

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

JUN 15 1939  
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Received at London Office

Date of writing Report 5/6 1939 When handed in at Local Office 12/6 1939 Port of Copenhagen

No. in Survey held at Odense Date, First Survey 17/4 Last Survey 22/5 1939  
Reg. Book. (Number of Visits...5)

88522 on the single to Motor Tanker "INGE MÆRSK" Tons { Gross 9396.77  
Net 5819.19

Built at Odense By whom built Odense Haalskibsværft Yard No. 78 When built 1939

Owners 2/5 "SVENDBORG" 06 "0/5 AF 1912" 4/5 Port belonging to Copenhagen

Electric Light Installation fitted by 2/5 Dansk Elektricitets Company Contract No. When fitted 1939

Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution 2 conductor insulated system

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 volts.

Direct or Alternating Current, Lighting direct Power direct

If alternating current system, state frequency of periods per second ✓

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes

Generators, do they comply with the requirements regarding temperature rise Yes, are they compound wound Yes

are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator ✓

Where more than one generator is fitted are they arranged to run in parallel No, is an adjustable regulating resistance fitted in series with each shunt field Yes

Have certificates of test results for machines under 100 kw. been submitted and approved Yes

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing ✓

Have certificates for generators under 100 kw. been supplied and approved Yes

Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes

Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators port side of engine room, emergency set in poop space, is the ventilation in way of the generators satisfactory Yes

are they clear of all inflammable material Yes if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators ✓ and ✓

are the generators protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generators in metallic contact Yes

Main Switch Boards, where placed in the engine room, near generators

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard ✓

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam or oil Yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards ✓ and ✓, are they constructed wholly of durable, non-ignitable non-absorbent materials Yes

is all insulation of high dielectric strength and of permanently high insulation resistance Yes

is it of an approved type Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework ✓

is the non-hygroscopic insulating material of an approved type Yes, and is the frame effectively earthed Yes

Are the fittings as per Rule regarding:— spacing or shielding of live parts Yes

accessibility of all parts Yes, absence of fuses on back of board Yes, temperature rise of omnibus bars Yes

individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the "off" position No

are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side of switches No

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 2 pole circuit breakers with a fuse on each pole

Are turbine driven generators fitted with emergency trip switch as per rule ✓ Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material Yes

Instruments on main switchboard 3 ammeters 2 voltmeters ✓ synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection ✓

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system One set of earth lamps for each generator

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Yes have the reversed ✓

current protection devices been tested under working conditions  are all fuses labelled as per rule

Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule

Cables: Single, twin, concentric, or multicore *single* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules

If the cables are insulated otherwise than as per Rule, are they of an approved type  Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *4 Volts*

Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets

Paper Insulated and Varnished Cambric Insulated Cables. If conductors are paper or varnished cambric insulated, is the dielectric of the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound  or waterproof insulating tape

Cable Runs, are the cables sized as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage

are cables laid under machines or floorplates *No* if so, are they adequately protected

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit

Support and Protection of Cables, state how the cables are supported and protected *armoured cables, ins. supports by clips*

If cables are run in wood casings, are the casings and caps secured by screws  are the cap screws of brass  are the cables run in separate grooves

If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements

Joints in Cables, state if any, and how made, insulated, and protected *No joints*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed

state the material of which the bushes are made *lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

are their connections made as per Rule

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule  Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *filled in prop. space generator driven by 2-cyl. 4.5 c.s.a. heavy oil engine, switch-over to switch board for light*

Navigation Lamps, are these separately wired  controlled by separate switch and separate fuses  are the fuses double pole

are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule  Secondary Batteries, are they constructed and fitted as per Rule

are they ventilated as per Rule

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

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *lamps in pump*

contains in 2 lb glass globe of approved type  how are the cables led *through the tubes carrying gaslight into lamp fittings*

where are the controlling switches situated *in the alleyway in the deck house amidships*

are all fittings suitably ventilated  are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials

Heating and Cooking Appliances, are they constructed and fitted as per Rule  are air heaters constructed and fitted as per Rule

Searchlight Lamps, No. of *not fitted* whether fixed or portable  are their fittings as per Rule

Motors, are their working parts readily accessible  are the coils self-contained and readily removable for replacement

are the brushes, brush holders, terminals and lubricating arrangements as per Rule  are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material

are they protected from mechanical injury and damage from water, steam or oil  are their axes of rotation fore and aft

if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type

if not of this type, state distance of the combustible material horizontally or vertically above the motors  and

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing  have certificates for all motors for essential services been supplied and approved

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings

are all fuses of the fitted cartridge type  are they of an approved type

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule  are they suitably stored in dry situations

PARTICULARS OF GENERATING PLANT.

Table with columns: DESCRIPTION OF GENERATOR, No. of, RATED AT (Kilowatts, Volts, Amperes, Revs. per Min.), DRIVEN BY, WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE (Fuel Used, Flash Point of Fuel).

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

Table with columns: DESCRIPTION, CONDUCTORS (No. per Pole, Total Nominal Area per Pole), COMPOSITION OF STRAND (No., Diameter), TOTAL MAXIMUM CURRENT (Circuit, Rule), Approximate Length (Lead and Return), Insulated with, HOW PROTECTED.

MOTOR CONDUCTORS.

Table with columns: DESCRIPTION, No. of Motors, CONDUCTORS (No. per Pole, Total Nominal Area per Pole), COMPOSITION OF STRAND (No., Diameter), TOTAL MAXIMUM CURRENT (In Circuit, Rule), Approximate Length (Lead and Return), Insulated with, HOW PROTECTED.

The Electrical Equipment is installed in accordance with the approved plans.

All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

D.E.C.

DANSK ELEKTRISKE COMPAGNI

*J. M. M. M.*

Electrical Engineers.

Date

COMPASSES.

Minimum distance between electric generators or motors and standard compass ca. 30'

Minimum distance between electric generators or motors and steering compass ca. 25'

The nearest cables to the compasses are as follows:—

A cable carrying 2.5 Ampères 14 feet from standard compass 12 feet from steering compass.

A cable carrying 1/4 Ampères 14 feet from standard compass 12 feet from steering compass.

A cable carrying 0.2 Ampères 8" feet from standard compass 8" feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power *yes*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *yes*

The maximum deviation due to electric currents was found to be 0 degrees on any course in the case of the standard compass, and 0 degrees on any course in the case of the steering compass.

ODENSE STAALSKJEDSVÆRFT

VED A. P. MÖLLER

*B. Jakobsen*

Builder's Signature.

Date

Is this installation a duplicate of a previous case *yes*. If so, state name of vessel *MS Hikkelias*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The electric light & power installation herein described has been fitted under Special Survey and in accordance with the Society's Rules, the approved plans and the Surveyor's letters E dated 22/3, 23/3 - 17/4 1939.

The material used is of good description throughout and the workmanship of high quality.

On completion the installation was tested under working conditions and as per Rules and found satisfactory.

Noted. *J. Mac*  
21/6/39

Total Capacity of Generators 39 Kilowatts.

The amount of Fee ... *N. 554 40* When applied for, 14.6.39

Travelling Expenses (if any) £ : : 20.6.39 *22316* When received.

*Christoff*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 23 JUN 1939

Assigned

*See KE mach*  
*rft.*

20.12.36.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.)



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