

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 18/8/47 When handed in at Local Office 18/8/47 Port of GENOVA  
 No. in Survey held at GENOVA Date, First Survey 31/3/47 Last Survey 7/5/47 1947  
 Reg. Book. M/S. SERGIO LAGHI (Number of Visits.....)  
 on the MONFALCONE Tons { Gross 10495  
 Net 6182  
 Built at MONFALCONE By whom built C.R.D.A. - CANT. MONFAL. Yard No. 1857 When built 1942  
 Owners A.G.I.P. - (AZIENDA GENERALE - I.T. PET.) Port belonging to ROMA  
 Electrical Installation fitted by C.R.D.A. - O.E.M. MONFALCONE Contract No. ✓ When fitted 1942  
 Is vessel fitted for carrying Petroleum in bulk YES Is vessel equipped with D.F. ✓ E.S.D. ✓ Gy.C. ✓ Sub.Sig. ✓

Have plans been submitted and approved YES System of Distribution TWO-WIRE WITH BOTH POLES INSULATED Voltage of supply for Lighting 220  
 Heating 220 Power 220 Direct or Alternating Current, Lighting DIRECT Power DIRECT If Alternating Current state periodicity — Prime Movers, —  
 has the governing been tested and found as per Rule when full load is suddenly thrown on and off YES Are turbine emergency governors fitted with a trip switch as per Rule — Generators, are they compound wound YES are they level compounded under working conditions YES, if not compound wound state distance between generators — and from switchboard — Where more than one generator is fitted are they arranged to run in parallel YES, are shunt field regulators provided YES Is the compound winding connected to the negative or positive pole NEGATIVE Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing — Have certificates of test for machines under 100 kw. been supplied — and the results found as per rule — Are the lubricating arrangements and the construction of the generators as per rule YES Position of Generators IN ENGINE ROOM is the ventilation in way of generators satisfactory YES are they clear of inflammable material YES, if situated near unprotected combustible material state distance from same horizontally — and vertically — are the generators protected from mechanical injury and damage from water, steam and oil YES, are the bedplates and frames earthed YES and the prime movers and generators in metallic contact YES Switchboards, where are main switchboards placed IN ENGINE ROOM are they in accessible positions, free from inflammable gases and acid fumes YES, are they protected from mechanical injury and damage from water, steam and oil YES, if situated near unprotected combustible material state distance from same horizontally — and vertically —, what insulation material is used for the panels MICA - MICANITE & BAKELITE, 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 frame effectually earthed YES Is the construction as per Rule YES, including accessibility of parts YES, absence of fuses on the back of the board YES, individual fuses to pilot and earth lamps, voltmeters, etc., YES locking of screws and nuts YES, labelling of apparatus and fuses YES, fuses on the "dead" side of switches — Description of Main Switchgear for each generator and arrangement of equaliser switches DOUBLE POLE CIRCUITS BREAKER, WITH OVERLOAD AND REVERSE-CURRENT TRIPS WITH SINGLE POLE INTERLOCKED SWITCH and for each outgoing circuit DOUBLE POLE CIRCUIT BREAKER OR SWITCH AND FUSES Are compartments containing switchboards composed of fire-resisting material or lined as per Rule YES Instruments on main switchboard 14 ammeters 5 voltmeters — synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection YES Earth Testing, state means provided TWO INDICATING LAMPS AND 1 VOLTMETER Switches, Circuit Breakers and Fuses, are they as per Rule YES, are the fuses an approved type YES, are all fuses labelled as per Rule YES If circuit breakers are provided for the generators, at what overload current did they open when tested 25%, are the reversed current protection devices connected on the pole opposite to the equaliser connection YES, have they been tested under working conditions, and at what current did they operate 10% OF THE RATED CURRENT Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule YES Cables, are they insulated and protected as per the appropriate Tables of the Rules YES, if otherwise than as per Rule are they of an approved type — 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 0.04 square inch and above provided with soldering sockets YES Are paper insulated and varnished cambric insulated cables sealed at the ends —



with insulating compound — or waterproof insulating tape. — 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 cables laid under machines or floorplates. NO if so, are they adequately protected — Are cables in machinery spaces, galleys, laundries, etc., lead covered. YES or run in conduit. — State how the cables are supported and protected. BY METAL CLIPS

Are all lead sheaths, armouring and conduits effectually bonded and earthed. YES Refrigerated chambers, are the cables and fittings as per Rule. 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 and with what material. LEAD Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. YES Emergency Supply, state position. GENERATOR AND SWITCHBOARD ON MAIN DECK. and method of control. INDEPENDENT DIESEL MOTOR.

