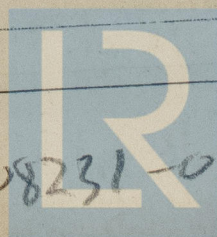


# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 7<sup>TH</sup> JUNE 1930 When handed in at Local Office 19 Port of Boston  
 No. in Survey held at QUINCY Date, First Survey 21<sup>ST</sup> JAN. Last Survey 28<sup>TH</sup> MAY 1930  
 Reg. Book. on the STEEL SCREW MOTOR TANKER "L.T.C. No 1." (Number of Visits 33) Tons { Gross 548  
 Net 321  
 Built at QUINCY By whom built BETHLEHEM S.B. CORP. FORE RIVER Yard No. 1436 When built 1930  
 Owners LAKE TANKERS CORP Port belonging to WILMINGTON DEL.  
 Electric Light Installation fitted by BETHLEHEM S.B. CORP Contract No. 1436 When fitted 1930  
 Is the Vessel fitted for carrying Petroleum in bulk YES

System of Distribution TWO WIRE UNGROUNDED SYSTEM. Rule 110-220  
 Pressure of supply for Lighting 115 VOLTS. volts, Heating 115 VOLTS volts, Power 115 + 230 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 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 YES, 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  
 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 FORWARD END OF 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  
 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 ✓  
 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 EACH GENERATOR HAS A  
2- POLE SWITCH WITH OVER LOAD CIRCUIT BREAKER ON POSITIVE LINE EACH OUTGOING CIRCUIT IS PROTECTED BY  
A D.P. FUSED SWITCH ON DISTRIBUTION BOARD.  
 Instruments on main switchboard 3 ammeters 3 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 GROUND LAMPS  
FOR EACH GENERATOR.  
 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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 Foundation



Cables: Single, twin, concentric, or multicore YES are the cables insulated and protected as per Tables IV or V of the Rules YES AS APPROVED

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 3% BUS BAR PRESSURE

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 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

Support and Protection of Cables, state how the cables are supported and protected STRAP IRON HANGERS SPACED 16" AND IRON CASINGS  
7 KICK PIPES

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 NONE FITTED

Joints in Cables, state if any, and how made, insulated, and protected 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 holes efficiently bushed YES state the material of which the bushes are made CLEARANCE HOLES EDGES ROUNDED OFF

Earthing Connections, state what earthing connections are fitted and their respective sectional areas YES

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule YES, are their connections made as per Rule YES

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven 85 KW. GENERATOR DRIVEN BY WINTON OIL ENGINE, STBD. SIDE OF ENG ROOM

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 NONE FITTED

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 SPECIAL BULKHD LAMPS

FITTED ON PUMPROOM BULKHDS. WHICH OPEN OUTSIDE OF PUMPROOMS

ALL WIRING OUTSIDE OF PUMPROOM

where are the controlling switches situated NEAR ENTRANCE TO PUMPROOMS

Searchlight Lamps, No. of 2, whether fixed or portable FIXED, are their fittings as per Rule YES

Are 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 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 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

