

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

25 AUG 1945

Received at London Office

Date of writing Report 2nd August 1945 When handed in at Local Office

10

Port of Copenhagen

No. in Survey held at

Odense

Date, First Survey

26th April 1944

Last Survey

4th July

1945

Reg. Book.

(Number of Visits)

on the Steel Single Screw Motor Tanker CAROLINE MERSH.

Tons

Gross 10043.07

Net 6096.87

Built at

Odense

By whom built

Odense Skibsværft and No. 83.

When built

Owners

Dampskibsselskabet af 1912 A/S

Port belonging to

Fredensborg

Electric Light Installation fitted by

Dansk Elektriske Compagni A/S

Contract No.

When fitted

1945

Is the Vessel fitted for carrying Petroleum in bulk

yes.

System of Distribution

Two wire

Pressure of supply for Lighting

110

volts, Heating

volts, Power

110.

volts.

Direct or Alternating Current, Lighting

direct current

Power

direct current.

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

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

In the engine room

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

No work in

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

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

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

No work in

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

yes

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

accessibility of all parts

yes

absence of fuses on back of board

yes

temperature rise of

yes

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

For each generator: 2 double pole switches and 2 fuses in each pole

For each outgoing circuit: 2 double pole switches and 2 fuses in each pole

Are turbine driven generators fitted with emergency trip switch as per rule

yes

Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material

yes

Instruments on main switchboard

3

ammeters

2

volumeters

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

1 set of earth lamps

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 *generators not working in parallel* Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule *yes*

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

If the cables are insulated otherwise than as per Rule, are they of an approved type *yes* 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 *yes* Paper Insulated and Varnished Cambric Insulated Cables.

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *yes*, or waterproof insulating tape *yes* Cable Runs, are the cables fixed 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 *yes* Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit *lead covered*

Support and Protection of Cables, state how the cables are supported and protected *The cables are supported by clips. Lead covered and steel wire armoured cables used, where necessary protected by tubes or plating*

If cables are run in wood casings, are the casings and caps secured by screws *yes*, are the cap screws of brass *yes*, are the cables run in separate grooves *yes* If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII *yes*

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

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

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *yes* Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *yes* state the material of which the bushes are made *lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *yes* are their connections made as per Rule *yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *yes* Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *None*

Navigation Lamps, are these separately wired *yes*, controlled by separate switch and separate fuses *yes*, are the fuses double pole *yes*, are the switches and fuses grouped in a position accessible only to the officers on watch *yes* has each navigation lamp an automatic indicator as per Rule *yes* Secondary Batteries, are they constructed and fitted as per Rule *yes*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight *yes* 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 *gas light lamps fitted in pump rooms and bridge space* how are the cables led in gaslight tubing *in the deck house*

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

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

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

Searchlight Lamps, No. of *yes*, whether fixed or portable *yes*, are their fittings as per Rule *yes*

Arc Lamps, other than searchlight lamps, No. of *yes*, are their live parts insulated from the frame or case *yes*, are their fittings as per Rule *yes*

Motors, are their working parts readily accessible *yes*, are the coils self-contained and readily removable for replacement *yes*, are the brushes, brush holders, terminals and lubricating arrangements as per Rule *yes*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *yes*, are they protected from mechanical injury and damage from water, steam or oil *yes* are their axes of rotation fore and aft *yes*, 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 *No work work* if not of this type, state distance of the combustible material horizontally or vertically above the motors *yes* and *yes*

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *yes* Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule *yes* Lightning Conductors, where lightning conductors are required, are these fitted as per Rule *yes* 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 *yes* are all fuses of the filled cartridge type *yes* are they of an approved type *yes*


If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office *yes*

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule *yes*

| PARTICULARS OF GENERATING PLANT. | | | | | | | | | |
|----------------------------------|--------|------------|--------|----------|------------|----------------|-----------|--|--|
| DESCRIPTION OF GENERATOR. | No. of | RATED AT | | | | Revs. per Min. | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | |
| | | Kilowatts. | Volts. | Ampères. | Fuel Used. | | | Flash Point of Fuel. | |
| MAIN | 1 | 18 | 110 | 164 | 600 | Heavy oil | heavy oil | about 150° F. | |
| AUXILIARY | 1 | 10 | 110 | 91 | 1200 | " | " | " | |
| EMERGENCY | 1 | 18 | 110 | 164 | 600 | steam | " | " | |
| ROTARY TRANSFORMER | | | | | | | | | |

