

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

13 OCT 1932

Date of writing Report 2-10-32 When handed in at Local Office 7-10-32 Port of GENOA.

No. in Survey held at GENOA. Date, First Survey JULY 22ND 1931 Last Survey SEPTEMBER 26TH 1932

Reg. Book. 70376 on the STEEL SCREEN STEAMER. "REX". (Number of Visits 82)

Built at SESTRI PONENTE, GENOA. By whom built S.A. ANSALDO. Yard No. 296. When built 1932

Owners ITALIA (FLOTTE RIUNITE COSULICH LLOYD SABAUDO) Port belonging to GENOA.

Electric Light Installation fitted by OFFICINE ALESTIMENTI E RIPARAZIONE NAVI, GENOA Contract No. When fitted 1932.

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution

TWO WIRE.

Pressure of supply for Lighting 110 AND 220. volts, Heating 220. volts, Power 220. 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 No.

are they over compounded 5 per cent. YES., if not compound wound state distance between each generator 3 METRES, 25 METRES, AND 125 METRES (EMERGENCY)

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 FORWARD MAIN AND AUXILIARY ENGINE ROOMS.

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

NO UNPROTECTED WOODWORK NEAR. and YES., 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 FORWARD BULKHEAD OF AUXILIARY ENGINE ROOM.

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. AUTOMATIC CIRCUIT BREAKERS

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.

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards NO UNPROTECTED WOODWORK NEAR.

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

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 DOUBLE POLE

FUSES AND SWITCHES, CIRCUIT BREAKERS WITH OVERLOAD AND REVERSED

CURRENT TRIPS. ALL TO RULE REQUIREMENTS.

Instruments on main switchboard 35. ammeters 10. 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

VOLTMETER WITH CONNECTIONS TO ALL CIRCUITS AND EARTH.

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, ~~and~~ multicore YES. 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 LIGHTING 3 VOLTS, POWER 5 VOLTS.

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 USED.

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 SUPPORTED IN GALVANISED IRON CLIPS. CABLES STEEL BRAIDED THROUGHOUT INSTALLATION WITH EXCEPTION OF CABINS WHERE LEAD COVERED.

Where 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, if lights are fitted, are the cables and fittings in accordance with the special requirements YES.

Joints in Cables, state if any, and how made, insulated, and protected YES. CLAMPED SLEEVES IN SUITABLY CONSTRUCTED JOINT 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 IMPORTANT PARTS ARE EARTHED BY DIRECT METALLIC CONTACT. (SWITCHBOARDS AND DYNAMO FRAMES.) CONNECTIONS AT SWITCH BOARD FOR INDICATING EARTHS ARE 6 1/4 SQUARE. 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 CONTROLLING SWITCHES ON MAIN AND EMERGENCY SWITCHBOARDS. GENERATOR IS DRIVEN BY DIESEL ENGINE AND IS SITUATED ON "D" DECK AFT.

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 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 YES. 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. how are the cables led YES. where are the controlling switches situated YES.

Searchlight Lamps, No. of SIX., whether fixed or portable FIXED., are their fittings as per Rule YES.

Are Lamps, other than searchlight lamps, No. of THREE., 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 IN THE MAJORITY OF CASES. 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 NO UNPROTECTED WOODWORK NEAR. if not of this type, state distance of the combustible material horizontally or vertically above the motors YES. and 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 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 YES.

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 ...	3.	1250. EACH.	220.	5700. EACH.	500.	STEAM TURBINE	✓	✓
AUXILIARY ...	2.	280. EACH.	220.	1270. EACH.	275.	DIESEL ENGINE	DIESEL OIL.	ABOVE 150°F.
EMERGENCY ...	1.	280.	220.	1270.	275.	DIESEL ENGINE.	DIESEL OIL.	ABOVE 150°F.
-----	1.	30.	110/220.	136.	1800.	PETROL ENGINE.	PETROL	UNDER 150°F.
ROTARY TRANSFORMER	3.	180. EACH.	220/110.	1000/1640 EACH.	900.	ELECTRIC MOTOR.	✓	✓