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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN <u>EXCITERS</u>	<u>2</u>	<u>200</u>	<u>250</u>	<u>800</u>	<u>375</u>	<u>WINTON OIL ENGS</u>	<u>OIL</u>	<u>NOT LESS 150° F.</u>
AUXILIARY	<u>2</u>	<u>20</u>	<u>125</u>	<u>160</u>	<u>375</u>	"	"	"
EMERGENCY	<u>1</u>	<u>15 KW.</u>	<u>120</u>	<u>125</u>	<u>675</u>	"	"	"
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. of	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	<u>2</u>		<u>.3926</u>	<u>37</u>	<u>.116</u>	<u>800</u>	<u>888</u>	<u>160</u>	<u>RUBBER.</u>	
EQUALISER CONNECTIONS										
AUXILIARY GENERATOR	<u>1</u>		<u>.1045</u>	<u>19</u>	<u>.083</u>	<u>160</u>	<u>184</u>	<u>160</u>	<u>RUBBER.</u>	<u>OVERLOAD FIRE BREAKER POS. POLE</u>
EMERGENCY GENERATOR	<u>1</u>		<u>.1045</u>	<u>19</u>	<u>.083</u>	<u>125</u>	<u>184</u>	<u>150</u>	"	
ROTARY TRANSFORMER										
ENGINE ROOM	<u>25185</u>	<u>1</u>	<u>.003225</u>	<u>7</u>	<u>.024</u>	<u>4.4</u>	<u>13</u>	<u>120</u>	"	<u>15 AMP FUSE</u>
BOILER ROOM										
AUXILIARY SWITCHBOARDS										
ACCOMMODATION										
FORD QUARTERS	<u>1</u>		<u>.02062</u>	<u>7</u>	<u>.061</u>	<u>22</u>	<u>44</u>	<u>240</u>	"	<u>30 AMP FUSE</u>
AFT			<u>.005129</u>	<u>7</u>	<u>.030</u>	<u>18</u>	<u>18</u>	<u>100</u>	"	<u>25 " "</u>
WIRELESS										
SEARCHLIGHT	<u>TWO</u>	<u>1</u>	<u>.008155</u>	<u>7</u>	<u>.038</u>	<u>18</u>	<u>24</u>	<u>200</u>	"	<u>30 AMP. FUSE</u>
MASTHEAD LIGHT	<u>ONE</u>	<u>1</u>	<u>.003225</u>	<u>7</u>	<u>.024</u>	<u>4</u>	<u>13</u>	<u>200</u>	"	<u>5 " "</u>
SIDE LIGHTS	<u>TWO</u>	<u>1</u>	<u>.003225</u>	<u>7</u>	<u>.024</u>	<u>4</u>	<u>13</u>	<u>50</u>	"	<u>5 " "</u>
COMPASS LIGHTS		<u>1</u>	<u>.003225</u>	<u>7</u>	<u>.024</u>	<u>2</u>	<u>13</u>	<u>10</u>	"	<u>10 " "</u>
POOP LIGHTS										
CARGO LIGHTS										
ARC LAMPS										
HEATERS	<u>TWO ONE</u>	<u>1</u>	<u>.005129</u>	<u>7</u>	<u>.030</u>	<u>9</u>	<u>18</u>	<u>60</u>	"	<u>15 AMP FUSE</u>
			<u>.0130</u>	<u>7</u>	<u>.048</u>	<u>26</u>	<u>39</u>	<u>75</u>	"	<u>30 " "</u>

