

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

4 APR 1942

Date of writing Report 10<sup>th</sup> Feb 1942 When handed in at Local Office Feb 21 1942 Port of New York  
No. in Survey held at Kearny, New Jersey Date, First Survey 3<sup>rd</sup> Nov 1940 Last Survey 21<sup>st</sup> January 1942  
Reg. Book. on the Tanker "E.W. SINCLAIR" (Number of Visits 22)  
Built at Kearny, New Jersey By whom built Federal Shipbuilding & Dry Dock Co. Yard No. 192 When built 1941  
Owners Sinclair Refining Co. Port belonging to Wilmington, Delaware  
Electric Light Installation fitted by Federal Shipbuilding & Dry Dock Company. Contract No. 192 When fitted 1941  
Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution 2 wire main 2 wire branches.  
Pressure of supply for Lighting 110 volts, Heating none volts, Power 220 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 Yes, is an adjustable regulating resistance fitted in series with each shunt field Yes  
approved Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing 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  
Position of Generators on tween deck starboard side in 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  
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 on engine room tween deck with 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 Yes  
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 Yes, and Yes, 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, 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 Yes, 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 Double pole circuit breaker and triple pole link switch  
Are turbine driven generators fitted with emergency trip switch as per rule Yes, Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material Yes  
Instruments on main switchboard 2 ammeters 2 D.C. voltmeters  
synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection Yes  
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Lamps  
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. 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 single & twin are the cables insulated and protected as per Tables IV, V, X or XI of the Rules Yes

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 2.1 V lighting, 1.1 V power

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 Yes or waterproof insulating tape 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 Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit Lead covered & armoured

Support and Protection of Cables, state how the cables are supported and protected Cables lead covered & armoured throughout and secured to metal bridge pieces with clips welded to plating. Cables from poop to amidships attached to side plating of gang-way.

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, are the cables and fittings in accordance with the special requirements Yes

Joints in Cables, state if any, and how made, insulated, and protected none

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 brushed Yes state the material of which the bushes are made Yes

Earthing Connections, state what earthing connections are fitted and their respective sectional areas none

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

position and method of control of the emergency supply and how the generator is driven 2 Westinghouse DC motors - 15 KW - 240 V - 62 A and 10 KW - 120 V - 83 A driven by a 6 cylinder Hill Diesel Engine & situated on main deck in poop space.

Navigation Lamps, are these separately wired Yes, controlled by separate switch and separate fuses Yes, are the fuses double pole Boat double

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 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 none fitted

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected no

how are the cables led as shown

where are the controlling switches situated Yes

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 none, are air heaters constructed and fitted as per Rule none

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

Arc Lamps, other than searchlight lamps, No. of none, 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 & vertical, 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

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing Yes

Control Gear and Resistances, are the generator

field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes

are required, are these fitted as per Rule not fitted 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 are all fuses of the filled cartridge type Yes are they of an approved type Yes

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office Yes

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule 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	2	250	240	1300	1200	2c Laval steam turbines with reduction gears.		
AUXILIARY	1	15	240	62	1400	Hill Diesel Engine	Diesel oil	above 150°F.
EMERGENCY	1	10	120	83	"	"		
ROTARY TRANSFORMER	2	25	120	208	1750	Compound wound motor.		

## 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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	3	1	1.174	37	.116"	1300	1.332	40 ft	Varnished cambric	Lead covered and armoured.
EQUALISER CONNECTIONS	2	1	.784	37	.116"			20 "	"	"
AUXILIARY GENERATOR	1	1	.051	7	.097"	100	115	100 ft	"	"
EMERGENCY GENERATOR	1	1	.0829	19	.074"	104	158	20 "	"	"
ROTARY TRANSFORMER	1	1	.1969	39	.082"	208	280		"	"
ENGINE ROOM	1	1	.1045	19	.083"	81	184	50 "	"	"
BOILER ROOM	1	1	.083	19	.074"	72	158	100 "	"	"
AUXILIARY SWITCHBOARDS	1	1	.083	19	.074"	54	158	100 "	"	"
Upper Deck Port No. 2	1	1	.083	19	.074"	42	158	100 "	"	"
" " Starboard No. 3	1	1	.083	19	.074"	42	158	100 "	"	"
Boat Deck No. 4	1	1	.083	19	.074"	42	158	150 "	"	"
Bridge Deck No. 5	1	1	.4715	61	.099"	56	501	500 "	"	"
Running Lights	1	1	.026	7	.069"	6	42	500 "	"	"
ACCOMMODATION	1	1	.0033	4	.024"	18	Various lights		"	"
Branch Circuits	1	1	.0033	4	.024"	18	Various lights		"	"
WIRELESS	1	1	.052	7	.087"	26	115	500 ft	"	"
SEARCHLIGHT	1	1	.083	19	.074"	1	18	400 "	"	"
MASTHEAD LIGHT	1	1	.083	19	.074"	1	18	50 "	"	"
SIDE LIGHTS	1	1	.083	19	.074"	1	18	50 "	"	"
COMPASS LIGHTS	1	1	.083	19	.074"	1	18	50 "	"	"
POOP LIGHTS	1	1	.083	19	.074"	1	18	50 "	"	"
Cargo Lights Deckmessing.	1	1	.1045	19	.083"	103	184		"	Lead & bronze armoured
ARC LAMPS	1	1	none						"	
HEATERS	1	1	none						"	

