

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 12/6 1953 When handed in at Local Office 17/6 1953 Port of HELSINGBORG.  
 No. in Survey held at Landskrona Date, First Survey 19th March Last Survey 9th June, 19 53  
 Reg. Book. (No. of Visits 26)  
96208 on the Motortanker "MADELEINE". Tons { Gross 10729  
 Net 6257  
 Built at Landskrona By whom built Öresundsvärfvet A/B Yard No. 126 When built 1953  
 Owners A/B Verna Port belonging to Helsingborg  
 Installation fitted by Öresundsvärfvet A/B, Landskrona When fitted 1953  
 Is vessel equipped for carrying Petroleum in bulk Yes Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No Radar Yes

Plans, have they been submitted and approved Yes System of Distribution Two wire Voltage of Lighting 110

Heating 110 & 220 Power 220 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency -

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted with a trip switch - Generators, are they compound wound Yes, and level compounded under working conditions Yes

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

Negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per Rule Yes

Position of Generators One port side and one stbd. side on E.R. floor and one on a platform on port side in E.R.

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and

damage from water, steam and oil Yes Switchboards, where are main switchboards placed On a platform on port side in the Engine Room

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes, what insulation is used for the panels Deadfront type, if of synthetic insulating

material is it an Approved Type -, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule - Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear

for each generator and arrangement of equaliser switches A double pole linked circuit breaker with overload and reversed current trips and a single pole equaliser switch interlocked with the circuit breaker as per Rule

and the switch and fuse gear (or circuit breakers) for each outgoing circuit A double pole linked switch and a fuse on each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 9

ammeters 5 voltmeters - synchronising devices - For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided Ohm-meter

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes

make of fuses ASEA & Laur. Knudsen, are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 20 %, and at what current do the reversed current protective devices operate 85 Amp. & 60 Amp. resp.

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes

Cables, are they insulated and protected as per Rule Yes, if otherwise than as per Rule are they of an Approved Type -

state maximum fall of pressure between bus bars and any point under maximum load Below Rule permitted, are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets Yes Are all paper insulated and varnished cambric insulated

cables sealed at the ends - Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes, are any cables laid under machines or floorplates Yes, if so, are they

adequately protected Yes Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit -

or of the "HR" type - State how the cables are supported or protected Supported by metal clips. Cables

lead covered and armoured or where not exposed for mechanical damage lead covered and steel wire braided. Lighting and heating cables in accommodations lead covered.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes Are all cables passing through decks and watertight

bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes

effectively bushed Yes Refrigerated chambers, are the cables and fittings as per Rule Yes

Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes

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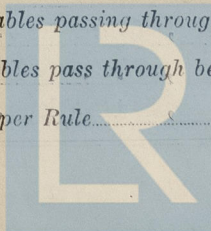
Are all cables passing through beams, etc., are the holes effectively bushed Yes

Refrigerated chambers, are the cables and fittings as per Rule Yes

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Refrigerated chambers, are the cables and fittings as per Rule Yes



Lloyd's Register  
Foundation

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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule..... Yes Emergency Supply, state position

Navigation Lamps, are they separately wired..... Yes controlled by separate double pole switches and fuses..... Yes Are the switches and fuses in a position accessible only to the officers on watch..... Yes, is an automatic indicator fitted..... Yes Is an alternative supply provided..... Yes

Secondary Batteries, are they constructed and fitted as per Rule..... are they adequately ventilated..... state battery capacity in ampere hours.....

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof..... Yes

Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present..... Yes

if so, how are they protected..... Protected by flame-proof fittings

and where are the controlling switches fitted..... Outside the spaces Are all fittings suitably ventilated..... Yes

Searchlight Lamps, No. of....., whether fixed or portable....., are they of the carbon arc or of the filament type.....

Heating and Cooking, is the general construction as per Rule..... Yes, are the frames effectually earthed..... Yes, are heaters in the accommodation of the convection type..... Yes Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil..... Yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment..... Yes Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing..... None

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule..... Yes

Control Gear and Resistances, are they constructed and fitted as per Rule..... Yes Lightning Conductors, where required are they fitted as per Rule..... Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with..... Yes, are all fuses of an Approved Cartridge Type..... Yes, make of fuse..... ASEA & Laur. Knudsen Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships..... Yes Are the cables lead covered as per Rule..... Yes

E.S.D., if fitted state maker..... Kelvin Hughes location of transmitter..... c/d in E.R. and receiver..... c/d in E.R.

