

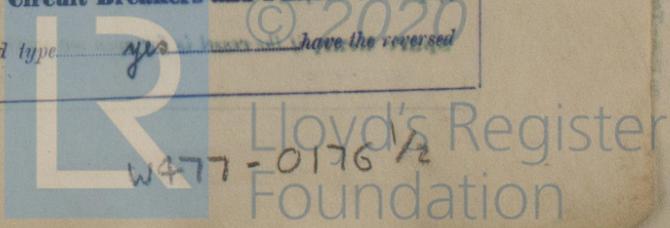
REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 8 1938

Date of writing Report 3rd August 1938, When handed in at Local Office 10 Port of HAMBURG
 No. in Survey held at HAMBURG Date, First Survey 8th June Last Survey 25th July 1938
 Reg. Book. on the Steel Single Screw H.C. V. INVERDARGLE (Number of Visits 12)
 Gross 9456 Tons
 Net 5361
 Built at HAMBURG By whom built Deutsche Werft A.G. Yard No. 202 When built 1938
 Owners Immer Tankers, Ltd. Port belonging to Dublin
 Electric Light Installation fitted by Allgemeine Electricitäts Gesellschaft Contract No. When fitted 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 ✓
Position of Generators port side of engine room floor ✓, 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 , 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 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 marble tested to 20000 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, ~~twi~~, or multicore are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules generally
If the cables are insulated otherwise than as per Rule, are they of an approved type Fall of Pressure, state maximum between the bars and 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 or waterproof insulating tape

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 laid under machines or floorplates if so, are they adequately protected

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 all lead covered and armoured cables clipped on galvanized sheet iron cable runs and where necessary wholly enclosed in galvanized iron casing or tubing

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 gastight joint boxes

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 state the material of which the bushes are made wood and 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

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 in wheel house

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 gastight fitted

strongly protected glass bowls in pump rooms how are the cables led

in gastight galvanized tubing in the forepeak pump room and in the space immediately over the tanks in the midships house

where are the controlling switches situated on bridge deck

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 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

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 please find attached

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 filled 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.

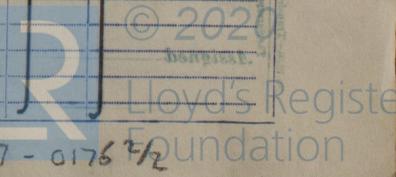
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	30	115	260	450	Compound steam engine		
Emergency	1	30	115	260	500	2 1/2 hp, 250 SA oil engine	disch oil	above 130° F.
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	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.	Rate.			
MAIN GENERATOR for A. & S.	1	240	19	1.24	260	271.8	14		
SHORE CONNECTIONS	1	240	19	1.23	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	1.2	60	63.3	168		
Navigation control board	1	25	1	1.28	18.5	200			
and switchboard	1	25	1	1.28	18.5	114		Rubber	In accommodation spaces lead covered all other cables lead covered and armoured.
	1	35	19	1.53	70	77.7	56		
	1	10	19	0.82	30	38.1	84		
	1	35	19	1.53	112	123.7	66		
	1	30	37	1.55	112	123.7	22		
HEATING PLATE	1	2.0	1	1.28	42	18.8	50		
12 h.p.	1	10	19	0.82	27	38.1	20		
MARCONI SOUNDING DEVICE	1	2.5	1	1.78	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	1.78	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.	Rate.			
BALLAST PUMP										
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										
FOR MIDSHIP HOUSE	1	1	2.5	1	1.28	6.3	15.5	29		
FRESH WATER PUMP	1	1	10	19	0.82	28.6	38.1	66		
COMPRESSOR REFRIGERATING	1	1	35	19	1.2	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									Rubber	Lead covered and armoured.
WINCHES, FORWARD										
WATER CIRCULATING PUMP FOR LAUNCH WASTE HEAT	1	1	10	19	0.82	28.6	38.1	92		
DONKEY BOILER										
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	120/129	114.8	124		
(b) MAIN MOTOR	2	1	50	19	1.83	79	114.8	20		
WORKSHOP MOTOR										
VENTILATING FANS										
LATHES	1	1	4	19	0.52	12.6	22.1	30		
GRINDING STONE	1	1	1.5	1	1.38	4.5	9.4	24		
DRILLING MACH.	1	1	4	19	0.52	12.6	22.1	28		
DEMAS - HOIST	1	1	35	19	1.53	79	84.7	22		
2 AIR-COMPRESSORS FOR OIL FIRED STOVE (1 for spare)	2	1	3.5	1	1.78	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~~ standard compass close to ~~feet~~ 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 INVERLIFEY 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

Heu

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 38/1
JMK 23/9.

Committee's Minute

Assigned See Ham. 22865

H. Rohrs

Surveyor to Lloyd's Register of Shipping.

The Surveyors are requested not to write on or below the space for Committee's Minute



Lloyd's Register Foundation