

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 3rd August 1938 When handed in at Local Office 19 Port of HAMBURG
 No. in Survey held at HAMBURG Date, First Survey 8th June Last Survey 25th July 1938
 Reg. Book. INVERDARGLE (Number of Visits 12)
 on the Steel Single Screw H.V. Tons { Gross 9456
 Net 5361
 Built at HAMBURG By whom built Deutsche Werft A.G. Yard No. 202 When built 1938
 Owners Inver Tankers, Ltd. Port belonging to Dublin
 Electric Light Installation fitted by Allgemeine Electricitäts Gesellschaft Contract No. 1938
 Is the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution two wire, two conductor system ✓
 Pressure of supply for Lighting 110 volts, Heating 110 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 — 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 certificates attached ✓
 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 ✓, is the ventilation in way of the generators satisfactory yes ✓ Are they clear of all inflammable material yes ✓ if situated near unprotected — and —
 Position of Generators port side of engine room floor ✓
 in way of the generators satisfactory yes ✓ Are they clear of all inflammable material yes ✓ if situated near unprotected — and —
 are the generators protected from mechanical injury and damage from water, steam or oil — are their axes of rotation fore and aft —
 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 port side of engine room floor
 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 — and — are they constructed wholly of durable, non-ignitable non-absorbent materials marble tested to 2000 volts A.C. 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 For each generator a double-pole linked switch and a fuse on each pole. For each outgoing circuit a double pole change over switch and 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 2 ✓ 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 Voltmeter with ohm scale ✓
 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, multicore... are the cables insulated and protected as per Tables...
If the cables are insulated otherwise than as per Rule, are they of an approved type...
any point of the installation under maximum load...
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 at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound...
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...
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...
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...
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 dressed...
Earthing Connections, state what earthing connections are fitted and their respective sectional areas...
Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule...
Navigation Lamps, are these separately wired...
Secondary Batteries, are they constructed and fitted 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 where inflammable or explosive dust or gases are liable to be present...
Heating and Cooking Appliances, are they constructed and fitted as per Rule...
Searchlight Lamps, No. of...
Motors, are their working parts readily accessible...
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...
Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule...

| PARTICULARS OF GENERATING PLANT. | | | | | | | | | |
|----------------------------------|--------|------------|--------|-------|---------------|---|--|----------------------|--|
| DESCRIPTION OF GENERATOR. | No. of | RATED AT | | | | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | | |
| | | Kilowatts. | Volts. | Amps. | Rev. per Min. | | Fuel Used. | Flash Point of Fuel. | |
| MAIN | 1 | 30 | 115 | 260 | 450 | Compound steam engine 3-cyl, 250 SA oil engine | disch oil | about 130° F. | |
| EMERGENCY | 1 | 30 | 115 | 260 | 500 | | | | |
| ROTARY TRANSFORMER | | | | | | | | | |

| GENERATOR, LIGHTING AND HEATING CONDUCTORS. | | | | | | | | | | |
|---|---------------|-------------------------------------|-----|------------------------|----------|------------------------|---|--|----------------|---|
| DESCRIPTION. | No. per Pole. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length. (Lead and Return.) | Insulated with | HOW PROTECTED. |
| | | Total Nominal Area per Pole Sq. mm. | No. | Diameter. | Circuit. | Rule. | | | | |
| MAIN GENERATOR for A. & Z. | 1 | 240 | 19 | 1.84 | 260 | 37.8 | ✓ | 14 | Rubber | In accommodation spaces lead covered. All other cables lead covered and armoured. |
| SHORE CONNECTIONS | 1 | 240 | 19 | 1.83 | 190 | 98.3 | ✓ | 36 | | |
| AUXILIARY GENERATOR | | | | | | | | | | |
| EMERGENCY GENERATOR | | | | | | | | | | |
| ROTARY TRANSFORMER MOTOR | | | | | | | | | | |
| ENGINE ROOM | 1 | 1.2 | 1 | 1.38 | 6 | 9.4 | ✓ | 22 | | |
| BOILER ROOM | | | | | | | | | | |
| AUXILIARY SWITCHBOARDS | 1 | 25 | 19 | 1.3 | 60 | 63.3 | ✓ | 168 | | |
| Navigation control board | 1 | 25 | 1 | 1.38 | 19.5 | 19.5 | ✓ | 200 | | |
| Accommodation switchboard | 1 | 25 | 1 | 1.38 | 13.5 | 13.5 | ✓ | 114 | | |
| " | 1 | 35 | 19 | 1.53 | 70 | 77.7 | ✓ | 56 | | |
| " | 1 | 10 | 19 | 0.82 | 30 | 38.1 | ✓ | 84 | | |
| " | 1 | 35 | 19 | 1.53 | 30 | 77.7 | ✓ | 66 | | |
| " | 1 | 30 | 37 | 1.55 | 112 | 123.7 | ✓ | 22 | | |
| HEATING PLATE | 1 | 2.5 | 1 | 1.38 | 12 | 18.8 | ✓ | 50 | | |
| " | 1 | 10 | 19 | 0.82 | 27 | 38.1 | ✓ | 20 | | |
| MARCONI SOUNDING DEVICE | 1 | 2.5 | 1 | 1.38 | 10 | 18.5 | ✓ | 212 | | |
| WIRELESS | 1 | 10 | 19 | 0.82 | 32 | 38.1 | ✓ | 184 | | |
| SEARCHLIGHT | | | | | | | | | | |
| MASTHEAD LIGHT | 1 | 1.5 | 1 | 1.38 | 0.37 | 9.4 | ✓ | 145/150 | | |
| SIDE LIGHTS | 1 | 1.5 | 1 | 1.38 | 0.37 | 9.4 | ✓ | 40 | | |
| COMPASS LIGHTS | 1 | 1.5 | 1 | 1.38 | 0.14 | 9.4 | ✓ | 15 | | |
| POOP LIGHTS | 1 | 1.5 | 1 | 1.38 | 0.37 | 9.4 | ✓ | 250 | | |
| CARGO LIGHTS on both masts | 1 | 2.5 | 1 | 1.38 | 4.6 | 15.5 | ✓ | 104/120 | | |
| HEATERS | | | | | | | | | | |

