

Rpt. 13.

No. 49002

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 7 Feb. 1949 When handed in at Local Office 7 Feb. 1949 Received at London Office 2 APR 1949 Port of New York

No. in Survey held at Brooklyn, N.Y. Date, First Survey 27 Sept. 48 Last Survey 27 Jan. 1949
Reg. Book. (No. of Visits 10)

on the TWIN SCREW M/V LIDIA ex L.S.T. 198 Tons { Gross.....
Net.....

Built at Seneca, Ill. By whom built Chicago Bridge & Iron Co. Yard No. When built 1943

Owners Shell Caribbean Petroleum Co. Port belonging to Maracaibo

Conversion Installation fitted by Wodd Shipyards Corp., Brooklyn Division When fitted 1949

Is vessel equipped for carrying Petroleum in bulk Yes Is vessel equipped with D.F. E.S.D. Gy.C. Sub.Sig. Radar

Plans, have they been submitted and approved Yes System of Distribution Two-Wire Voltage of Lighting 115

Heating Power 230 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted with a trip switch Generators, are they shunt wound Yes, and level compounded under working conditions

if not compound wound state distance between generators 10' and from switchboard 15' Are the generators arranged to run in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

 Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing U.S. Navy Standards Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule

Position of Generators in Generator Room 3rd Dk Level

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes Switchboards, where are main switchboards placed Aft of Generators

in Generator Room

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes, what insulation is used for the panels Ebony Asbestos, if of synthetic insulating material is it an Approved Type , if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear for each generator and arrangement of equaliser switches Three pole linked circuit breaker with overload and reverse current trips and a three pole linked isolating switch, only two main poles used in each instance as system of distribution was changed from three-wire to two-wire at this time in accordance with the requirements of section 15 of the Rules. and the switch and fuse gear (or circuit breakers) for each outgoing circuit. Two pole linked switches and fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 4 ammeters 2 voltmeters synchronising devices For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection Earth Testing, state means provided earth lamps.

Switches, Circuit Breakers and Fuses, are they as per Rule A.I.E.E. Standards , are the fuses an Approved Type A.I.E.E. Standards make of fuses various, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 450 amps., and at what current do the reversed current protective devices operate 40 amps.

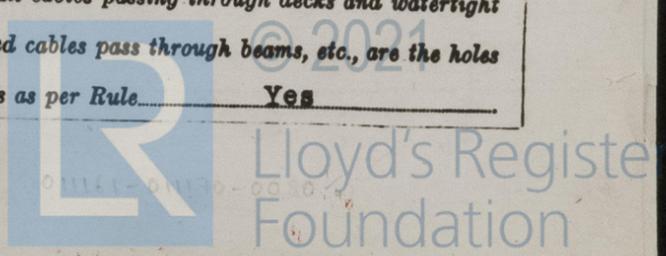
Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule A.I.E.E. Standards

Cables, are they insulated and protected as per Rule , if otherwise than as per Rule are they of an Approved Type A.I.E.E. Standards state maximum fall of pressure between bus bars and any point under maximum load , are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets Yes Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes, are any cables laid under machines or floorplates Yes, if so, are they adequately protected Yes Are cables in machinery spaces, galleys, laundries, etc., lead covered 1 or run in conduit

or of the "HR" type State how the cables are supported or protected Clipped to Steel Brackets in Engine Room and Accomodation, also run in a substantial Steel Channel on Deck protected by Sheet Iron Plating where liable to the risk of mechanical damage.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes Retrigrated chambers, are the cables and fittings as per Rule Yes

Self



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes Emergency Supply, state position

Navigation Lamps, are they separately wired Yes controlled by separate double pole switches and fuses Yes Are the switches and fuses in a position accessible only to the officers on watch Yes, is an automatic indicator fitted Yes Is an alternative supply provided Yes

Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes
state battery capacity in ampere hours Main Eng. Starting Batteries 426 A.H.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes
Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present Yes
if so, how are they protected Pump Rooms lighted through gas tight Ports.

