

Rpt. 13.

No. 47695

**REPORT ON ELECTRICAL EQUIPMENT.**

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report April 16th 1947 When handed in at Local Office April 16th 1947 Port of NEW YORK  
 No. in Survey held at Brooklyn, N.Y. Date, First Survey 25th March Last Survey 15th April 1947  
 Reg. Book. 76250 on the S.S. "VIKDAL" ex "JOHN MASON" Tons { Gross 7176  
 Net 4380  
 Built at Portland, Me. By whom built New England S.B. Corp. Yard No. - When built 1943  
 Owners Tanker Corp. of Panama Port belonging to Panama  
 Electric Light Installation fitted by - Contract No. - When fitted 1943  
 Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two-Wire Direct Current  
 Pressure of supply for Lighting 120 volts, Heating - volts, Power 120 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 A.I.E.E. Standards 40°C rise are they compound wound Yes  
 are they over compounded 5 per cent. No, if not compound wound state distance between each generator -  
 Where more than one generator is fitted are they arranged to run in parallel Yes, 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 -  
 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 Engine Room First Grating Level Starboard Side, 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 Engine Room on Generator Flat  
 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 Ebony Asbestos, 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  
A.I.E.E. Standards  
 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 -, 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  
 Each generator: 175 Amp D.P. Breaker with overload and reverse current trips and a three pole  
isolating switch. Outgoing circuits: D.P. linked switches and fuses.  
 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 3 volt-  
 meters - synchronizing device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equalizer connection  
Yes Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system  
 Earth lamps also voltmeter selector switch wired to give ground readings Switches, Circuit Breakers and Fusible Cut-outs,  
A.I.E.E. Standards A.I.E.E. Standards  
 do these comply with the requirements of the Rules - are the fusible cutouts of an approved type - have the reversed

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PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ... ..	3	20	120	167	400	Steam Reciprocating	-	-
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED	
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	A.I.E.E. Rule.				
MAIN GENERATOR ... ..	1	.1969	37	.082	167	233 ✓	50	Rubber	L.C. & Basket Weave	Armoured
EQUALISER CONNECTIONS ...	1	.1318	19	.094	-	256 ✓	25	V.C.	" " " "	"
AUXILIARY GENERATOR ... ..										
EMERGENCY GENERATOR ... ..										
ROTARY TRANSFORMER (MOTOR GENERATOR) ...										
Boiler & Engine Room Ltg. L1 ...	1	.0521	7	.097	58	74 <sup>x</sup> ✓	40	Rubber	" " " "	"
BOILER ROOM ... ..										
AUXILIARY SWITCHBOARDS ...										
Salinity Ind Midship Accommodation L4 ...	1	.002	-	-	1	10 <sup>x</sup> ✓	80	"	" " " "	"
Aft Accom L6 ...	1	.0521	7	.097	48	74 <sup>x</sup> ✓	150	"	" " " "	"
Boat Dk. Accom L7 ...	1	.0521	7	.097	25	74 <sup>x</sup> ✓	440	"	" " " "	"
Wheelhouse L8 ...	1	.0829	19	.074	48	100 <sup>x</sup> ✓	190	"	" " " "	"
Gyro Compass L12 ...	1	.020	7	.061	16	41 <sup>x</sup> ✓	240	"	" " " "	"
WIRELESS ... .. P7 ...	1	.013	7	.048	15	41 <sup>x</sup> ✓	200	V.C.	" " " "	"
SEARCHLIGHT ... .. L10 ...	1	.020	7	.061	22	41 <sup>x</sup> ✓	290	Rubber	" " " "	"
MASTHEAD LIGHT ... ..	1	.008	7	.038	5	23 <sup>x</sup> ✓	420	"	" " " "	"
SIDE LIGHTS ... ..	1	.0032	7	.024	.42	11.5 <sup>x</sup> ✓	440	"	" " " "	"
COMPASS LIGHTS ... ..	1	.0032	7	.024	.42	11.5 <sup>x</sup> ✓	110	"	" " " "	"
Bridge Dk. Ltg L9 ...	1	.0829	19	.074	50	100 <sup>x</sup> ✓	200	"	" " " "	"
CARGO LIGHTS Fwd. L2 ...	1	.0521	7	.097	25	74 <sup>x</sup> ✓	420	"	" " " "	"
Aft Midships L3 ...	1	.0829	19	.074	57	100 <sup>x</sup> ✓	190	"	" " " "	"
HEATER-Aft ... .. L5 ...	1	.0521	7	.097	23	74 <sup>x</sup> ✓	270	"	" " " "	"

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
		No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	A.I.E.E. Rule.			
BALLAST PUMP ... ..										
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 ... ..										
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 ... ..										
VENTILATING FANS ... ..										
Refrig. Comp. P8 ...	1	1	.0658	19	.066	59	87 <sup>x</sup> ✓	200	Rubber	IC&Basket Weave Armoured



current protection devices been tested under working conditions Yes Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule A.I.E.E. Standards A.I.E.E. Standards

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

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 3 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 -, 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 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 Clipped to steel supports in accomodation and holds. Protected by sheet metal guards in hold spaces.

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 A.I.E.E. Standards

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 In Junction 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 cables all armoured Cables all armoured holes efficiently bushed / state the material of which the bushes are made -

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Cables effectively earthed.

-, 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 -

Navigation Lamps, are these separately wired Yes, controlled by separate switch and separate fuses Yes are the fuses double pole No A.I.E.E. Standards

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 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 -

Cast Metal Guards

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected -, how are the cables led -

-

where are the controlling switches situated -

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 - are air heaters constructed and fitted as per Rule -

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

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

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 where are they protected from mechanical injury and damage from water, steam or oil Yes are their axes of rotation fore and aft possible 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 Drip proof if not of this type, state distance of the combustible material horizontally or vertically above the motors - and -

have machines of over 100 BPH been inspected by the Surveyors during manufacture and testing - Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule A.I.E.E. Standards 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 type approved by the Home Office -

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



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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.

Electrical Engineers.

Date

#### COMPASSES.

Distance between electric generators or motors and standard compass 26 Feet.

Distance between electric generators or motors and steering compass 20 Feet.

The nearest cables to the compasses are as follows:—

A cable carrying .2 Ampères .75 feet from standard compass .75 feet from steering compass.

A cable carrying 1 Ampères 4 feet from standard compass 7 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 N11 degrees on Any course in the case of the standard compass, and N11 degrees on Any course in the case of the steering compass.

Builder's Signature.

Date

Is this installation a duplicate of a previous case If so, state name of vessel

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

#### Classing:—

The electrical installation to the requirements of the American Bureau of Shipping has been in operation since 1943. The plans attached have been examined and found to be in accordance with A.I.E.E. Marine Standards and generally in accordance with the Rules.

The materials and workmanship are good and the installation has been examined under working conditions and found to be satisfactory.

The dimensions in this Report have been taken from the A.B.S. approved plans. These dimensions have been checked as far as possible on the ship and found correct.

In our opinion, the electrical installation is such as could be accepted by the Committee for Classification.

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... \$100.00 : When applied for, May 13 1947  
Traveling Expenses (if any) \$1.00 : When received, 19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK MAY 7 1947 J. J. J.

Assigned Elec. Light