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) METRES.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. MM.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	10.	✓	6,090.00	703.	1.100.	5,100.	5,600.	32.	COPPER	ALL CABLES
EQUALISER CONNECTIONS ...	✓	✓	✓	✓	✓	✓	✓	✓	TINNED.	LEAD COVERED.
AUXILIARY GENERATOR ...	4.	✓	1,624.00	427.	1.100.	1,250.	1,480.	41.	PURE RUBBER.	ABOVE LEAD
EMERGENCY GENERATOR ...	4.	✓	1,624.00	427.	1.100.	1,250.	1,480.	41.	WHITE AND	BITUMASTIC
ROTARY MOTOR ...	4.	✓	1,936.00	427.	1.200.	1,000.	1,800.	30.	BLACK RUBBER.	COATING. TWO
TRANSFORMER GENERATOR ...	4.	✓	1,936.00	427.	1.200.	1,640.	1,800.	37.	TWO RUBBERED	TAPES OF
ENGINE ROOMS ...	1.	✓	116.200	37.	2.000.	93.	173.	156.	TAPES.	IMPREGNATED PAPER.
BOILER ROOMS ...	1.	✓	11.40	12.	1.100.	12.	41.	116.5.		JUTE. TWO
AUXILIARY SWITCHBOARDS AFT ...	4.	✓	1,624.00	427.	1.100.	928.	1,480.	217.		RIBBONS OF
LIGHTING SECTIONS CENTRE ...	2.	✓	1218.00	703.	1.050.	1,217.	1,120.	161.		GALVANISED STEEL.
FORWARD ...	2.	✓	812.00	427.	1.100.	751.	790.	192.		(LARGE CABLES ONLY)
POWER SECTIONS CENTRE ...	7.	✓	4,676.00	703.	1.100.	2,608.	4,165.	113.		STEEL BRAID
FORWARD ...	4.	✓	2,436.00	703.	1.050.	2,110.	2,200.	232.		COVERED WITH
ACCOMMODATION "O" ...	1.	✓	2939.3360	19.	1.40	1,500.	33.60.	72.77.		PROTECTIVE VARNISH.
"A" ...	1.	✓	11.40	12.	37.	1,100	2,250.	22.194.		
DECK "B" ...	1.	✓	2,010	1.	37.	1.600	2.00	6.160.		
"D" ...	1.	✓	3,970	7.	37.	0.850.	1.600.	16.115.		
"F" ...	1.	✓	2,010	12.	1.10.	1.600	1.10.	8.36.		
WIRELESS ...	1.	✓	21,500.	19.	1.200.	60.	62.	98.		IN TERMINAL ACCOMMODATION
SEARCHLIGHTS ...	1.	✓	2,010.	1.	1.600.	9.	12.4.	48.		LIGHTING CIRCUITS. LEAD
MASTHEAD LIGHTS ...	1.	✓	2,010.	1.	1.600.	1.	12.4.	261.		COVERED CABLE. 1. PER POLE.
SIDE LIGHTS ...	1.	✓	2,010.	1.	1.600.	1.	12.4.	11.		0.950 mm sq. SECTION.
COMPASS LIGHTS ...	1.	✓	0.950	1.	1.100.	2.	5.8.	4.		STRAND. NO. 12, 0.10. DIA.
POOP LIGHTS ...	1.	✓	2,010	1.	1.600.	0.5.	12.4.	62.		FLEXIBLE CABLE USED FOR
CARGO LIGHTS ...	✓	✓	✓	✓	✓	✓	✓	✓		LOW VOLTAGE CIRCUITS.
ARC LAMPS ...	1.	✓	94.160.	37.	1.800.	150.	150.	75.		ALL TO RULE
HEATERS ...	1.	✓	14.900.	19.	1.00.	50.	50.	50.		REQUIREMENTS.
	1.	✓	3.970.	7.	0.850.	20.	22.	50.		

