

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

MAY 25 1937

Received at London Office

Date of writing Report 24th May 1937 When handed in at Local Office 24th May 1937 Port of Harve
 No. in Survey held at Rouen Date, First Survey 18th Mars. Last Survey 18th May 1937
 Reg. Book. 67721 on the Motor Brawler "FINLANDE" (Number of Visits.....7)
 Tons { Gross 1300
 Net 685
 Built at Rouen (G. Querilly) By whom built Ch. & at. de S^t Nazaire Penhoet Yard No. T. 8. When built 1937
 Owners J. Lunet & C^{ie} Port belonging to Bordeaux
 Electric Light Installation fitted by Ch. & at. de S^t Nazaire. Penhoet Contract No. v When fitted 1937
 Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Direct Current Two wire ✓
Pressure of supply for Lighting 110 volts ✓ volts, Heating v ✓ volts, Power 220. ✓ volts.

Direct or Alternating Current, Lighting Direct ✓ Power Direct ✓

If alternating current system, state frequency of periods per second v

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 v

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 ✓
Have certificates for generators under 100 kw. been supplied and approved Certificates attached hereto ✓

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 Fitted on platforms 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 v ✓ and v ✓
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 Fitted on Platform forward the 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 v ✓

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 v ✓ and v ✓, 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 (all connections, switches & fuses placed on a frame work behind the panels & well locked and insulated) ✓ is the non-hygroscopic insulating material of an approved type v ✓, 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 (See Sec. Letter E. 11th Nov. 1936) ✓, 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 Yes ✓, are all screws and nuts securing connections effectively locked Yes ✓, are any fuses fitted on the live side of switches Yes ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches No ✓
For each generator a double pole circuit breaker with overload & reversed current trips and a single pole equalizer switch. ✓
For each outgoing circuit a double pole switch and a double pole fuse ✓

Are turbine driven generators fitted with emergency trip switch as per rule v ✓ Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material Yes ✓ Instruments on main switchboard 6 ammeters 5

voltmeters v ✓ 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 Yes ✓
Earth 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* are all fuses labelled as per rule *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* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules *Yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type *✓* **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *5 volts*

area of 0.04 square inch and above provided with soldering sockets *Yes* **Cable Sockets,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *Yes*

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 *✓* or waterproof insulating tape *✓* **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 laid under machines or floorplates *No* if so, are they adequately protected *✓*

Are cables in machinery spaces, galleys, lavatories, bathrooms and latrines lead covered or run in conduit *Lead Covered*

Support and Protection of Cables, state how the cables are supported and protected *Fixed on perforated plates & secured by Metal clips*

If cables are run in wood casings, are the casings and clips secured by screws *✓* are the clip screws of brass *✓* are the cables run in separate grooves *✓* 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 *✓*

Joints in Cables, state if any, and how made, insulated, and protected *Joints made in W.S. metallic boxes or ceramic boxes in accommodations*

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 *None* are their connections made as per Rule *✓*

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 *None fitted.*

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 (in the Chart Room)*

has each navigation lamp an automatic indicator as per Rule *Yes* **Secondary Batteries,** are they constructed and fitted as per Rule are they ventilated as per Rule *None fitted.*

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 *✓*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *✓* how are the cables led *✓*

where are the controlling switches situated *✓*

are all fittings suitably ventilated *✓* are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials *✓*

Heating and Cooking Appliances, are they constructed and fitted as per Rule *✓* are air heaters constructed and fitted as per Rule *✓*

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

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* 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 *Motors ventilated drip proof type* if not of this type, state distance of the combustible material horizontally or vertically above the motors *✓* and *✓*

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *Yes* have certificates for all motors for essential services been supplied and approved *Certificates attached hereto*

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 *✓* **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 *✓* are all fuses of the filled cartridge type *✓* are they of an approved type *✓*

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces *✓*

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule *Yes* are they suitably stored in dry situations *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 (each one 100 Kw generator and one 35 Kw generator)	2	2x110+2x35 = 270	220	each 455-159	350	Oil Engines	Diesel oil	Above 150° F	
AUXILIARY	1	22.5	220	102	750	"	"	"	
EMERGENCY	✓								
ROTARY TRANSFORMER (Motor generators)	2	10	220-110	63-91	1500	✓			

