

REPORT ON BOILERS.

No. 10969.

JAN 7 1939

Received at London Office

Date of writing Report

27th December 1938

When handed in at Local Office

10

Port of

Copenhagen

No. in
Reg. Book.

Survey held at

Elsinore and Odense

Date, First Survey

30th May

Last Survey

21st December 1938

(Number of Visits

26)

Tons

Gross 9424.99

Net 5741.81

88925 on the Steel Single Screw Motor Tanker LUCELLUM

Master

Built at

Odense

By whom built

Odense Haalskibe værft

Yard No.

77

When built

1933

Engines made at

Copenhagen

By whom made

F. Burmeister & Wain's Masking- & Løbsbygger

Engine No.

2838

When made

1933

DONKEY

Boilers made at

Elsinore

By whom made

F. Burmeister & Wain's Masking- & Løbsbygger

Boiler No.

921

When made

1938

Nominal Horse Power for full

700

Owners

H. E. Moss & Co. Ltd.

Port belonging to

Liverpool

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

PLATES - FURNACES - STAYS - SCREW STAYS

Manufacturers of Steel TUBES: Uddesholms Arbejdsløst Skole, Sweden. RIVETS: Hinge Bros (Letter for Record 5)

Total Heating Surface of Boilers 4505 sq. ft. ~ 418.8 sq. m. Is forced draught fitted yes Coal or Oil fired yes

No. and Description of Boilers Two off multitubular exhaust gas and oil fired Working Pressure 12.65 kg/cm²

Tested by hydraulic pressure to 320 lbs/sq. in. Date of test 15.9.1938 No. of Certificate 632 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 9308 sq. ft. No. and Description of safety valves to each boiler Two off directly spring loaded

Area of each set of valves per boiler (per Rule 12700 sq. ft. Pressure to which they are adjusted 180 lbs/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 No main boiler fitted

Smallest distance between boilers or uptakes and bunkers or woodwork 8' Is oil fuel carried in the double bottom under boilers yes

Smallest distance between shell of boiler and tank top plating 18" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 3850 1/4" x 12' 7 3/8" Length 3180 1/4" x 10' 5 1/2" Shell plates: Material Siemens M. Steel Tensile strength 46.8 - 50.0 kg/cm²

Thickness 26 1/4" Are the shell plates welded or flanged No Description of riveting: circ. seams (end lap joint) 29 1/4" double riveting

long. seams (double butt strap) 27 1/4" Diameter of rivet holes in (circ. seams) 29 1/4" Pitch of rivets (inter. double riveting) 88.24 1/4"

Percentage of strength of circ. end seams (plate 67.1% rivets 45.1% Percentage of strength of circ. intermediate seam (plate 85.8% rivets 85.5% combined 88.7% Working pressure of shell by Rules 12.78 kg/cm² 181.73 lbs/sq. in.

Percentage of strength of longitudinal joint (plate 85.8% rivets 85.5% combined 88.7% Thickness of butt straps (outer 26 1/4" inner 26 1/4" No. and Description of Furnaces in each Boiler Two off, Brighton's corrugated section

Material Siemens M. Steel Tensile strength 41.9 - 42.2 kg/cm² Smallest outside diameter 940 1/4"

Length of plain part (top 13 1/4" bottom 13 1/4" Thickness of plates (crown 13 1/4" bottom 13 1/4" Description of longitudinal joint

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 14.0 kg/cm² 460 x 350 1/4"End plates in steam space: Material Siemens M. Steel Tensile strength 42.6 - 46.5 kg/cm² Thickness 27 1/4" Pitch of stays 490 x 350 1/4"How are stays secured Screwed in both plates, nuts in - and outside Working pressure by Rules 13.06 kg/cm² 24 1/4"Tube plates: Material (front Siemens M. Steel Tensile strength 44.5 - 46.4 kg/cm² Thickness 19 1/4" back Siemens M. Steel Tensile strength 46.3 - 46.6 kg/cm² Working pressure (front 14.21 kg/cm² back 23.8 kg/cm²

Mean pitch of stay tubes in nests 114 1/4" Pitch across wide water spaces 355 1/4" Depth and thickness of girder

