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REPORT ON WATER TUBE BOILERS.

No. FE-2024

Date of writing Report 13th July, 1962 When handed in at Local Office 19 Received at London Office 19
No. in Survey held at Hiroshima, Japan Port of SHIMONO SEKI
Reg. Book. Motor Tanker "LEBEDIN" Date, First Survey 30th May, 1961 Last Survey 4th July, 1962
on the Hiroshima, Japan (Number of Visits 54) Gross 22,226.24 Tons
Built at Hiroshima, Japan By whom built Mitsubishi Shipbuilding & Eng. Co., Ltd., Hiroshima Works Yard No. 3-146 When built 7-1962
Engines made at Hiroshima, Japan By whom made Mitsubishi Shipbuilding & Eng. Co., Ltd., Hiroshima Works Engine No. 21 When made 3-1961
Boilers made at Hiroshima, Japan By whom made Mitsubishi Shipbuilding & Eng. Co., Ltd., Hiroshima Works Boiler No. 89 & 90 When made 7-1962
S for Register Book 7082 sq. ft. Owners V/O "SUDOPORT" Port belonging to Odesa

WATER TUBE BOILERS MAIN, AUXILIARY, OR DONKEY Manufacturers of Steel Plates: Fuji Iron & Steel, Hirohata Works
Date of Approval of plan 27th May, 1961 26th June, 1961 Tubes: Sumitomo Metal Ind., Amagasaki & Wakayama Works
No. of Certificate I-11612 I-11613 Can each boiler be worked separately Yes Total Heating Surface of Boilers 219 M² No. and Description or Type Evaporation Water Tube Boiler Working Pressure 55 kg/cm² Date of Test 8-12-1961
Half Economisers 90 M² Is forced draught fitted Yes Area of Fire Grate (coal) in each Boiler - Superheaters None
No. and type of burners (oil) in each boiler 3 - "Volcano" Pressure Jet Oil Burner

Each boiler 2 - Single Spring Loaded Improved High Life Type No. and description of safety valves on per rule 2,630 mm²
Are they fitted with easing gear Yes As fitted 3,780 mm² Pressure to which they -
In case of donkey boilers state whether steam from main boilers can enter -
Smallest distance between boilers or uptakes and bunkers or woodwork 860 mm Height of boiler 5,700 mm (total) 8,255 mm

Width and length 3,930 mm, 3,945 mm Steam Drums:—Number in each boiler 1 Inside diameter 650 mm
Thickness of plates 22 mm 40 mm Range of tensile strength 47.2 kg/mm², 46.2 - 48.5 kg/mm² Are drum shell plates welded Yes
If fusion welded, state name of welding firm Mitsubishi Shipbuilding & Engineering Co., Ltd., Hiroshima Works Have all the requirements of the Rules Yes
Description of riveting:—Circ. seams - long. seams -
Pitch of rivets - Thickness of straps - Percentage strength of -

Percentage strength of shell in way of tubes 51.5% Diameter of tube holes in drum 38.6 & 89.8 mm Pitch of tube holes 40 & 160 mm
Thickness of plates 26 mm Radius or how stayed 450 mm Steam Drum Heads or Ends:—Range of tensile strength 49.9 kg/mm²
Size of manhole or handhole 305 x 405 mm Water Drums:—Number 1 Inside diameter 650 mm Thickness of plates 22 mm 40 mm Range of tensile strength 47.2 kg/mm², 46.2 - 48.5 kg/cm²
Are drum shell plates welded Yes If fusion welded, state name of welding firm Mitsubishi Shipbuilding & Eng. Co., Ltd., Hiroshima Works Have all the requirements of the Rules Yes
Description of riveting:—Circ. seams - long. seams -
Pitch of rivets - Thickness of straps - Percentage strength of -

