: Sides 17 mm Back 16 mm Top 17 mm Bottom 19 mm

Pitch of stays to ditto: Sides 240 x 215 mm Back 204 x 188 mm Top 224 x 225 mm Are stays fitted with nuts or riveted over c. chambers

Working pressure by Rules 195 lb/sq. in Front plate at bottom: Material S. Ch. Steel Tensile strength 27.3-29.1 lb/sq. in

Thickness 24 mm Lower back plate: Material S. Ch. Steel Tensile strength 27.3-29.1 lb/sq. in Thickness 24 mm

Pitch of stays at wide water space 0 = 492 mm Are stays fitted with nuts or riveted over nuts inside & outside

Working Pressure 228 lb/sq. in Main stays: Material S. Ch. Steel Tensile strength 28.02-29.49 lb/sq. in

Diameter (At body of stay 2 3/4" Over threads 3" - 2 3/4" - 2 1/2") No. of threads per inch 11 Area supported by each stay ab. 172000 mm²

Working pressure by Rules 222 lb/sq. in Screw stays: Material S. Ch. Steel Tensile strength 28-29 lb/sq. in

Diameter (At turned off part 1 1/2" Over threads 1 1/2") No. of threads per inch 11 Area supported by each stay 38352 mm²

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Working pressure by Rules $21626/10^4$ Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part $1 5/4$ " or Over threads }
 No. of threads per inch *11* Area supported by each stay 53000 mm^2 Working pressure by Rules $23226/10^4$
 Tubes: Material *S.M. Steel* External diameter { Plain $2 1/2$ " Stay $2 1/2$ " } Thickness { *1.46 g. 7.89* $5/16$ " $3/8$ " } No. of threads per inch *11*
 Pitch of tubes $90 \times 92 \text{ mm}$ Working pressure by Rules $23026/10^4$ Manhole compensation: Size of opening in shell plate $405 \times 505 \text{ mm}$ Section of compensating ring *flanged* No. of rivets and diameter of rivet holes $46 \text{ off} - 28 \text{ mm}$
 Outer row rivet pitch at ends $195 \times 127 \text{ mm}$ Depth of flange if manhole flanged 88 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 22 inclusive for boilers been complied with *yes*

The foregoing is a correct description,

BURMEISTER & WAINMANN - OSKIBSBYGGERI Manufacturer.

Dates of Survey { During progress of work in shops - - - } $16.2.29.14.30.7.12.14.31.7.19.12.1935$ Are the approved plans of boiler and superheater forwarded herewith $8/2-35$ (If not state date of approval.)
 { During erection on board vessel - - - } $7/1-16/1-28/1-6/2-18/2-26/2-4/3-1936$ Total No. of visits *19*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *The above two dunkley boilers have been constructed & fitted on board under special survey in accordance with the Rules, the approved plans and the requirements contained in the Secretary's letters E dated 9/1.19/11-1934 - 8/2-11/2-15/5-1935 & 16/1-1936.*

The material used in construction has been tested as per certificate now produced and the workmanship is good.

Two "EUREKA" simplex feed pumps, 190 x 140 x 380 mm have been fitted to the boilers.

Recommend the vessel to have notation in the Register Book of 2 DB - 180 lbs when the survey has been completed (Please see accompanying letter)

Survey Fee ... *£n. 550.00*

When applied for, *20.3.1936*

Travelling Expenses (if any) £ *-*

When received, *23.4.1936*

Charles J. Langhorne
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 27 MAR 1936

Assigned

See Cpn. 7E 9869



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