## 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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP <u>IN FORD PUMPROOM</u>	<u>1</u>	<u>1</u>	<u>.05213</u>	<u>7</u>	<u>.097</u>	<u>56</u>	<u>82</u>	<u>406</u>	<u>RUBBER</u>	<u>75 AMP FUSE</u>
MAIN BILGE LINE PUMPS	<u>1</u>	<u>1</u>	<u>.005129</u>	<u>7</u>	<u>.030</u>	<u>14.8</u>	<u>18</u>	<u>128</u>	"	<u>20 " "</u>
GENERAL SERVICE PUMP	<u>1</u>	<u>1</u>	<u>.08289</u>	<u>19</u>	<u>.074</u>	<u>112</u>	<u>113</u>	<u>120</u>	"	<u>150 " "</u>
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR	<u>1</u>	<u>1</u>	<u>.02062</u>	<u>7</u>	<u>.061</u>	<u>40</u>	<u>44</u>	<u>120</u>	"	<u>60 AMP FUSE</u>
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	<u>1</u>	<u>1</u>	<u>.003225</u>	<u>7</u>	<u>.024</u>	<u>10</u>	<u>13</u>	<u>120</u>	"	<u>15 " "</u>
OIL FUEL TRANSFER PUMP										
WINDLASS	<u>1</u>	<u>1</u>	<u>.05213</u>	<u>7</u>	<u>.097</u>	<u>75</u>	<u>82</u>	<u>400</u>	"	<u>100 " "</u>
WINCHES, FORWARD	<u>1</u>	<u>1</u>	<u>.02062</u>	<u>7</u>	<u>.061</u>	<u>37</u>	<u>44</u>	<u>348</u>	"	<u>60 " "</u>
CAPSTAN AFT	<u>1</u>	<u>1</u>	<u>.03278</u>	<u>7</u>	<u>.077</u>	<u>56</u>	<u>60</u>	<u>170</u>	"	<u>75 " "</u>
WINCHES, AFT	<u>1</u>	<u>1</u>	<u>.02062</u>	<u>7</u>	<u>.061</u>	<u>37</u>	<u>44</u>	<u>122</u>	"	<u>60 " "</u>
TOWING MACHINE	<u>1</u>	<u>1</u>	<u>.03278</u>	<u>7</u>	<u>.077</u>	<u>74</u>	<u>76</u>	<u>200</u>	"	<u>100 " "</u>
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	<u>1</u>	<u>4</u>	<u>.008155</u>	<u>7</u>	<u>.038</u>	<u>22.4</u>	<u>24</u>	<u>170</u>	"	<u>30 " "</u>
WORKSHOP MOTOR										
VENTILATING FANS	<u>1</u>	<u>1</u>	<u>.0051</u>	<u>7</u>	<u>.030</u>	<u>19.2</u>	<u>21</u>	<u>40</u>	"	<u>30 " "</u>
REFRIGERATOR	<u>1</u>	<u>1</u>	<u>.003225</u>	<u>7</u>	<u>.024</u>	<u>12</u>	<u>13</u>	<u>200</u>	"	<u>20 " "</u>
TWO FWD. CARGO PUMPS	<u>2</u>	<u>1</u>	<u>.08289</u>	<u>19</u>	<u>.074</u>	<u>126</u>	<u>132</u>	<u>406</u>	"	<u>200 " "</u>
AFT	<u>2</u>	<u>1</u>	<u>.08289</u>	<u>19</u>	<u>.074</u>	<u>126</u>	<u>132</u>	<u>80</u>	"	<u>200 " "</u>

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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.

*Bethlehem Shipbuilding Corp. Ltd.*  
*H. E. Gould. Gen. Manager.*

Electrical Engineers.

Date *JUNE 9<sup>TH</sup> 1930.*

#### COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass *40'*

The nearest cables to the compasses are as follows:—

A cable carrying *.2* Ampères feet from standard compass *1* feet from steering compass.

A cable carrying *.5* Ampères feet from standard compass *5* 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 *✓* degrees on course in the case of the standard compass, and *✓* degrees on course in the case of the steering compass.

*Bethlehem Shipbuilding Corp. Ltd.*  
*H. E. Gould. Gen. Manager.*

Builder's Signature.

Date *JUNE 9<sup>TH</sup> 1930*

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. *THE ELECTRICAL INSTALLATION HAS BEEN BUILT*)

*UNDER SPECIAL SURVEY AND IN ACCORDANCE WITH THE RULES AND APPROVED PLANS. THE QUALITY OF MATERIAL AND WORKMANSHIP IS GOOD AND IN THE OPINION OF THE UNDERSIGNED MERITS THE FAVOURABLE CONSIDERATION OF THE COMMITTEE*

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

*19/7/30.*

Total Capacity of Generators *455* Kilowatts.

The amount of Fee ... £ \$ *75.<sup>00</sup>* : When applied for, *11<sup>TH</sup> JUNE 1930.*

Travelling Expenses (if any) £ *✓* : When received, *27/8/30 ABM.*

Committee's Minute *NEW YORK JUN 15 1930*

Assigned *Elec. light*

*Robert L. Jones*  
Surveyor to Lloyd's Register of Shipping.



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Foundation