Girders to combustion chamber tops: Material Siemens M. Steel Tensile strength 49.2 kg/cm² Distance apart 180 1/4" - 213 1/4" No. and pitch of staysat centre 160 1/4" - 219 1/4" = 38 1/4" Length as per Rule 672 1/4" Working pressure by Rules 13.78 kg/cm² Combustion chamber plates: Material Siemens M. Steelin each 2 off - 224 1/4" Tensile strength 43.5 - 46.3 kg/cm² Thickness: Sides 17 1/4" Back 16 1/4" Top 17 1/4" Bottom 19 1/4"

Pitch of stays to ditto: Sides (224 x 240) 1/4" x 190 1/4" Back 204 1/4" x 188 1/4" Top 224 1/4" x 180 1/4" - 213 1/4" Are stays fitted with nuts or riveted over outer row, nuts in & out.

Working pressure by Rules TOP: 14.8 kg/cm² Front plate at bottom: Material Siemens M. Steel Tensile strength 44.5 - 46.4 kg/cm² Thickness 24 1/4"Lower back plate: Material Siemens M. Steel Tensile strength 43.2 - 46.5 kg/cm² Thickness 24 1/4" Nuts in - and outside + riveted washers.

Pitch of stays at wide water space a = 564 1/4" Are stays fitted with nuts or riveted over riveted washers.

Working Pressure 13.8 kg/cm² Main stays: Material Siemens M. Steel Tensile strength 44 - 50.3 kg/cm² TOP: 171500 1/4"

Diameter (At body of stay, 3 3/4" 2 1/2" No. of threads per inch 6 Area supported by each stay BOTTOM: 138544 1/4"

Working pressure by Rules TOP: 14.62 kg/cm² BOTTOM: 14.5 kg/cm² Screw stays: Material Siemens M. Steel Tensile strength 44.6 - 45.2 kg/cm² SIDE: 51600 1/4"

Diameter (At turned off part, 1 1/2" SIDE: 1 1/8" No. of threads per inch 9 Area supported by each stay BACK: 38352 1/4"

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SIDES: 13.4 kg/cm²
Working pressure by Rules *BACK 148* Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part, or Over threads *1 3/4"*
No. of threads per inch *9* Area supported by each stay *52546 7/4"* Working pressure by Rules *15.6 kg/cm²*
Tubes: Material *Simon & Schel* External diameter { Plain *2 1/2"* Thickness { *WG No 9* No. of threads per inch *9*
Pitch of tubes *90 3/4" x 92 3/4"* Working pressure by Rules *230 lb/in²* Manhole compensation: Size of opening in shell plate *405 1/4" x 506 1/4"* Section of compensating ring *Flanged* No. of rivets and diameter of rivet holes *46 1/4" - 28 3/4"*
Outer row rivet pitch at ends *127 3/4"* Depth of flange if manhole flanged *75 3/4"* Steam Dome: Material
Tensile strength Thickness of shell Description of longitudinal joint
Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets
Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays
How connected to shell Inner radius of crown Working pressure by Rules
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 *yes*

The foregoing is a correct description,

ACTIESELSKABET

Manufacturer.

Dates of Survey { During progress of work in shops - 1938: 20/17/21/23/30/17/27/5/8/7
while building { During erection on board vessel - 7/11/18/23/14/12/8/12/16/12/17/12/21/12/18
Are the approved plans of boiler and superheater forwarded herewith *No 3/1938*
(If not state date of approval.)
Total No. of visits - *26*

Is this Boiler a duplicate of a previous case *yes* If so, state Vessel's name and Report No. *STIKLESTAD 4 Oslo Copenhagen Report No 10695*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These donkey boilers have been built by Messrs Th. Thoring's Jernskibs-og Maskinbyggeri, Elsinore, and installed on board by the builder Messrs Odense Skibstaktsvaerk, Odense, under special survey and in accordance with the requirements of the Rules, the approved plan and the Secretary's letter E dated 3/6-10/8 and 23/8 1938.*

The material has been tested as required by the Rules as per certificates produced and the workmanship is good.

Recommend the vessel to have notation of 27.B-180 lbs in the Register Book

Survey Fee ... *£ 6.16.00* When applied for, *6.1.39*
Travelling Expenses (if any) *£ 55.00* When received, *23.1.39*

Christian Schauen
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI 13 JAN 1939*
Assigned *See FE machy rpt*