| MOTOR CONDUCTORS. | | | | | | | | | | | |
|---|----------------|---------------|-------------------------------------|------------------------|-----------|------------------------|-------|--|----------------|----------------------------|----|
| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. | | Approximate Length. (Lead and Return.) | Insulated with | HOW PROTECTED. | |
| | | No. Per Pole. | Total Nominal Area per Pole Sq. mm. | No. | Diameter. | In Circuit. | Rule. | | | | |
| BALLAST PUMP | | | | | | | | | Rubber | Lead covered and armoured. | |
| MAIN BILGE LINE PUMPS | | | | | | | | | | | |
| GENERAL SERVICE PUMP | | | | | | | | | | | |
| EMERGENCY BILGE PUMP | | | | | | | | | | | |
| SANITARY PUMP | 1 | 1 | 10 | 19 | 0.82 | 28.6 | ✓ | 38.1 | | | 24 |
| CIRC. SEA WATER PUMPS | | | | | | | | | | | |
| FRESH WATER PUMPS | 1 | 1 | 2.5 | 1 | 1.38 | 6.3 | ✓ | 15.5 | | | 29 |
| COMPRESSOR REFRIGERATING | 1 | 1 | 35 | 19 | 1.3 | 69 | ✓ | 63.3 | | | 72 |
| FRESH WATER PUMP | 1 | 1 | 10 | 19 | 0.82 | 28.6 | ✓ | 38.1 | | | 66 |
| ENGINE TURNING GEAR | 1 | 1 | 50 | 19 | 1.83 | 120 | ✓ | 114.8 | | | 69 |
| ENGINE REVERSING GEAR | | | | | | | | | | | |
| LUBRICATING OIL PUMPS | | | | | | | | | | | |
| OIL FUEL TRANSFER PUMP | | | | | | | | | | | |
| WINDLASS | | | | | | | | | | | |
| WINCHES, FORWARD | 1 | 1 | 10 | 19 | 0.82 | 28.6 | ✓ | 38.1 | 93 | | |
| WINCHES, AFT | | | | | | | | | | | |
| OIL PURIFIER | 2 | 1 | 10 | 19 | 0.82 | 28.6 | ✓ | 38.1 | 15/16 | | |
| STEERING GEAR | | | | | | | | | | | |
| (a) MOTOR GENERATOR | 1 | 1 | 50 | 19 | 1.83 | 125/129 | ✓ | 114.8 | 124 | | |
| (b) MAIN MOTOR | 2 | 1 | 50 | 19 | 1.83 | 79 | ✓ | 114.8 | 20 | | |
| WORKSHOP MOTOR | | | | | | | | | | | |
| VENTILATING FANS | | | | | | | | | | | |
| LATHE | 1 | 1 | 4 | 19 | 0.53 | 17.6 | ✓ | 22.1 | 30 | | |
| GRINDING STONE | 1 | 1 | 1.5 | 1 | 1.38 | 4.5 | ✓ | 9.4 | 24 | | |
| DRILLING MACH. | 1 | 1 | 4 | 19 | 0.53 | 17.6 | ✓ | 22.1 | 28 | | |
| "DEMAQ" - HOIST | 1 | 1 | 35 | 19 | 1.53 | 79 | ✓ | 84.7 | 22 | | |
| 2 AIR-COMPRESSORS FOR OIL FIRED STOVE (1 for spare) | 2 | 1 | 2.5 | 1 | 1.38 | 16.3 | ✓ | 15.5 | 50 | | |

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.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT
ABTEILUNG SCHIFFBAU

Electrical Engineers.

Date 29. Juli 1938

COMPASSES.

Minimum distance between electric generators or motors and standard compass about 15 metres

Minimum distance between electric generators or motors and steering compass about 15 metres

The nearest cables to the compasses are as follows:—

A cable carrying 0.2 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 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 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 1.8.1938

Is this installation a duplicate of a previous case yes If so, state name of vessel NIVERLIFEY Hamburg Reg. No. 22830

General Remarks (State quality of workmanship, opinions as to class, etc. Material and workmanship of this

Electrical Installation are of good quality. As the conductors used are of the German Standard, the Society's Rules regarding to conductors have been applied generally.

The installation has been fitted under Special Survey in accordance with the approved plans, the Secretary's letter and otherwise in compliance with the requirements of the Rules and is eligible in my opinion to be classed.

It has given satisfaction under working conditions.

Noted

Reu

9.8.38

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... RTG 57.0 - : When applied for, 19...

Travelling Expenses (if any) £ : 23/9.38 When received. 23/9.38

Committee's Minute

Assigned

See Ham. 22865

H. Rohrs

Surveyor to Lloyd's Register of Shipping.