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) METRES.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. MM.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMPS ...	3.	✓	74.370.	37.	1.600.	125.	130	128.	30.	
MAIN BILGE LINE PUMPS ...	3.	✓	299.430.	61.	2.500.	305.	320.	18.	As.	As.
GENERAL SERVICE PUMP ...	✓	✓	✓	✓	✓	✓	✓	✓	ABOVE.	ABOVE.
EMERGENCY BILGE PUMPS ...	2.	✓	181.600.	37.	2.500.	215.	228.	42.		
SANITARY PUMPS ...	2.	✓	181.600.	37.	2.500.	231.	228.	33.		
CIRC. SEA WATER PUMPS ...	4.	✓	7.910.	7.	1.200.	31.	34.	24.		
FRESH WATER PUMPS ...	2.	✓	21.500.	19.	1.200.	56.	60.	12.		
AIR COMPRESSOR ...	1.	✓	116.200.	37.	2.000.	175.	190.	45.		
FRESH WATER PUMP ...	1.	✓	11.400.	12.	1.100.	40.	41.	13.		
ENGINE TURNING GEAR ...	4.	✓	59.700.	19.	2.000.	99.	110.	12.		
ENGINE REVERSING GEAR ...	✓	✓	✓	✓	✓	✓	✓	✓		
LUBRICATING OIL PUMPS ...	1.	✓	2.010	1.	1.600.	7.	12.4.	25.		
OIL FUEL TRANSFER PUMPS ...	2.	✓	181.600.	37.	2.500.	231.	228.	45.		
WINDLASS ...	4.	✓	609.00	703.	1.050.	770.	950.	12.		
WINCHES, FORWARD CARGO ...	6.	✓	74.370.	37.	1.600.	133.	150.	32.		
WINCHES, AFT CRANES ...	4.	✓	29.300.	19.	1.400.	68.	72.	52.		
WINCHES, AFT CRANES ...	2.	✓	74.370.	37.	1.600.	150.	150.	41.		
WINCHES, AFT CRANES ...	10.	✓	59.700.	19.	2.000.	100.	110.	56.		
STEERING GEAR—										
(a) MOTOR GENERATOR ...	✓	✓	✓	✓	✓	✓	✓	✓		THE CONNECTIONS FOR
(b) MAIN MOTORS ...	2.	✓	505.50.	127.	2.250.	551.	600.	12.		SMALL MOTORS, LIFTS,
WORKSHOP MOTORS ...	5.	✓	2,010	1.	1.600	10.23.	12.4.	14.10.		THERMO TANKS, FANS, KITCHEN
VENTILATING FANS ...	6.	✓	186.200.	37.	2.000.	173.	173.	30.		UTENSILS, AIR EXTRACTORS
ACCOMMODATION LADDERS ...	6.	✓	21.500.	19.	1.200.	50.	60.	47.		AND SMALL PUMPS ETC.
MOORING CAPSTANS, 15 TONS ...	6.	✓	299.430.	61.	2.500.	285.	320.	21.		ARE ALL IN ACCORDANCE
MOORING CAPSTANS, 30 TONS ...	4.	✓	609.00.	703.	1.050.	750.	950.	18.		WITH THE REQUIREMENTS
REFRIG. MAIN COMPRESSORS ...	3.	✓	299.430.	61.	2.500.	267.	320.	24.		OF THE RULES.
REFRIG. AUX. COMPRESSORS ...	2.	✓	84.00.	37.	1.700.	80.	139.	24.		
REFRIG. BRINE & WATER PUMPS ...	10.	✓	7.910.	7.	1.200.	27.	34.	36.		
AUX. CONDENSER CIRCULATING ...	2.	✓	84.00.	37.	1.700.	134.	139.	28.		

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.

OFFICINE ALLESTIMENTO E RIPARAZIONI NAVI

Electrical Engineers.

Date 4.10.32

COMPASSES.

Distance between electric generators or motors and standard compass

108 METRES.

Distance between electric generators or motors and steering compass

100 METRES.

The nearest cables to the compasses are as follows:—

A cable carrying	2.	Ampères	6.	METRES. feet from standard compass	2.	METRES. feet from steering compass.
A cable carrying	1.5	Ampères	10.	METRES. feet from standard compass	5.	METRES. feet from steering compass.
A cable carrying	9.	Ampères	20	METRES. feet from standard compass	15.	METRES. 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 0 degrees on S.E. course in the case of the standard compass, and 0 degrees on S.E. course in the case of the steering compass.

OFFICINE ALLESTIMENTO E RIPARAZIONI NAVI

PANSALDO, Società Anonima

Builder's Signature.

Date 4.10.32

Is this installation a duplicate of a previous case **No.** If so, state name of vessel

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

THE INSTALLATION HAS BEEN BUILT UNDER SPECIAL SURVEY OF TESTED MATERIALS AND IS IN ACCORDANCE WITH THE SECRETARY'S LETTERS, APPROVED PLANS AND RULE REQUIREMENTS.

THE MATERIALS AND WORKMANSHIP ARE GOOD AND THE COMPLETE INSTALLATION WHEN TRIED UNDER FULL WORKING CONDITIONS AND IN PARALLEL HAS FOUND SATISFACTORY.

IN OUR OPINION THE VESSEL IS ELIGIBLE FOR THE NOTATION "ELECTRIC LIGHT".

Total Capacity of Generators **4620.** Kilowatts.

DUAL SURVEY
L.R. & R.I.

The amount of Fee **£13,600.00**

When applied for,

27.9.1932

Travelling Expenses (if any) **£150.00**

When received,

12-12-1932

Alcibiade & Grasselli
Surveyors to Lloyd's Register of Shipping.

TUE 3 JAN 1933

FRI 8 MAR 1933

FRI 20 MAY 1933

Committee's Minute

Assigned

TUE 25 OCT 1932

Elec Light