

REC'D NEW YORK JUN 25 1930

Rpt. 13.

No. 2548

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 12 JUL 1930

Received at London Office

Date of writing Report JUNE 23 1930 When handed in at Local Office 19 Port of BOSTON

No. in Survey held at QUINCY MASS Date, First Survey JAN 21 Last Survey JUNE 12 1930  
 Reg. Book. (Number of Visits 16)

on the STEEL SCREW MOTOR TANKER "LTC No 2" Tons { Gross 548  
 Net 321

Built at QUINCY MASS By whom built BETHLEHEM S.B. CORP FORE RIVER PLANT. Yard No. 1437 When built 1930

Owners LAKE TANKERS CORP. Port belonging to WILMINGTON DEL

Electric Light Installation fitted by BETHLEHEM S.B. CORP Contract No. 1437 When fitted 1930

Is the Vessel fitted for carrying Petroleum in bulk YES

System of Distribution TWO WIRE UNGROUNDED Rule 110 - 220

Pressure of supply for Lighting 115 volts, Heating 115 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 TWO POLE SWITCH WITH OVERLOAD 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 LAMP 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

**Cables:** Single, twin, ~~conductor~~, or multicore YES are the cables insulated and protected as per Tables IV or V of the Rules YES AS APPROV.

**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 ✓

**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

**Support and Protection of Cables,** state how the cables are supported and protected FLAT IRON STRAPS. PROTECTED BY IRON CASINGS, KICK PIPES.

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 YES.

**Refrigerated Chambers,** if lights are fitted, are the cables and fittings in accordance with the special requirements NONE

**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 ✓ state the material of which the bushes are made CLEARANCE HOLES. EDGES ROUNDED OFF. ALL CABLE ARMOURD

**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 YES

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven 15 KW. GENERATORS DRIVEN BY WINTON OIL ENGINE STB. SIDE OF ENGINE 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 ✓

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 BULKHEAD LAMPS FITTED ON PUMPROOM BULKHEADS. WHICH OPEN OUTSIDE OF PUMPROOMS.

how are the cables led

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

**Arc 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, 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 ✓, if not of this type, state distance of the combustible material horizontally or vertically above the motors ✓ and ✓

**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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN <del>exciters</del>	2	200	250	800	375	WINTON OIL ENGINE	OIL	NOT LESS 150°
AUXILIARY	2	20	125	160	375	" " "	"	" " "
EMERGENCY	1	15	120	125	675	" " "	"	" " "
ROTARY TRANSFORMER								

**GENERATOR, LIGHTING AND HEATING CONDUCTORS.**

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		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	2	.3926	37	.116	800	888	160	RUBBER	
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	.1045	19	.083	160	184	160	"	OVERLOAD CIRC BREAKER POSITIVE POLE
EMERGENCY GENERATOR	1	.1045	19	.083	125	184	150	"	
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM 2.5 I.R.C.	1	.003225	7	.024	4.4	13	120	"	15 AMP FUSE
BOILER ROOM	✓								
AUXILIARY SWITCHBOARDS									
ACCOMODATION									
FORWARD QUARTERS	1	.02062	7	.061	22	44	240	"	30 AMP FUSE
AFTER	1	.005129	7	.030	18	18	100	"	30 " "
WIRELESS									
SEARCHLIGHT T.W.O.	1	.008155	7	.039	18	24	200	"	30 AMP FUSE
MASTHEAD LIGHT	1	.003225	7	.024	14	13	200	"	5 " "
SIDE LIGHTS T.W.O.	1	.003225	7	.024	14	13	50	"	5 " "
COMPASS LIGHTS	1	.003225	7	.024	2	13	10	"	10 " "
POOP LIGHTS									
CARGO LIGHTS									
ARO LAMPS									
HEATERS T.W.O. ONE	1	.005129	7	.030	9	18	60	"	15 AMP FUSE
		.0130	7	.048	26	29	75	"	30 " "

**MOTOR CONDUCTORS.**

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		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 IN FORWARD PUMP ROOM	1	1	.05213	7	.097	56	82	406	RUBBER	75 AMP FUSE
MAIN BILGE LINE PUMPS	1	1	.005129	7	.030	14.9	18	128	"	20 " "
GENERAL SERVICE PUMP	1	1	.08289	19	.074	112	113	120	"	150 " "
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR	1	1	.02062	7	.061	40	44	120	"	60 " "
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	1	1	.003225	7	.024	10	13	120	"	15 " "
OIL FUEL TRANSFER PUMP										
WINDLASS	1	1	.05213	7	.097	75	82	400	"	100 " "
WINCHES, FORWARD	1	1	.02062	7	.061	37	44	340	"	60 " "
CAPSTAN AFT	1	1	.03278	7	.077	56	60	170	"	75 " "
WINCHES, AFT	1	1	.02062	7	.061	37	44	122	"	60 " "
TOWING MACHINE	1	1	.03278	7	.077	74	76	200	"	100 " "
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	4	.008155	7	.038	22.4	24	170	"	
WORKSHOP MOTOR										
VENTILATING FANS	1	1	.0051	7	.030	19.2	21	40	"	30 " "
REFRIGERATOR MOTOR	1	1	.003225	7	.024	12	13	200	"	20 " "
TWO FORWARD CARGO PUMPS	2	1	.08289	19	.074	126	132	406	"	200 " "
" AFTER	2	1	.08289	19	.074	126	132	80	"	200 " "

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.

H. E. Gould, Gen. Manager Electrical Engineers. Date 21 June 30

COMPASSES.

Distance between electric generators or motors and standard compass \_\_\_\_\_  
 Distance between electric generators or motors and steering compass 40 FT.

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.

H. E. Gould, Gen. Manager  
 Bethlehem Shipbldg. Corp. Builder's Signature. Date 21 June 30

Is this installation a duplicate of a previous case YES If so, state name of vessel L.T.C. No 2

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 MATERIAL & 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 BOARD ELEC LIGHT.

Q. 19/7/30

Total Capacity of Generators 455 Kilowatts.

The amount of Fee ... £ 75.00 : When applied for, 24<sup>TH</sup> JUNE 1930

Travelling Expenses (if any) £ : : When received, 25/8/30

B. Stewart  
 Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE. 16 DEC 1930

Assigned Electric light

Im. 12.28.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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