## 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.	Rule.			
BALLAST PUMP	1	1	.005	7	.030"	8	25	80 "	"	"
MAIN BILGE LINE PUMPS	1	1	.027	37	.097"	32	300	80 ft	Varnished cambric	Lead covered and armoured.
GENERAL SERVICE PUMP	1	1	.005	7	.030"	8	25	80 "	"	"
EMERGENCY BILGE PUMP	1	1	.005	7	.030"	8	25	80 "	"	"
SANITARY PUMP	1	1	.005	7	.030"	8	25	80 "	"	"
CIRC. SEA WATER PUMPS	1	1	.035	37	.090"	268	316	80 "	"	"
CIRC. FRESH WATER PUMPS	1	1	.005	7	.030"	8	25	80 "	"	"
AIR COMPRESSOR	1	1	.005	7	.030"	8	25	80 "	"	"
FRESH WATER PUMP	1	1	.005	7	.030"	8	25	80 "	"	"
ENGINE TURNING GEAR	1	1	.016	7	.057"	29	53	80 "	"	"
ENGINE REVERSING GEAR	1	1	.04	7	.086"	56	98	80 "	"	"
LUBRICATING OIL PUMPS	1	1	.04	7	.086"	56	98	80 "	"	"
OIL FUEL TRANSFER PUMP	1	1	.04	7	.086"	56	98	80 "	"	"
WINDLASS	1	1	.04	7	.086"	56	98	80 "	"	"
WINCHES, FORWARD	1	1	.04	7	.086"	56	98	80 "	"	"
WINCHES, AFT	1	1	.04	7	.086"	56	98	80 "	"	"
STEERING GEAR—										
(a) Motor Generator	2	1	.1969	39	.082"	163	280		"	"
(b) MAIN MOTOR	4	1	.05	7	.097"	54	115		"	"
WORKSHOP MOTOR	1	1	.005	7	.030"	8	25		"	"
VENTILATING FANS	1	1	.05	7	.097"	33	115		"	"



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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.

✓ J.H. Osborne Electrical Engineers. Date Feb. 14, 1942  
for Federal Shipbuilding & Dry Dock Co.

#### COMPASSES.

Distance between electric generators or motors and standard compass 300 feet

Distance between electric generators or motors and steering compass " "

The nearest cables to the compasses are as follows:—

A cable carrying 1/4 Ampères close to feet from standard compass close to feet from steering compass.

A cable carrying 6 Ampères about 15 feet from standard compass about 15 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.

Federal Shipbuilding & Dry Dock Co.  
J.H. Osborne Builder's Signature. Date Feb 14, 1942

Is this installation a duplicate of a previous case Yes If so, state name of vessel "Albert B. Watts" - "Patrick J. Hurley"

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

The Electrical Installation has been built under Special Survey in accordance with the Rules. It has been satisfactorily tried out at full load and it is now in good and safe working condition and the vessel, in my opinion, is fit to receive notation of classification in the Register Book.

Noted  
L.P.  
14/4/42

Total Capacity of Generators 515 Kilowatts.

The amount of Fee ... \$214.<sup>00</sup> : When applied for, 11-2-1942  
When received, 19  
Travelling Expenses (if any) £ : :

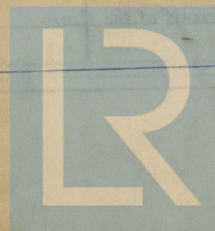
E. S. Whitham  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK FEB 25 1942

Assigned

Elec. light



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Foundation