Percentage strength of drum shell in way of tubes 51.5% Water Drum Heads or Ends:—Range of tensile strength 49.9 kg/mm²
Thickness of plates 26 mm Radius or how stayed 450 mm Size of manhole or handhole 305 x 405 mm
Readers or Sections:—Number - Material - Thickness - Tested by hydraulic pressure to -
Tubes:—Diameter 38.1 mm 88.9 mm Thickness 3.5 mm 6.5 mm Number 410 & 17 Steam Dome or Collector:—Description of -
Inside diameter - Thickness of shell plates - Range of tensile -
Description of longitudinal joint - If fusion welded, state name of welding -
Have all the requirements for the Rules for Class I vessels been complied with - Diameter of rivet holes -

Thickness of straps - Percentage strength of long. joint - plate - rivet -
Crown or End Plates:—Range of tensile strength - Thickness - Radius or how stayed -
SUPERHEATER, Drums or Headers:—Number in each boiler - Inside diameter -
Thickness - Material - Range of tensile strength - Are drum shell plates welded -
If fusion welded, state name of welding firm - Have all the requirements of the Rules -
Description of riveting:—Circ. seams - long. seams -
Diameter of rivet holes in long. seams - Pitch of rivets - Thickness of straps - Percentage strength of -

Percentage strength of drum shell in way of tubes - Drum Heads or Ends:—Thickness - Range of tensile strength -
Radius or how stayed - Size of manhole or handhole - Number, diameter, and thickness of tubes -
Tested by hydraulic pressure to - Date of test - Is a safety valve fitted to each section of the superheater which -
Can be shut off from the boiler - No. and description of safety valves - Area of each set -
Pressure to which they are adjusted - Is easing gear fitted -

Are Gear. Has the spare gear required by the Rules been supplied Yes
The foregoing is a correct description,
1961: May 30, Jun. 16, 22, 23, July 13, 14, 15, 18, 19, Aug. 1, 12, 14, 19, 24, 30, Sept. 1, 6, 12, 18, 20, 21, 22, 25, 28, 29, Oct. 2, 3, 5, 7, 9, 10, 11, 12, 13, 17, 19, 20, 21, 22, 24, 28 Mitsubishi Shipbuilding & Eng. Co., Ltd., Hiroshima Works
1962: Feb. 7, April 17, June 1, 6, July 4 Is the approved plan of boiler forwarded herewith No
Total No. of visits 54

Dates During progress of work in shops - During erection on board vessel -
This boiler a duplicate of a previous case Yes If so, state vessel's name and report No. M.V. "LUGANSK" No. FE-1960

GENERAL REMARKS (State quality of workmanship, opinions as to class, etc.) These boilers have been constructed and installed under special survey in accordance with the Rules, Approved plans and Secretary's letters. The materials and workmanship are good. The boilers have been examined under steam, accumulation tests carried out and safety valves adjusted to 32 lb/in² and found satisfactory.

Survey Fee ... £ 213.000 When applied for 19
Travelling Expenses (if any) £ - When received 19

Date FRIDAY 14 SEP 1962
Signature W. A. Cook & J. Nonomura
Engineer Surveyor to Lloyd's Register of Shipping.
W. A. Cook & J. Nonomura, Y. Kojima
Lloyd's Register Foundation

Aux. Boiler for m.v. "LEBEDEN"

Heating Surface of Register Book

Primary Boilers	219 M ² x 2.
Secondary Boilers	65 M ² x 2.
Half Economizer	90 M ²

For Free Calculation

Primary Boiler Heating Surface	219 M ² 2357.316 Ft ²
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Increase by this

$$\begin{aligned}\frac{\text{W.P.} + 600}{800} &= \frac{55 \times 14.22 + 600}{800} \\ &= \frac{782.1 + 600}{800} \\ &= 1.7276\end{aligned}$$

$$1.7276 \times 2357.316 = \underline{\underline{4072.499}}$$

Secondary Boiler Heating Surface	65 M ² 699.66 Ft ²
50% Economizer Heating Surface	90 M ² 968.76 Ft ²

Total H.S. for Fee Purpose

$$= (4072.499 + 699.66) \times 2 + 968.76 \text{ Ft}^2$$

$$= \underline{\underline{10513.038 \text{ Ft}^2}}$$



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