Navigation Lamps, are they separately wired. YES controlled by separate double pole switches. YES 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 Secondary Batteries, are they constructed and fitted as per Rule. YES, are they adequately ventilated. YES what is the battery capacity in ampere hours. 4 x 40 AMP/H.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. YES Are 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.

FLAME PROF. - GAS-TIGHT.

and where are the controlling switches fitted. OUTSIDE OF SPACE, are all fittings suitably ventilated. YES

are all fittings and accessories constructed and installed as per Rule. YES Searchlight Lamps, No. of. 1, whether fixed or portable. FIXED

are their fittings as per Rule. YES Heating and Cooking, is the general construction as per Rule. YES

are the frames effectually earthed. YES, are heaters in the accommodation of the convection type. YES Motors, are all motors constructed and

installed as per Rule. YES and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water,

steam and oil. YES, if situated near unprotected combustible material state minimum distance from same horizontally. — and vertically. — Are

motors coupled to oil fuel transfer and unit 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. NO Have certificates of test for motors under

100 BHP intended for essential services been supplied and the results found as per Rule. NO Control Gear and Resistances, are they constructed and

fitted as per Rule. YES Lightning Conductors, where required are they fitted as per Rule. YES 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. YES, are all fuses of the cartridge type. YES

are they of an approved type. YES 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. YES Spare Gear, if the vessel is for open sea service have spares been provided as per

Rule. YES, are they 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	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	3	185	280	570	375	DIESEL ENGINE	HAVY OIL	150°F
	1	50	280	587	750	STEAM ENGINE	—	—
EMERGENCY ...	1	85	280	435	650	DIESEL ENGINE	HAVY OIL	150°F
ROTARY TRANSFORMER	—	—	—	—	—	—	—	—

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.				
3 MAIN GENERATOR 3 ...	185	2	0.30	570	59	COMPRESSED AIR INSULATED CABLES.	COPPER
" " EQUALISER ...	—	1	0.15	285	29		SHEAT
1 " " ...	50	1	0.1	287	98		—
" " " ...	—	1	0.03	113.5	49	—	—
1 EMERGENCY GENERATOR ...	85	1	0.04	113.5	12	—	—
ROTARY TRANSFORMER: MOTOR	—	—	—	—	—	—	—
" " GENERATOR ...	—	—	—	—	—	—	—

#### MAIN DISTRIBUTION CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.
			In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...	2	0.22	495	130	348	COMP. MAGNES. OXIDE	COPPER
MOORING WINCHES SUBSTATION	1	0.0185	69	100	181	CAB.	SHEAT.
AFT. LIGHT SUBSTATION	1	0.1	79.1	245	635	—	—
MIDSHIP " "	1	0.08	68.6	280	1162	—	—
FORE " "	3	0.6	150	1010	1130	—	—
" POWER " "	1	0.15	197.1	330	685	—	—
MIDSHIP " " HEATING SUBSTATION	1	0.11	178.7	265	123	—	—
AFT " " " "	1	0.04	99.6	145	118	—	—
ENGINE POWER DISTRIBUTION BOARD	1	0.05	145.5	165	836	—	—
" " " " " "	1	0.0145	14.6	85	69	—	—
WORKSHOP DISTRIBUTION BOARD	1	0.06	183.2	190	140	—	—
GALLEY AND BAKERY DIST. BOARD	1	0.0125	36	43	245	—	—
BOILER VENTILATOR DISTRIBUTION BOARD	1	—	—	—	—	—	—

#### LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.
			In the Circuit.	Rule.			
WIRELESS ...	1	0.0145	20	85	268	COMPRES. MAGNES. OXIDE.	COPPER
NAVIGATION LIGHTS ...	1	0.003	145	30	255	—	SHEAT
LIGHTING AND HEATING ...	1	0.0062	16.6	48	218	—	—
ENGINE LIGHT DIST. BOARD No. 1	1	0.0062	13.6	48	113	—	—
" " " " " " No. 2	1	0.004	50	165	72	—	—
SEARCHLIGHT LAMP	1	0.0185	68	78	75	—	—
HOT WATER HEATER	1	0.0185	68	78	120	—	—
HOT WATER HEATER	1	0.015	877.2	330	340	—	—
AIR CONDITIONING HEATER - QUARTER	1	0.03	68	130	101	—	—
HOT WATER HEATER	1	0.0015	6.8	20	43	—	—
OIL FUEL ELECTRIC HEATER	1	0.0015	6.8	20	49	—	—
" " " " " " " "	1	0.0062	27.2	48	59	—	—
BAKING OVEN	2	0.22	150	130	131	—	—
SHORE CONNECTION	1	0.047	200	280	105	—	—
ELECTRIC WELDING SET CONNECTION BOX	1	0.2	210	370	105	—	—
TO EMERGENCY SWITCH BOARD CONNECTION	1	0.04	113.5	145	105	—	—
FROM " " " " " "	1	—	—	—	—	—	—