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations..... Yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory..... Yes

#### PARTICULARS OF GENERATING PLANT.

| DESCRIPTION OF GENERATOR. | No. of | MAKER.        | RATED AT                 |        |          |                | PRIME MOVER. |                    |
|---------------------------|--------|---------------|--------------------------|--------|----------|----------------|--------------|--------------------|
|                           |        |               | Kilowatts per Generator. | Volts. | Ampères. | Revs. per Min. | TYPE.        | MAKER.             |
| MAIN ...                  | 2      | ASEA          | 165                      | 220    | 750      | 450            | Oil Eng.     | Götaverken, A/B    |
|                           | 1      | "             | 110                      | 220    | 500      | 450            | Steam Eng.   | Öresundsvarvet A/B |
| Harbour light             | 1      | Th. Thrige    | 20                       | 110    | 182      | 1000           | Oil Eng.     | Pelapone Eng. Ltd. |
| EMERGENCY ...             |        |               |                          |        |          |                |              |                    |
| ROTARY TRANSFORMER        | 1      | Elektromekano | 20                       | 110    | 182      | 1600           | El. Motor    | A/B Elektromekano  |

#### GENERATOR CABLES.

| DESCRIPTION.               | KILOWATTS. | CONDUCTORS.               |   | MAXIMUM CURRENT IN AMPERES. |       | APPROX. LENGTH (lead plus return) in feet. | INSULATION. | PROTECTIVE COVERING. |
|----------------------------|------------|---------------------------|---|-----------------------------|-------|--|-------------|----------------------|
|                            |            | No. in Parallel per Pole. | Sectional Area of Strands sq. inch or sq. mm. | In the Circuit.             | Rule. |  |             |                      |
| MAIN GENERATOR Starboard   | 165        | 4 @ 150                   | 600   | 750                         | 812   | 48   | Rubber      | Lead cov. & arm.     |
| " " EQUALISER              | -          | 2 @ 150                   | 370   | 375                         | 466   | 48   | "           | "                    |
| " " Port                   | 165        | 4                         | 600   | 750                         | 812   | 32   | "           | "                    |
| " " Equaliser              | -          | 2                         | 300   | 375                         | 406   | 32   | "           | "                    |
| " " Port (on platform)     | 110        | 3                         | 360   | 500                         | 525   | 21   | "           | "                    |
| " " Equaliser              | -          | 2                         | 190   | 250                         | 300   | 21   | "           | "                    |
| Harbour lighting generator | 20         | 1                         | 150   | 182                         | 203   | 130  | "           | "                    |
| EMERGENCY GENERATOR        | 20         | 1                         | 70  | 117                         | 125   | 14   | "           | "                    |
| ROTARY TRANSFORMER: MOTOR  | 31 HR      | 1                         | 150   | 182                         | 203   | 14   | "           | "                    |
| " " GENERATOR              | 20         | 1                         | 150   | 182                         | 203   | 14   | "           | "                    |

#### MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

| DESCRIPTION.             |    |   |     |       |     |     |        |                                 |
|--------------------------|----|---|-----|-------|-----|-----|--------|---------------------------------|
| Central, Galley          | K1 | 1 | 150 | 196   | 203 | 60  | Rubber | Lead cov. & arm.                |
| " , 220 V. amidship      | K2 | 1 | 150 | 200   | 203 | 200 | "      | "                               |
| " , Workshop E.R.        | K3 | 1 | 35  | 69    | 73  | 76  | "      | "                               |
| " , Prov. refriger. Mch. | K4 | 1 | 50  | 83    | 99  | 84  | "      | "                               |
| " , Air condition        | K5 | 1 | 150 | 196   | 203 | 18  | "      | "                               |
| " , Purifiers            | K6 | 1 | 150 | 199,8 | 203 | 64  | "      | "                               |
| " , Washroom aft         | K7 | 1 | 35  | 35    | 69  | 46  | "      | "                               |
| " , Navigation equipm.   | K8 | 1 | 10  | 25    | 38  | 40  | "      | "                               |
| " , Prov. store aft      | K9 | 1 | 6   | 21    | 29  | 20  | "      | Lead cov. & steel wire braided. |
| " , Lighting, deck aft.  | B1 | 1 | 95  | 120   | 150 | 50  | "      | Lead cov. & arm.                |
| " , " , E.R. & BR        | B2 | 1 | 6   | 20    | 29  | 10  | "      | Lead cov. & steel wire braided. |
| " , " , Main dk(s.s.a)B3 | B3 | 1 | 10  | 25    | 38  | 76  | "      | Lead cov. & arm.                |

#### LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

| DESCRIPTION.                            | No. in Parallel per Pole. | CONDUCTORS.                                   |                 | MAXIMUM CURRENT IN AMPERES. |       | APPROX. LENGTH (lead plus return) in feet. | INSULATION.                | PROTECTIVE COVERING.        |
|---|---------------------------|---|-----------------|-----------------------------|-------|--|----------------------------|-----------------------------|
|   |                           | Sectional Area of Strands sq. inch or sq. mm. | In the Circuit. | Rule.                       |       |  |                            |                             |
| Lighting, Main dk, port aft, Central B4 | 1                         | 10  | 35              | 38 ✓                        | 30    | Rubber                                     | Lead cov. & arm.           |                             |
| " , Amidship                            | B5                        | 1   | 35              | 60                          | 78 ✓  | 200  | "                          | -"                          |
| " , Poop                                | B6                        | 1   | 25              | 60                          | 63 ✓  | 50   | "                          | -"                          |
| Navigation lights                       | B7                        | 1   | 4               | 8                           | 21 ✓  | 270  | "                          | Lead cov. & stl.w. braided. |
| Lighting, deck amidship                 | B8                        | 1   | 95              | 70                          | 150 ✓ | 170  | "                          | Lead cov. & arm.            |
| " " fore-castle                         | B9                        | 1   | 6               | 21                          | 29 ✓  | 100  | "                          | Lead cov. & stl.w. "        |
| Navigation light fwd mast               | 1                         | 2,5   | 0,4             | 13 ✓                        | 114   | "  | -"                         |                             |
| " " signal " (red)                      | 1                         | 1,5   | 0,4             | 7 ✓                         | 30    | "  | -"                         |                             |
| " " " " (white)                         | 1                         | 1,5   | 0,4             | 7 ✓                         | 26    | "  | -"                         |                             |
| " " port side                           | 1                         | 1,5   | 0,4             | 7 ✓                         | 24    | "  | -"                         |                             |
| " " stbd. "                             | 1                         | 1,5   | 0,4             | 7 ✓                         | 24    | "  | -"                         |                             |
| " " aft                                 | 1                         | 1,5   | 0,4             | 7 ✓                         | 60    | "  | -"                         |                             |
| Lighting fwd pumproom                   | 1                         | 1,5   | 4               | 7 ✓                         | 20    | "  | -"                         |                             |
| " " " 2                                 | 1                         | 1,5   | 4               | 7 ✓                         | 20    | "  | -"                         |                             |
| " main " 1                              | 1                         | 2,5   | 4,5             | 13 ✓                        | 40    | "  | -"                         |                             |
| " " " 2                                 | 1                         | 2,5   | 4,5             | 13 ✓                        | 40    | "  | -"                         |                             |
| " aft " 1                               | 1                         | 1,5   | 4,5             | 7 ✓                         | 72    | "  | -"                         |                             |
| " " " 2                                 | 1                         | 1,5   | 4,5             | 7 ✓                         | 72    | "  | -"                         |                             |
| Electric stove                          | 1                         | 120   | 135             | 175 ✓                       | 10    | "  | Lead cov. & arm.           |                             |
| " oven                                  | 1                         | 6   | 21              | 29 ✓                        | 20    | "  | Lead cov. & stl.w. braided |                             |
| Waterheater amidship                    | 1                         | 10  | 27,5            | 38 ✓                        | 10    | "  | Lead cov. & arm.           |                             |
| Fuel oil heaters E.R.                   | 1                         | 35  | 68,5            | 78 ✓                        | 20    | "  | -"                         |                             |
| Air heaters saloon                      | 1                         | 4   | 18,2            | 21 ✓                        | 46    | "  | Lead cov. & stl.w. braided |                             |
| " " master and first off. accom.        | 1                         | 4   | 18,2            | 21 ✓                        | 34    | "  | -"                         |                             |
| " " Chief. Eng. accomm.                 | 1                         | 2,5   | 9,1             | 13 ✓                        | 16    | "  | -"                         |                             |
| " " prov. store aft                     | 1                         | 2,5   | 10              | 13 ✓                        | 6     | "  | -"                         |                             |
| Wireless                                | 1                         | 6   | 12              | 29 ✓                        | 16    | "  | -"                         |                             |

#### MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | No. | B.H.P. |   |     |      |     |       |                              |
|--|-----|--------|---|-----|------|-----|-------|------------------------------|
| ME cool. water pumps                   | 2   | 72     | 2 | 190 | 265  | 300 | 18-20 | Rubber Lead cov. & arm.      |
| ME lubr. oil "                         | 3   | 34     | 1 | 95  | 128  | 150 | 16-20 | "                            |
| Air compressors                        | 2   | 60     | 1 | 185 | 225  | 233 | 50-52 | "                            |
| Fuel oil transf. pump                  | 1   | 14     | 1 | 25  | 55   | 63  | 88    | "                            |
| General service pump                   | 1   | 12     | 1 | 16  | 48   | 48  | 86    | "                            |
| Aux. eng. cool. water pump             | 1   | 7,5    | 1 | 10  | 32   | 38  | 18    | "                            |
| ME turning motor                       | 1   | 12     | 1 | 16  | 48   | 48  | 36    | "                            |
| Exhaust gas. econom. c. pump           | 1   | 3      | 1 | 4   | 13,5 | 21  | 22    | " Lead cov. & stl.w. braided |
| E.R. fans                              | 2   | 5      | 1 | 4   | 21   | 21  | 24-48 | "                            |
| Refrig. compressors                    | 2   | 5      | 1 | 4   | 21   | 21  | 12    | "                            |
| " cool. water pump                     | 1   | 0,5    | 1 | 1,5 | 2,75 | 7   | 80    | "                            |
| Purifiers                              | 3   | 3,65   | 1 | 4   | 16,6 | 21  | 20    | "                            |
| Steering engines                       | 2   | 18     | 1 | 35  | 70   | 78  | 80-96 | " Lead cov. & arm.           |
| Compressors for air cond.              | 1   | 40     | 1 | 95  | 150  | 150 | 10    | "                            |
| " " " " amid.                          | 1   | 12     | 1 | 16  | 48   | 48  | 12    | "                            |



The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

ÖRESUNDSVARVET  
AKTIEBOLAG

T. Karlberg

Electrical Contractors.

Date 17th June, 1953.

#### COMPASSES.

Have the compasses been adjusted under working conditions. Yes

ÖRESUNDSVARVET  
AKTIEBOLAG

T. Karlberg

Builder's Signature.

Date 17th June, 1953.

Have the foregoing descriptions and schedules been verified and found correct. Yes

Is this installation a duplicate of a previous case. Yes similar to If so, state name of vessel m.t. "BELLINA" - Hbg. rpt. 2304

Plans. Are approved plans forwarded herewith. No If not, state date of approval Got. 24.2.53

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. Yes

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

This electrical equipment installation has been fitted on board in accordance with the Rules and approved plans.

The workmanship and materials are good. Generators above 100 KW have been inspected by the Stockholm Surveyors during construction and testing and the Makers' test certificates of generators below 100 KW and electric motors intended for essential services are attached.

The installation has been megger-tested throughout, examined under full working conditions and found in order.

Part of the above survey was at special request carried out by the undersigned on Saturday the 6th June, 1953, from 15,00 to 17,00.

Total Capacity of Generators 460 Kilowatts.

|                                  |                                 |                   |
|----------------------------------|---------------------------------|-------------------|
| The amount of Fee                | $\frac{4}{5}$ Hbg. Kr. 1670:00: | When applied for, |
|                                  | $\frac{1}{5}$ Skm. Kr. 415:00   | 17/6 19 53        |
|                                  | (Skm.)                          | When received,    |
| Travelling Expenses (if any) Kr. | 70:00:                          | -- 19             |
| Surv. Late Fee (Hbg) Kr.         | 70:00                           |                   |

Committee's Minute TUESDAY 21 JUL 1953

Assigned See P. E. mch. sph.

T. J. R.

Surveyor to Lloyd's Register of Shipping.