

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 NOV 1930

Date of writing Report 24th Oct 1930 When handed in at Local Office

Port of HAMBURG

No. in Survey held at Hamburg

Date, First Survey 23rd Sept., 1930 Last Survey 21st October, 1930

Reg. Book.

(Number of Visits 7)

on the Steel Twin Scr. "KOLL"

Tons { Gross 10051

Net 2019

Built at Hamburg

By whom built Deutsche Werft A.G.

Yard No. 142

When built 1930

Owners Odd Bergs Tankrederi A/S

Port belonging to Oslo

Electric Light Installation fitted by AEG, Allgemeine Elektrizitäts Ges.

Contract No.

When fitted 1930

System of Distribution two wire, two conductor system; separate conductors, except small areas.

Pressure of supply for Lighting 110

volts, Heating

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

Generators, do they comply with the requirements regarding rating

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

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

Engine room, starb. side, steam driven upper —, Diesel eng. driven lower green deck

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

Engine room, starb. upper green deck.

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

, 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

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

, proportion of omnibus

bars

yes

, individual fuses to voltmeter, pilot or earth lamp

yes

, connections of switches

yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

For each generator:

A fuse on each pole and a double pole switch. For each outgoing circuit: A fuse on each pole and a double pole switch /

Instruments on main switchboard

2

ammeters

2

voltmeters

—

synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

lamps alarm lights

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

yes

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

yes



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11201 *thin for small areas.* / *The German Standards have been applied*

Cables: Single, *thin, continuous, or multiple* are the cables insulated and protected as per Tables IV or V of the Rules *generally*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *4 volts*

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

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *none fitted*

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*

Support and Protection of Cables, state how the cables are supported and protected *armoured cables supported by clips, on deck and cross gangways running in E troughs, were exposed to mechanical risk in tubes or covered by sheet iron*

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, if lights are fitted, are the cables and fittings in accordance with the special requirements *yes*

Joints in Cables, state if any, and how made, insulated, and protected *gas and watertight joint boxes*

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 *hard wood*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Power and light on the 2 wire system*

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 *Engine room, lower between deck. Generator driven by oil engine. Connected to main switch board.*

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 *yes*, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *yes*, *gas tight fittings, closed glass bowls.*, how are the cables led

where are the controlling switches situated *outside the pump room, in deck house.*

Searchlight Lamps, No. of *1*, whether fixed or portable *1*, are their fittings as per Rule *yes*

Are Lamps, other than searchlight lamps, No. of *1*, 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 *yes*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *yes* and *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 *steel masts*

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*

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

| PARTICULARS OF GENERATING PLANT. | | | | | | | | | |
|----------------------------------|--------|------------|--------|-------|----------------|------------------------|--|----------------------|--|
| DESCRIPTION OF GENERATOR. | No. of | RATED AT | | | | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | | |
| | | Kilowatts. | Volts. | Amps. | Revs. per Min. | | Fuel Used. | Flash Point of Fuel. | |
| MAIN ... | 1 | 12 | 115 | 104 | 400 | Single cyl. steam eng. | | | |
| AUXILIARY ... | 1 | 14 | 115 | 104 | 400 | See steam driven | | | |
| EMERGENCY ... | 1 | 12 | 115 | 104 | 400 | Heavy Oil Engine | Gas oil | 170° F | |
| ROTARY TRANSFORMER | | | | | | | | | |

| LIGHTING AND HEATING CONDUCTORS. | | | | | | | | | |
|----------------------------------|------------------------|--------------------|---|------------------------|-------------|---|---|---------------------|---------------------------|
| Ref. No. | DESCRIPTION. | No. of Conductors. | Effective Area of each Conductor. <small>sq. ins.</small> | COMPOSITION OF STRAND. | | Total Maximum Current. <small>Amps.</small> | Approximate Length. <small>(Lead and Return.) Feet.</small> | Insulated with | HOW PROTECTED. |
| | | | | No. | Diameter. | | | | |
| | MAIN GENERATOR... | 2 | 90 mm ² | 37 | 1.55 mm | 104 | 20 m | Rubber (Vulcanized) | Lead covered and armoured |
| | EQUALISER CONNECTIONS | | | | | | | | |
| | AUXILIARY GENERATOR | | | | | | | | |
| | EMERGENCY GENERATOR | 2 | 90 mm ² | 37 | 1.55 mm | 104 | 30 m | " | |
| | ROTARY TRANSFORMER... | | | | | | | | |
| | AUXILIARY SWITCHBOARDS | | | | | | | | |
| | ENGINE ROOM | | | | | | | | |
| | BOILER ROOM | | | | | | | | |
| | ACCOMMODATION | | | | | | | | |
| | WIRELESS | 2 | 10 mm ² | 19 | 1.52 mm | 25 | 180 m | " | |
| | SEARCHLIGHT | | | | | | | | |
| | MASTHEAD LIGHT... | 2 | 2 x 15 mm ² | 2 x 1 | 2 x 1.38 mm | 0.33 | 115 m | | |
| | SIDE LIGHTS | 2 | " | " | " | " | 15 m | | |
| | COMPASS LIGHTS | 2 | " | " | " | " | 10 m | | |
| | POOP LIGHTS | 2 | 2 x 15 mm ² | 2 x 1 | 2 x 1.38 mm | " | 110 m | | |
| | CARGO LIGHTS | | | | | | | | |
| | ARC LAMPS | | | | | | | | |
| | HEATERS | | | | | | | | |