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	CONDUCTORS.			COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	mm ²	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR (See below)										
EQUALISER CONNECTIONS	1	60	19	20/10	✓		36.			
AUXILIARY GENERATOR	1	60	19	20/10	102	✓	44	Vulcanized Rubber.	Lead covered & armoured	
EMERGENCY GENERATOR	✓									
ROTARY TRANSFORMER (MOTORS)	1	29	19	14/10	64	✓	64	"	"	
TRANSFORMER (GENERATORS)	1	48	19	18/10	91	✓	91	"	"	
ENGINE ROOM	5	5.5	7	19/10	7	✓	35	"	"	
BOILER ROOM	1	5.5	7	19/10	7	✓	35	"	"	
AUXILIARY SWITCHBOARDS										
P ^c Main Generator 100 Kw	1	469	91	25/10	458	✓	25	"	"	
S ^d " " "	1	469	91	25/10	458	✓	30	"	"	
P ^c Generator 35 Kw (in tandem)	1	116	37	24/10	160	✓	25	"	"	
S ^d " " "	1	116	37	24/10	160	✓	30	"	"	
ACCOMMODATION										
After Circuit	1	5.5	7	19/10	7	✓	48	"	"	
Airside Circuit	1	5.5	7	19/10	22	✓	110	"	"	
Fore ² Circuit	1	14.1	7	16/10	16	✓	120	"	"	
Deck Circuit	1	14.1	7	16/10	16	✓	50	"	"	
WIRELESS	1	10.8	7	14/10	35	✓	48	"	"	
SEARCHLIGHT										
MASTHEAD LIGHT	1	1.13	3	7/10	1/2	✓	110	"	"	
SIDE LIGHTS	2	1.13	3	7/10	1	✓	18	"	"	
COMPASS LIGHTS	2	1.13	3	7/10	1/4	✓	10	"	"	
POOP LIGHTS	1	1.13	3	7/10	1/2	✓	82	"	"	
CARGO LIGHTS	5	5.5	7	19/10	6	✓	210	"	"	
HEATERS										

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	48	19	18/10	95	✓	36	"	"	
MAIN BILGE LINE PUMPS	1	75	5.5	7	19/10	21.6	16	"	"	
GENERAL SERVICE PUMP	1	11.8	10.8	7	14/10	35.5	12	"	"	
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP	1	1	5.5	7	19/10	10	40	"	"	
ENGINE TURNING GEAR	1	1	1.9	3	9/10	8	40	"	"	
ENGINE REVERSE GEAR										
LUBRICATING OIL PUMPS	1	1	14.1	7	16/10	46	14	"	"	
OIL FUEL TRANSFER PUMP	1	1	1.95	3	9/10	9.85	24	"	"	
WINDLASS	1	1	74	37	16/10	117	130	"	"	
WINDING FORWARD										
BRAND WINCH	1	2	469	91	25/10	401	32	"	"	
WINDING AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	21.5	19	13/10	52	60	"	"	
WORKSHOP MOTORS	3									
Cold liver oil pump for running boiler	5	1	5.5	7	19/10	24	30	"	"	
Separator for Fuel oil	1	1	1.95	3	9/10	7	8	"	"	
Oil Lubricating	1	1	1.95	3	9/10	7	24	"	"	

The Electrical Equipment is installed in accordance with the approved plans.

All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

(All Electric Cables tested by Society's Surveyors)

Electrical Engineers.

Date

COMPASSES.

Minimum distance between electric generators or motors and standard compass 17 Metres

Minimum distance between electric generators or motors and steering compass 15 Metres

The nearest cables to the compasses are as follows:—

A cable carrying 25 Ampères 2 metres from standard compass 2m 500 from steering compass.

A cable carrying 5 Ampères 2 metres from standard compass 2m 500 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 every course in the case of the standard compass, and Nil degrees on every course in the case of the steering compass.

Builder's Signature.

Date

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 generators, Motors, and all Cables)

have been manufactured and tested according to Rue Requirements.

All materials & Workmanship fittings, installing and fixing of Cables are Satisfactory.

The spare gear for the generators, Motors, Control gear, Switchgear and distribution boards are in accordance with the Rules

The insulation resistance is good. All generators & Motors were tested in running order and the circuit breakers with equalizer switches tested

The trials under working conditions of the whole of the electrical equipment were carried out with Satisfactory results

Certificates of tests of generators & Motors for essential services are attached hereto.

The electric Installation of this vessel is in conformity with the Classification Rules and merits in my opinion to have notation in the Register Book

Total Capacity of Generators 292 1/2 Kilowatts.

	Fees	When applied for.	When received.
The amount of Fee	£ 470	5875: 24.5.19.37	
125		120.	
Teleph.		455: 15.10.37	15/10
Travelling Expenses (if any) £			
		6450.	

L. Meillet
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 30 JUL 1937

Assigned

See Rom 1759

20.12.36.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.



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Lloyd's Register Foundation

approved Certificates attached hereto
Have certificates for generators under 100 kw. been supplied and approved

Certificates attached hereto

Note - The Certificates of the test results for:

- 1° Electric Motor driving the Spare Lubricating oil pump.
- 2° do. the 25 tons Ballast pump.
- 3° do. the 50 tons Ballast pump
- 4° do. the 75 tons General Service pump
- 5° do. the Oil fuel Transfer Pump.

have been requested from the Builders, and
will be forwarded in due course.

RE. REPORT
N° 7690.

W243-0082 3/3

absence of fuses on back of board Yes
(E. 11th Nov. 1936)

accessibility of all parts Yes

are moving parts Yes

L. Melet