| GENERATOR, LIGHTING AND HEATING CONDUCTORS. | | | | | | | | | |
|---|---------------|-------------------------------------|------------------------|-----------|---------------------------------|-------|--|-------------------------|----------------|
| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
| | No. per Pole. | Total Nominal Area per Pole Sq. mm. | No. | Diameter. | Circuit. | Rule. | | | |
| MAIN GENERATOR | 1 | 120 | | | 164 | 175 | 13 - 13 | Vulcanized lead covered | |
| EQUALISER CONNECTIONS | | | | | | | | india | steel wire |
| AUXILIARY GENERATOR | 1 | 50 | | | 90 | 98 | 14 | rubber | armoured. |
| EMERGENCY GENERATOR | | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | | |
| ENGINE ROOM | | | | | | | | | |
| BOILER ROOM | | | | | | | | | |
| AUXILIARY SWITCHBOARDS | | | | | | | | | |
| MAIN DISTRIBUTION CABLES | | | | | | | | | |
| LIGHT | 1 | 70 | | | 95 | 124 | 28 | " | " |
| LIGHT AFT | 1 | 16 | | | 35 | 48 | 2 | " | " |
| AUXILIARY AFT | 1 | 50 | | | 90 | 98 | 69 | " | " |
| SHORE CONNECT. | 1 | 120 | | | 164 | 175 | 56 | " | " |
| LIGHTING AND HEATING CABLES | | | | | | | | | |
| ACCOMMODATION | | | | | | | | | |
| LIGHT DECK HOUSE | 1 | 25 | | | 38 | 63 | 142 | " | " |
| LIGHT MOTOR ROOM | 1 | 16 | | | 35 | 48 | 2 | " | " |
| GALLEY | 1 | 4 | | | 8 | 21 | 24 | " | " |
| WIRELESS | 1 | 16 | | | 16 | 48 | 176 | " | " |
| SEARCHLIGHT | 1 | 35 | | | 35 | 77 | 260 | " | " |
| NAVIGATION LIGHT | 1 | 2.5 | | | 6 | 13 | 178 | " | " |
| MASTHEAD LIGHT | | | | | | | | | |
| SIDE LIGHTS | | | | | | | | | |
| COMPASS LIGHTS | | | | | | | | | |
| POOP LIGHTS | | | | | | | | | |
| CARGO LIGHTS | | | | | | | | | |
| ARC LAMPS | | | | | | | | | |
| HEATERS | | | | | | | | | |

| MOTOR CONDUCTORS. | | | | | | | | | | |
|-------------------------|----------------|---------------|-------------------------------------|------------------------|-----------|---------------------------------|-------|--|-------------------------|----------------|
| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
| | | No. Per Pole. | Total Nominal Area per Pole Sq. mm. | No. | Diameter. | In Circuit. | Rule. | | | |
| BALLAST PUMP | | | | | | | | | Vulcanized lead covered | |
| MAIN BILGE LINE PUMPS | | | | | | | | | india | steel wire |
| GENERAL SERVICE PUMP | | | | | | | | | rubber | armoured. |
| EMERGENCY BILGE PUMP | | | | | | | | | | |
| SANITARY PUMP | | | | | | | | | | |
| CIRC. SEA WATER PUMPS | | | | | | | | | | |
| CIRC. FRESH WATER PUMPS | | | | | | | | | | |
| AIR COMPRESSOR | | | | | | | | | | |
| FRESH WATER PUMP | | | | | | | | | | |
| ENGINE TURNING GEAR | 8 | 1 | 35 | | | 68 | 77 | 42 | " | " |
| ENGINE REVERSING GEAR | | | | | | | | | | |
| LUBRICATING OIL PUMPS | | | | | | | | | | |
| OIL FUEL TRANSFER PUMP | | | | | | | | | | |
| WINDLASS | | | | | | | | | | |
| WINCHES, FORWARD | | | | | | | | | | |
| WINCHES, AFT | | | | | | | | | | |
| STEERING GEAR— | | | | | | | | | | |
| (a) MOTOR GENERATOR | | | | | | | | | | |
| (b) MAIN MOTOR | | | | | | | | | | |
| WORKSHOP MOTOR | 4 | 1 | 10 | | | 35 | 38 | 53 | " | " |
| VENTILATING FANS | | | | | | | | | | |
| OIL SEPARATORS | 32 | 2 | 10 | | | 27 | 38 | 21 | " | " |
| CRANE | 75 | 1 | 25 | | | 61 | 63 | 29 | " | " |

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All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The 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 ELEKTRISITETS- selskab
AKTIESELSKAB

Electrical Engineers.

Date

August 1945

COMPASSES.

Distance between electric generators or motors and standard compass 196 meters

Distance between electric generators or motors and steering compass 193 "

The nearest cables to the compasses are as follows:—

A cable carrying 0.2 Ampères 2 feet from standard compass 3 feet from steering compass.

A cable carrying 0.2 Ampères 8 feet from standard compass 5 feet from steering compass.

A cable carrying 0.2 Ampères 10 light in feet from standard compass and in 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 all course in the case of the standard compass, and 0 degrees on all course in the case of the steering compass.

Odense Staatskibsværft A/s

Builder's Signature.

Date

August 1945

Is this installation a duplicate of a previous case? yes If so, state name of vessel: Marine Mark, Course 88

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

The electric installation has been constructed under special survey in accordance with the requirements of the Rules 1938-39.

The material used and the workmanship are of good description

Noted

Done 27.11.45

Direction finder has been installed also echo sounding device in the forward cofferdam as shown on the enclosed plan. Please see also copy of letter

Total Capacity of Generators 46 Kilowatts.

The amount of Fee ...

£ 583.00

When applied for,
Feb. 1942
1 Aug. 1945

Travelling Expenses (if any) £

When received.
19

L. Clausen

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 1 MAR 1946

Assigned

See minute on

fe. rpt



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Foundation