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.
				In the Circuit.	Rule.			
MOTOR FOR CONVERTER SET	1	136	1	0.6	495	500	72	RUBBER LEAD COVERED
WARD LEONARD SYSTEM	1	46 KW	1	0.2	210	256	65	—
DYNAMO FOR MOORING WINCH No. 1	1	46 KW	1	0.2	210	256	65	—
" " " " " " No. 2	1	16	1	0.2	210	256	65	—
MORNING MOTOR FOR MOORING WINCH No. 1	1	16	1	0.2	210	256	65	—
" " " " " " No. 2	1	16	1	0.2	210	256	65	—
MOTOR FOR CONVERTER SET	1	145	2	0.74	150	550	39	—
WARD LEONARD SYSTEM	1	99 KW	1	0.6	450	500	33	—
DYNAMO FOR WINDLASS	1	120	1	0.6	450	500	26	—
MORNING MOTOR FOR WINDLASS	1	16	1	0.0185	60	100	265	COMPRES. MAGNES. OXIDE
STEERING GEAR	1	17	1	0.077	210	220	332	COPPER
OIL FUEL TRANSFER PUMP	1	78	1	0.15	290	330	190	SHEAT
WATER CIRCULATING PUMP	2	4	1	0.0062	16	48	310	—
LUBRICATING OIL PURIFIER	1	55	1	0.077	210	220	332	—
AIR COMPRESSOR	1	26	1	0.04	100	145	206	—
OIL CIRCULATING PUMP	2	8	1	0.007	32	55	242	—
OIL FUEL PURIFIER	2	48	1	0.06	178	190	292	—
SALT WATER CIRCULATING PUMP	2	4.3	1	0.007	18	83.6	98	RUBBER LEAD COVERED.
BOILERS FANS	1	15	1	0.0185	19	73	160	COMPRES. MAGNES. OXIDE
TURNING GEAR	1	20	1	0.0125	75	85	230	COPPER
BILGE PUMP	1	28	1	0.03	37	130	350	SHEAT
FIRE & SANITARY PUMP	1	95	1	0.03	37	130	350	—
OIL FUEL SERVICE PUMP	1	7	1	0.0045	28	40	118	—
FRESH WATER SERVICE PUMP	1	—	1	0.0135	40.9	73	344	—
ELECTRIC CRANE	2	2	1	0.0045	8.6	40	300	—
DENSE OIL FUEL PUMP	1	3.8	1	0.003	13.5	30	97	—
LARGE LATHE	1	1.4	1	0.0015	6.5	20	78	—
SMALL " " " "	1	2.5	1	0.0015	11	20	92	—
DRILLING MACHINE	1	1	1	0.0015	4.6	20	19	—
GRINDING " " " "	2	3	1	0.0045	12.5	40	108	—
REFRIGERATING COMPRESSOR	2	2	1	0.0015	9	20	125	—
REFRIGERATING CIRCUL. PUMP	1	4.3	1	0.0045	14.6	40	236	—
HOSPITAL AIR CONDITION COMP.	1	3.3	1	0.0045	14.4	20	19	—
CREW QUARTER FANS.	1	—	—	—	—	—	—	—

x ONE HOUR RATING @ HALF HOUR RATING.



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

*U. Costa* *Fluor* Electrical Engineers. Date 29/7/47

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass 31 FEET

Minimum distance between electric generators or motors and steering compass 31 FEET

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 10 feet from standard compass 10 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 0 degrees on — course in the case of the standard compass, and — degrees on — course in the case of the steering compass.

*U. Costa* Builder's Signature. Date 29/7/47

Is this installation a duplicate of a previous case — If so, state name of vessel —

Plans. Are approved plans forwarded herewith — If not, state date of approval 29/4/1947

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith No

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

*The electrical Equipment has been made in accordance with the Rules and approved plans. All the electrical machinery have been tested and found in full working condition and found in order.*

*The insulating connections tested with satisfactory results, automatic and main switch board and emergency switch board tested satisfactory.*

*Parallel made and return of current in order.*

*Noted*

*10.11.47*

*10/11/47*

Total Capacity of Generators 450.— Kilowatts.

The amount of Fee ... £ SEE Rpt. 9 : When applied for, 18/8/1947  
Travelling Expenses (if any) : : When received, 19

*U. Costa*  
Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI. 23 JAN 1948

Assigned In minute see J.E. Rpt