| MOTOR CONDUCTORS. | | | | | | | | | |
|-------------------|-------------------------|----------------|---|------------------------|-------------|---|---|---------------------|----------------------------|
| Ref. No. | DESCRIPTION. | No. of Motors. | Effective Area of each Conductor. <small>Sq. Ins.</small> | COMPOSITION OF STRAND. | | Total Maximum Current. <small>Amps.</small> | Approximate Length. <small>(Lead and Return.) Feet.</small> | Insulated with | HOW PROTECTED. |
| | | | | No. | Diameter. | | | | |
| | BALLAST PUMP | | | | | | | | Lead covered and armoured. |
| | MAIN BILGE LINE PUMPS | | | | | | | | |
| | GENERAL SERVICE PUMP | | | | | | | | |
| | EMERGENCY BILGE PUMP | | | | | | | | |
| | SANITARY PUMP | | | | | | | | |
| | CIRC. SEA WATER PUMPS | | | | | | | | |
| | CIRC. FRESH WATER PUMPS | | | | | | | | |
| | AIR COMPRESSOR | | | | | | | | |
| | FRESH WATER PUMP | | | | | | | | |
| | ENGINE TURNING GEAR | 2 | 25 mm ² | 19 | 1.3 mm | 30 | 60 m | Rubber (Vulcanized) | |
| | ENGINE REVERSING GEAR | | | | | | | | |
| | LUBRICATING OIL PUMPS | | | | | | | | |
| | OIL FUEL TRANSFER PUMP | | | | | | | | |
| | WINDLASS | | | | | | | | |
| | WINCHES, FORWARD | | | | | | | | |
| | WINCHES, AFT | | | | | | | | |
| | STEERING GEAR | | | | | | | | |
| | (a) MOTOR GENERATOR | 1 | 25 mm ² | 19 | 1.3 mm | 45 | 80 m | " | |
| | (b) MAIN MOTOR | 1 | 25 mm ² | 19 | 1.3 mm | 45 | 80 m | " | |
| | WORKSHOP MOTOR | 2 | 2 x 25 mm ² | 2 x 1 | 2 x 1.38 mm | 16 | 60 m | " | |
| | VENTILATING FANS | 1 | 25 mm ² | 19 | 1.3 mm | 16 | 20 m | " | |
| | Vertical Donkey Boiler | | | | | | | | |

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

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

The foregoing is a correct description.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT
ABT. I. SCHIFFBAU
BAUBUREAU HAMBURG

Electrical Engineers.

Date

15. Oktober 1930

COMPASSES.

Distance between electric generators ~~or motors~~ and standard compass about 75m

Distance between electric generators ~~or motors~~ and steering compass about 80m.

The nearest cables to the compasses are as follows:—

A cable carrying 0.5 Ampères close to feet from standard compass close to feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

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

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 nil degrees on course in the case of the standard compass, and nil degrees on course in the case of the steering compass.

DEUTSCHE WERFT
AKTIENGESELLSCHAFT

Builder's Signature.

Date

Is this installation a duplicate of a previous case no If so, state name of vessel

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

Material and workmanship of this electric installation are of good quality. Rules respecting conductors of this Society have been applied generally, as the German Standards are used in this construction. The installation has been built under special survey in accordance with the requirements of the Rules, the approved plans and the Secretary's Letters. It has given full satisfaction under full working and manoeuvring conditions and is eligible in my opinion to be classed in the Society's Reg. Book with Record of "Electric Light."

It is submitted that
this vessel is eligible for
THE RECORD. Elec. Light.

10/11/30.

Total Capacity of Generators 24 Kilowatts.

The amount of Fee ... £ 19: 10: 5. 11. 30

Travelling Expenses (if any) £ - : - : 12. 12. 30

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 21 NOV 1930

Assigned

Elec. Lt.



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