and where are the controlling switches fitted in safe position outside compartment Are all fittings suitably ventilated Yes

Searchlight Lamps, No. of -, whether fixed or portable -, are they of the carbon arc or of the filament type -

Heating and Cooking, is the general construction as per Rule -, are the frames effectually earthed -, are heaters in the accommodation of the convection type - Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil A.I.E.E. Standards.
Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment Yes Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing -
Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule -
A.I.E.E. & U.S. Navy Standards

Control Gear and Resistances, are they constructed and fitted as per Rule 1 Lightning Conductors, where required are they fitted as per Rule - Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with 1, are all fuses of an Approved Cartridge Type 1, make of fuse Shawmut Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships Yes Are the cables lead covered as per Rule 1
See General Remarks A.I.E.E. Standards
See General Remarks

E.S.D., if fitted state maker - location of transmitter - and receiver -

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations Yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory Yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	Delco	100	240	417	1200	Diesel	Superior Diesel.
Ltg.M/G Sets	2	Delco	15	120	124	1450	Elect. Motor	General Electric
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (Lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands - Sq. ins. or sq. mm.	In the Circuit.	A.I.E.E. Rule.			
MAIN GENERATOR ...	100	2	.5490	417	834	-	V.C.	L.C. & Armoured.
" " EQUALISER ...								
EMERGENCY GENERATOR ...	25 H.P.	1	.0658	93	160	-	V.C.	do
" " GENERATOR...	15	1	.1318	124	256	-	V.C.	"

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.								
Boiler Rm. Aux.Pwr.Pnl.	F.B.235	1	.0206	30	55.5	-	V.C.	L.C. & Armoured
Aux.Mach. Rm.Pwr.Pnl.	F.B.221	1	.0521	50	99	-	do	do
Eng. Rm.Pwr. Pnl.	F.B.219	1	.1045	120	158	-	"	"
I. C. Panel	F.B.231	1	.0206	40	55.5	-	"	"
Galley Pwr. Pnl.	F. 233	1	.0829	44	134	-	"	"
Power Pnl. Ventiltn. Aft F	242	1	.0206	32	55.5	-	"	"
Refrig. Panel		1	.0329	30	75	-	"	L.C. & Armoured.

