

REPORT ON BOILERS.

No. 10969.

JAN 7 1939

Received at London Office

Date of writing Report 27th December 1928 When handed in at Local Office 10 Port of Copenhagen

No. in Reg. Book. 88925 Survey held at Elsinore and Odense Date, First Survey 30th May Last Survey 21st December 1928

on the Steel Single Screw Motor Tanker LUCELLUM (Number of Visits 26) Tons {Gross 9424.99 Net 5741.81

Master J.M. Odense Built at Odense By whom built Odense Staalvabrik Yard No. 77 When built 1923

Engines made at Copenhagen By whom made H. Burmeister & Wain's Maskin- & Tølbjerg Engine No. 2838 When made 1923

Boilers made at Elsinore By whom made H. Møllers Jernværksteds- & Maskinbyggeri Boiler No. 921 When made 1928

Nominal Horse Power for 500 Owners H. E. Moss & Co. Ltd. Port belonging to Liverpool

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

PLATES - FURNACES - STAYS - SCREW STAYS: Vikboice Mines Steel & Ironworks Corporation
Manufacturers of Steel TUBES: Uddesholms Akerbolag Skopar, Sweden RIVETS: Almg. Bms Copenhagen (Letter for Record 5)

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

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/10" Date of test 15.9.1928 No. of Certificate 631 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 12700 sq ft Pressure to which they are adjusted 180 lbs/2" 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 boiler fits on platform deck 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

long. seams double butt strap Diameter of rivet holes in {circ. seams 29 1/4" Pitch of rivets 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%

Percentage of strength of longitudinal joint {combined 88.7% Working pressure of shell by Rules 12.78 kg/cm² ~ 181.73 lbs/10"

Thickness of butt straps {outer 26 1/4" inner 26 1/4" No. and Description of Furnaces in each Boiler Two off, Dighton's corrugated section

Material Siemens Martin 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" Description of longitudinal joint circ. seams

Dimensions of stiffening rings on furnace or c.c. bottom 14.0 kg/cm² Working pressure of furnace by Rules 14.0 kg/cm²

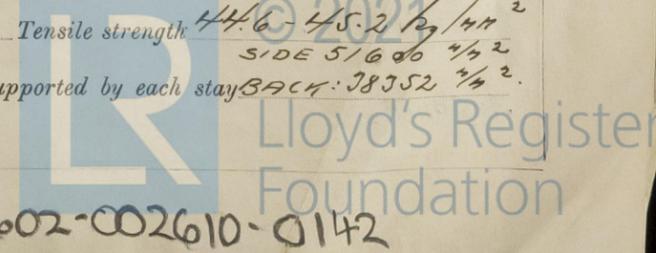
End plates in steam space: Material Siemens M. Steel Tensile strength 42.6 - 46.5 kg/cm² Thickness 27 1/4" Pitch of stays 460 x 350 1/4"

How are stays secured Screwed in both plates, nuts in - and outside Working pressure by Rules 13.06 kg/cm²

Tube plates: Material {front Siemens M. Steel back Siemens M. Steel Tensile strength {front 44.5 - 46.4 kg/cm² back 46.3 - 46.6 kg/cm² Thickness {front 24 1/4" back 19 1/4"

Mean pitch of stay tubes in nests 114 1/4" Pitch across wide water spaces 355 1/4" Working pressure {front 14.21 kg/cm² back 23.8 kg/cm²

Girders to combustion chamber tops: Material Siemens M. Steel Tensile strength 49.2 kg/cm² Depth and thickness of girder at centre 160 1/4" x 219 1/4" x 38 1/4" Length as per Rule 672 1/4" Distance apart 180 1/4" - 213 1/4" No. and pitch of stays in each 2 off - 224 1/4" Working pressure by Rules 13.78 kg/cm² Combustion chamber plates: Material Siemens M. Steel



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SIDES: 13.4 kg/cm²
 Working pressure by Rules BACK 14.8 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 1/4" Working pressure by Rules 15.6 kg/cm²
 Tubes: Material *Simon & Schel* External diameter { Plain 2 1/2" Stay 2 1/2" } Thickness { WG NO 9 } 3/8" or 5/16" No. of threads per inch 9
 Pitch of tubes 90 1/4 x 92 1/4, 90 1/4 x 90 1/4 Working pressure by Rules 230 lb/in² = 16 kg/cm² 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 # - 28 1/4
 Outer row rivet pitch at ends 127 1/4 Depth of flange if manhole flanged 75 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 { 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 *yes*
 The foregoing is a correct description,
 HELSINGÖRS JERNSKIPS- OG MASKINBYGGERI Aktieselskabet Manufacturer.

Dates of Survey { During progress of work in shops - - - 1938: 20/17, 21/16, 23/16, 30/17, 2/17, 5/17, 8/17 } Are the approved plans of boiler and superheater forwarded herewith No 3/1938. (If not state date of approval.)
 while building { During erection on board vessel - - - 7/11, 11/11, 18/14, 23/14, 1/12, 8/12, 16/12, 17/12, 21/12 } 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 of Oslo, Copenhagen, Report No. 10695*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These donkey boilers have been built by Messrs Helsingør Jernskibs- og Maskinbyggeri, Elsinore, and installed on board by the builder Messrs Odense Skibskibs-værft, 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 S. Hansen
 Engineer Surveyor to Lloyd's Register of Shipping.

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

