

REC'D NEW YORK

Rpt. 13.

No. 6112

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report MAY 20<sup>th</sup> 1930 When handed in at Local Office MAY 20<sup>th</sup> 1930 Port of PHILADELPHIA  
 No. in Survey held at CHESTER, PA. Date, First Survey APR. 4<sup>th</sup> Last Survey MAY 17<sup>th</sup> 1930  
 Reg. Book. on the M/V "WESTERN SUN" (Number of Visits 14) Tons { Gross 9089  
 Net 5562  
 Built at CHESTER, PA. By whom built SUN S. BK. D. CO. Yard No. 123 When built 1930  
 Owners MOTOR TANKSHIP CORP. Port belonging to PHILADELPHIA  
 Electric Light Installation fitted by SUN S. BK. D. CO. Contract No. 123 When fitted 1930  
 Is the Vessel fitted for carrying Petroleum in bulk YES.

System of Distribution TWO WIRE.  
 Pressure of supply for Lighting 115 volts, Heating — volts, Power 235 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 FLOOR, PORT 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  
ALL STEEL and —, are the generators protected from mechanical injury and damage from water, steam or oil YES DRIP COVERS

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 E. R. FLOOR, PORT SIDE, FORWARD OF GENERATORS.

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 IN SAME SPACE.

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. DRIP COVER., if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards NO WOOD 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 EBONY ASBESTOS USED.

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 CIRCUIT BREAKER AND LINE KNIFE SWITCH NON-FUSED, THE MIDDLE POLE IS USED FOR EQUALIZER, EACH OUT-GOING CIRCUIT HAS TWO-POLE FUSED KNIFE SWITCH.

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.

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, concentric, or multicore. TWIN are the cables insulated and protected as per Tables IV or V of the Rules YES.

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 2%

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 NO PAPER INSULATED CABLES INSTALLED.

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. ALL MAIN CABLES ARE EITHER CARRIED IN GALV CONDUIT OR RUN ON HEAVY SHEET STEEL PANS.

If cables are run in wood casings, are the casings and caps secured by screws NONE, 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 YES (SHIP'S STORES)

Joints in Cables, state if any, and how made, insulated, and protected. JOINTS, WHERE REQUIRED, ARE MADE IN HEAVY BRASS 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 LEAD.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas 2-WIRE SYSTEM.

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. STEAM ENGINE DRIVEN GENERATOR LOCATED IN 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.

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 NONE.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected NONE.

how are the cables led —

where are the controlling switches situated —

Searchlight Lamps, No. of NONE, whether fixed or portable —, are their fittings as per Rule —

Arc Lamps, other than searchlight lamps, No. of NONE, 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 NONE, 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.

Lighting 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 NONE.

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	2	75	240	312		SEISMER DIESEL	OIL FUEL 218° F.	250° F.
AUXILIARY	1	20	240	84		G.E. STEAM ENGINE		
EMERGENCY	—							
ROTARY TRANSFORMER	2	3	120/120	40 AMP NEUTRAL		MOTOR.		

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	1	.510	127	.072	312	332	70	RUBBER	LEADED & ARMORED.
EQUALISER CONNECTIONS	1	.510	127	.072	312	332	70	"	"
AUXILIARY GENERATOR	1	.060	37	.045	83	83	80	"	"
EMERGENCY GENERATOR	—								
ROTARY TRANSFORMER	1	.060	37	.045	40	83	40	"	"
ENGINE ROOM	1	.060	37	.045	40	83	40	"	"
BOILER ROOM	1	.03	19	.045	48	83	30	"	"
AUXILIARY SWITCHBOARDS	—								
ACCOMMODATION	—								
QUARTERS FORP.	1	.0165	7	.057	22	37	400	"	"
" AFT.	1	.03	19	.045	46	83	150	"	"
DECK & FORECASTLE	1	.010	7	.044	19	31	400	"	"
PUMP ROOM.	1	.007	7	.036	8	24	300	"	"
WIRELESS	1	.0165	7	.057	20	37	350	"	"
SEARCHLIGHT	—								
MASTHEAD LIGHT	1	.0032	7	.025	5	12.9	200	"	"
SIDE LIGHTS	1	.0032	7	.025	5	12.9	80	"	"
COMPASS LIGHTS	1	.0032	7	.025	5	12.9	10	"	"
POOP LIGHTS	—								
DECK LIGHTS	—								
ARC LAMPS	—								
HEATERS	—								

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	1	1	.2745	91	.064	210	214	200	RUBBER.	LEADED & ARMORED.
MAIN BILGE LINE PUMPS	—									
GENERAL SERVICE PUMP	—									
EMERGENCY BILGE PUMP	1	1	.0146	7	.052	33	37	100	"	"
SANITARY PUMP	1	1	.022	7	.054	38	46	80	"	"
CIRC. SEA WATER PUMPS	1	1	.0759	19	.072	93	97	80	"	"
CIRC. FRESH WATER PUMPS	2	1	.0759	19	.072	93	97	60	"	"
AIR COMPRESSOR	1	1	.1969	61	.064	160	184	150	"	"
FRESH WATER PUMP	2	1	.018	7	.044	19	31	90	"	"
ENGINE TURNING GEAR	1	1	.060	37	.045	74	83	80	"	"
ENGINE REVERSING GEAR	—									
LUBRICATING OIL PUMPS	2	1	.0146	7	.052	33	37	100	"	"
OIL FUEL TRANSFER PUMP	1	1	.0146	7	.052	33	37	130	"	"
WINDLASS	—									
WINCHES, FORWARD	—									
WINCHES, AFT	—									
STEERING GEAR—										
(a) AUX. MOTOR	1	1	.060	37	.045	72	83	300	"	"
(b) MAIN MOTOR	1	1	.060	37	.045	72	83	300	"	"
WORKSHOP MOTOR	1	1	.0146	7	.052	37	37	60	"	"
VENTILATING FANS	—									

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.

*J. M. Jackson* Electrical Engineers. Date *May 24, 1930*

**COMPASSES.**

Distance between electric generators or motors and standard compass *200 FT.*

Distance between electric generators or motors and steering compass *300 FT.*

The nearest cables to the compasses are as follows:—

A cable carrying *5* Ampères *2* feet from standard compass *2* feet from steering compass.

A cable carrying *3* Ampères *5* feet from standard compass *5* feet from steering compass.

A cable carrying *1* Ampères *6* feet from standard compass *10* 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

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.

*R. L. Burke O.P.* Builder's Signature. Date *May 24, 1930*

Is this installation a duplicate of a previous case *YES.* If so, state name of vessel *"CHESTER SUN"*

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

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

*J. M. [Signature]*  
*24/6/30*

Total Capacity of Generators *170* Kilowatts.

The amount of Fee ... .. £ :	:	When applied for,
<i>Sec N.Y.K. Ls. Nov. 1st, 29</i>	:	..... 19.....
Travelling Expenses (if any) £ :	:	When received,
	:	..... 19.....

*J. Buchanan R. Newell*  
 Surveyors to Lloyd's Register of Shipping.

Committee's Minute *NEW YORK JUN 11 1930*

Assigned *Electric Light*

*Emb. B.*

Im. 12.23.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)