

Rpt. 13.

No. 41921

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

21 MAY 1941

Date of writing Report Dec 12 1941 When handed in at Local Office

Received at London Office

Port of New York

No. in Survey held at Quincy, Mass.

Date, First Survey Aug 23 Last Survey Sept 18 1941

Reg. Book.

(Number of Volts 440)

on the Steel, Single Screw Tanker "SINCLAIR RUBINENE"

Tons { Gross 7874  
Net 4596

Built at Quincy, Mass. By whom built Benjamin Iron Co. Yard No. 1489 When built 1941

Owners Sinclair Refining Co. Port belonging to Quincy, Mass.

Electric Light Installation fitted by Benjamin Iron Co. Contract No. 1489 When fitted 1941

Is the Vessel fitted for carrying Petroleum in bulk YES

System of Distribution TWO WIRE - DIRECT CURRENT

Pressure of supply for Lighting 120 Volts volts, Heating \_\_\_\_\_ volts, Power 240 ✓ volts.

Direct or Alternating Current. Lighting DIRECT CURRENT 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 YES, are they compound wound YES  
are they over compounded 5 per cent. \_\_\_\_\_, 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 YES Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing YES *no record*

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 ON FLAT IN ENGINE ROOM ON STBD SIDE OF VESSEL, 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 ON FLAT OUTBOARD OF GENERATORS STBD SIDE  
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

is it of an approved type YES, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite 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 YES, accessibility of all parts YES, absence of fuses on back of board NO, 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 GENERATORS CONNECTED TO MAIN SWITCHBOARD BY DIRECT CURRENT CIRCUITS. EACH CIRCUIT PROVIDED WITH INDIVIDUAL CIRCUIT BREAKER.

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 ALL OPEN Instruments on main switchboard FOUR ammeters FOUR 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 GLOW LAMPS AND MINUTE VOLTAGE READING

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 \_\_\_\_\_



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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 YES are the cables insulated and protected as per Tables IV, V, X or XI of the Rules YES - AND A.I.E.E.

If the cables are insulated otherwise than as per Rule, are they of an approved type NO **Fall of Pressure, state maximum between bus bars and**

any point of the installation under maximum load 5 1/2 POUNDS 3 1/2 LIGHTNING **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 Cambrie Insulated Cables.**

If conductors are paper or varnished cambrie 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 NO **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** SINGLE CABLES SECURED BY SCREWED CAPS

DOUBLE CABLES BY SCREWED CAPS WITH GLASS CHIPS AND SILENT CAPS.

If cables are run in wood casings, are the casings and caps secured by screws NO, are the cap screws of brass NO, are the cables run in

separate grooves NO 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** ALL JOINTS MADE IN ST. METAL 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 ALUMINUM

**Earthing Connections, state what earthing connections are fitted and their respective sectional areas** TERMINALS OF ALL CABLES,

TERMINALS OF DISTRIBUTION BOARDS, PANELS AND MOTORS.

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 EMERGENCY GENERATOR LOCATED IN

THE HULL AND CONTROL ROOM - MANUAL CONTROL - DIESEL POWERED.

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

are the switches and fuses grouped in a position accessible only to the officers on watch YES - ON PANEL IN PILOT HOUSE

has each navigation lamp an automatic indicator as per Rule YES **Secondary Batteries, are they constructed and fitted as per Rule** YES (CHINA ONLY)

**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 NO - METAL

WALD IN ALL WATER TIGHT SPACES

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

ALL OF THE EXHAUST HOLES CONSTRUCTED IN ENGINE ROOMS, how are the cables led

where are the controlling switches situated OUTSIDE OF COMPARTMENT

are all fittings suitably ventilated NO, 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** YES, are air heaters constructed and fitted as per Rule NO - NOT INSTALLED

**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** ONE, are their live parts insulated from the frame or case NO, are their fittings as per Rule NO

**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 NO - NOT INSTALLED

if not of this type, state distance of the combustible material horizontally or vertically above the motors NO and NO

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 **Lightning Conductors, where lightning conductors**

are required, are these fitted as per Rule NO **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 NO