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.		CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet plus (over) feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands - Sq. ins. or sq. mm.	In the Circuit.	A. I. E. Rule.			
Eng. Rm. Lighting	F B 101	1	.0329	35.6	75	-	V.C.	L.C. & Armoured
Generator Room Lighting	F B 102	1	.0082	16.5	30	-	V.C.	do
Main Deck Lighting	F B 103	1	.0329	29.4	75	-	V.C.	"
Main Deck Lighting	F B 104	1	.0329	33.3	75	-	V.C.	"
2nd & 3rd Deck Lighting	F B 105	1	.0329	38.7	75	-	V.C.	"
Navigation Lights	F B 106	1	.0082	2.6	30	-	V.C.	"
Boat Dk. Lighting	F B 107	1	.013	21	41	-	V.C.	"
Poop Dk. "	F B 108	1	.0329	29.4	75	-	V.C.	"
Shore Conn. Box		1	.4715	300	596	-	V.C.	"
P & S Prop. Diesel Eng. Control		1	.0082	20	30	-	V.C.	L.C. & Armoured
Prop. Diesel Starting Battery	F 43	1	.0329	44	75	-	V.C.	do
Gyro Compass		1	.0082	16	30	-	V.C.	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Fwd. Warping Winch FB237	1	50	1	.1969	185	333	-	V.C.	L.C. & Armoured
P & S Anchor (each)	1	20	1	.0829	75	134	-	V.C.	do
Windlass F239 & F223									
Fuel Oil Trans. Pump	1-FB221	3	1	.0082	11.6	30	-	V.C.	"
Fuel Oil Purifier Pump	2-FB-221	1.5	1	.0032	6.4	11.5	-	R.I.	"
Lub. Oil Purifier Pump	1-FB-219	1.5	1	.0032	6.4	11.5	-	R.I.	Rubber Sheathed & Armoured.
Lub. Oil Transfer Pump	2 FB-219	3	1	.0082	11.8	23	-	R.I.	do
2-Air Compressors (each)	1	3	1	.0082	11.8	23	-	R.I.	"
2-Red. Gear Lub. Oil & Salt Water Circ. (each)	1	3	1	.0082	11.9	23	-	R.I.	"
Red Gear Lub. Oil Standby Pump	1	1.5	1	.0032	6.4	11.5	-	R.I.	"
Priming Pump No. 2	8-FB-219	2	1	.0082	7.7	23	-	R.I.	"
2-F.W. Pumps (each)	1	3	1	.0082	12	23	-	R.I.	"
2-Ballast Pumps (each)	1	30	1	.1318	110	256	-	V.C.	L.C. & Armoured
2-Fire & Bilge Pumps (each)	1	30	1	.1659	109	217	-	V.C.	do
Refrig. Comp.	1	7.5	1	.0206	28	55.5	-	V.C.	"
Warping Winch Aft	1	20	1	.1045	76	158	-	V.C.	"
Steering Gear	1	10	1	.0329	37	75	-	V.C.	"
Bilge Pump	1	3	1	.0082	11.6	30	-	V.C.	"
Priming Pump No. 1	5-FB221	2	1	.0082	7.7	30	-	V.C.	"
Boiler Feed Pump	2-FB-235	1	1	.0032	4	11.5	-	R.I.	"
Vent Fan	3-FB-235	1/3	1	.0032	2	11.5	-	R.I.	"
2-Vent Fans, each	3 & 4 FB-221	1/2	1	.0032	2.5	11.5	-	R.I.	"
4-Vent Fans, each		1.75	1	.0032	7.3	11.5	-	R.I.	"



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The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.
 All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.
 The foregoing is a correct description.

Electrical Contractors. Date.....

COMPASSES.

Have the compasses been adjusted under working conditions. Yes

Builder's Signature. Date.....

Have the foregoing descriptions and schedules been verified and found correct. Yes

Is this installation a duplicate of a previous case. Yes If so, state name of vessel. M/V LINDA

Plans. Are approved plans forwarded herewith. No If not, state date of approval. Oct. 5th & Nov. 4th, 1948.

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. -

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

CLASSING: The electrical installation to A.I.E.E. & United States Navy Standards has been in operation since 1943 with the exception of the new accommodation lighting wiring, wiring on deck, and two surplus U.S. Navy 120 volts, Direct Current, 15 KW motor-generator sets installed at this time to take care of lighting and in order to comply with Section 15 of the Rules for Electrical Equipment, since the system of distribution was originally three-wire 240/120 volts with direct current and was changed at this time to two-wire 240 volts.

The plans submitted have been examined and found to be in accordance with A.I.E.E. Standards and generally in accordance with the Rules. No exception was taken to the U.S. Navy type H.F.A. cables fitted in the Engine Room which are not lead sheathed, as all new wiring installed was lead covered and armoured as required by the Rules and the armouring of the existing cables was effectively earthed.

The dimensions in this report have been taken from the approved plans and these dimensions have been checked as far as possible on the ship and found correct.

The materials and workmanship are good and the installation has been examined and tested as per Rule and found to be satisfactory.

In our opinion the electrical installation is such as could be accepted by the Committee for Classification.

Total Capacity of Generators 200 Kilowatts.

The amount of Fee ...	£ \$200.00	:	When applied for,
Exp.	\$6.00	:	Feb. 18 1949
Travelling Expenses (if any) £	:	:	When received,
		:	19

Noted sub 10/5/49

W. S. Keller & H. G. Donald
 Surveyors to Lloyd's Register of Shipping.

Committee's Minute **NEW YORK MAR 16 1949** *HP*

Assigned *Elec. light.*