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



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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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ... ..	2	200	240	2080		TURBINE DRIVEN		
AUXILIARY ... ..	2	20	220	416		240V MOTOR		
EMERGENCY ... ..	1	15	240	78		DIESEL		
	1	10	120	104				
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR ... ..	2	650,000			1040	1060 ✓	70	VAN-CAMBRIC	LEAD-ROCKE HEAT
EQUALISER CONNECTIONS ... ..	1	650,000				530 ✓	35		
AUXILIARY GENERATOR ... ..	1	212,000			208	251 ✓	60		
EMERGENCY GENERATOR ... ..	1	106,000			78	125 ✓	60		
EMERGENCY GENERATOR ... ..	1	106,000			104	155 ✓	60		
ROTARY TRANSFORMER MOTOR GENERATOR ... ..									
ENGINE ROOM ... ..									
BOILER ROOM ... ..	1	113,000			73	184 ✓	240		
AUXILIARY SWITCHBOARDS ... ..									
ANCHORS ... ..	41	600,000			132	501 ✓	640		
PROP. LIGHT ... ..	12	83700			128	154 ✓	120		
STRO ... ..	23	66400			69	83 1/8 ✓	100		
ACCOMMODATION ... ..									
WIRELESS ... ..	1	66400			30	83 1/8 ✓	660		
SEARCHLIGHT ... ..									
MASTHEAD LIGHT ... ..									
SIDE LIGHTS ... ..									
COMPASS LIGHTS ... ..									
POOP LIGHTS ... ..									
CARGO 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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ... ..	1	1	41,200			38	63 9/8 ✓	160	VAN-CAM LEAD-ROCKE HEAT	
MAIN BILGE LINE PUMPS ... ..										
GENERAL SERVICE PUMP ... ..										
EMERGENCY BILGE PUMP ... ..										
SANITARY PUMP ... ..	1	1	10400			20	25.5 3/4 ✓	140		
CIRC. SEA WATER PUMPS ... ..	1	1	212000			788	251 ✓	80		
CIRC. FRESH WATER PUMPS ... ..										
AIR COMPRESSOR ... ..	1	1	212000			178	251 ✓	200		
FRESH WATER PUMP ... ..	1	1	4110			5	13 ✓	180		
ENGINE TURNING GEAR ... ..	1	1	26300			19	46.5 7/8 ✓	140		
ENGINE REVERSING GEAR ... ..										
LUBRICATING OIL PUMPS ... ..	1	1	66400			57	83 1/8 ✓	140		
OIL FUEL TRANSFER PUMP ... ..										
WINDLASS ... ..										
WINCHES, FORWARD ... ..										
WINCHES, AFT ... ..										
STEERING GEAR—										
(a) MOTOR GENERATOR ... ..										
(b) MAIN MOTOR ... ..	2	1	21200			128	251 ✓	120		
WORKSHOP MOTOR ... ..	4	1	66400			68	83 1/8 ✓	180		
VENTILATING FANS ... ..										
ENGINE ROOM FANS ... ..	2	1	83700			91	98 1/4 ✓	220		



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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 Twenty Feet to Motor Generator for Gyro Compass

Distance between electric generators or motors and steering compass Twenty Feet

The nearest cables to the compasses are as follows:—

A cable carrying \_\_\_\_\_ Ampères \_\_\_\_\_ feet from standard compass \_\_\_\_\_ feet from steering compass.

A cable carrying \_\_\_\_\_ Ampères \_\_\_\_\_ feet from standard compass \_\_\_\_\_ 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 2 1/2 degrees on \_\_\_\_\_ course in the case of the standard compass, and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

Bethlehem Steel Company, Shipbuilding Division, Fore River Yard.

L. S. Currier.

Builder's Signature.

Date Nov 24, 1941

General Manager

Is this installation a duplicate of a previous case YES If so, state name of vessel "SINCLAIR OMAHA"

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

THE ELECTRICAL MACHINERY AND EQUIPMENT OF THIS VESSEL HAS BEEN BUILT UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE REGULATIONS AND REQUIREMENTS OF THE SOCIETY. THE ELECTRICAL UNITS WITH ALL FITTINGS, CABLES, AND FASTENINGS HAVE BEEN CAREFULLY INSTALLED ON BOARD THE VESSEL IN COMPLIANCE WITH THE RULES. THE MATERIALS AND WORKMANSHIP ARE GOOD. THE ENTIRE ELECTRICAL SYSTEM WAS SATISFACTORILY TESTED UNDER FULL WORKING LOAD CONDITIONS AND FOUND SATISFACTORY. IN MY OPINION THE ELECTRICAL EQUIPMENT IS ELIGIBLE TO BE CLASSED AND RECORDED. FOR FURTHER PARTICULARS SEE BOSTON REPORT N<sup>o</sup> 3668 AND 3669; ALSO CLEVELAND REPORTS C-2798 AND C-2799.

not received

Noted  
J.H.  
26/5/42.

Total Capacity of Generators 425 Kilowatts.

The amount of Fee ... \$ 215.25 } When applied for, Dec 31 1941  
Travelling Expenses (if any) £ : : } When received, 19

P. J. Anderson Jr  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK DEC 30 1941

Assigned Elec. light.

2nd Ed. L. - Transfer. The Registrar requests that you write on or below the space for Committee's Minute.



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