

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 6<sup>th</sup> DEC. 1929 When handed in at Local Office 19 Port of LENINGRAD

No. in Survey held at LENINGRAD Date, First Survey 15<sup>th</sup> Novemb. 1929 Last Survey 6<sup>th</sup> DEC. 1929  
Reg. Book. 15343 on the M/S "COOPERATZIA" (Number of Visits 5)

Tons { Gross 3767.2  
Net 2164.4

Built at LENINGRAD By whom built SEVERNEY S.B. YARD Yard No. 307 When built 1929

Owners SOVTORGFLOT Port belonging to LENINGRAD

Electric Light Installation fitted by SEVERNEY S.B. YARD Contract No. 307 When fitted 1929

Is the Vessel fitted for carrying Petroleum in bulk No

### System of Distribution DOUBLE WIRE SYSTEM

Pressure of supply for Lighting 220 volts, Heating ✓ volts, Power 220 volts.

Direct or Alternating Current, Lighting DIRECT CURRENT Power DIRECT CURRENT

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 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 TWO 60 KW. MACHINES 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 ENGINE ROOM, EMERGENCY SET ON DECK

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 ENGINE ROOM, EMERGENCY SWITCHBOARD IN DECK HOUSE.

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 SAME COMPARTMENT.

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 NONE 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

if semi-insulating material is used, are all conducting parts insulated from the slab STEEL SWITCHBOARD, FITTINGS INSULATED WITH MICANITE, 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

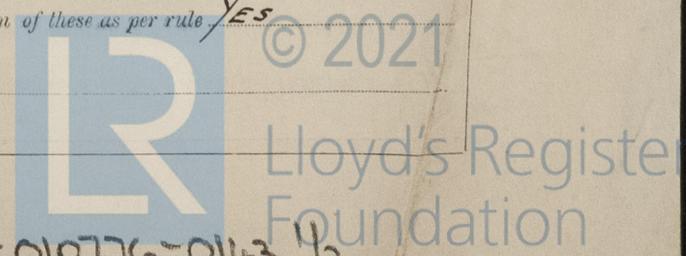
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches EACH 60 KW GENERATOR HAS TWO SINGLE POLE FUSES & DOUBLE POLE CIRCUIT BREAKERS WITH OVERLOAD & REVERSE CURRENT TRIPS, FOR EQUALIZING WHEN PARALLEL RUNNING A TRIPLE POLE SWITCH IS FITTED. AUX. GENERATOR HAS TWO SINGLE POLE FUSES & DOUBLE POLE SWITCH.

Instruments on main switchboard 3 ammeters 5 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 FRICHS SYSTEM

Switches, Circuit Breakers and ~~Fuses~~ Out-outs, do these comply with the requirements of the Rules NO. CIRCUIT BREAKERS & FUSES ARE SIMILAR TO THOSE FITTED ON "ALEXEY RYKOFF" AND WERE APPROVED BY LONDON.

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 & TWIN are the cables insulated and protected as per Tables IV or V of the Rules 90% YES  
10% APPROVED OFFICE

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load WINDLASS 670

**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 YES

**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 METAL CLIPS, TUBES & SHEET IRON PLATING

If 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 NO LIGHTS IN CARGO CHAMBERS

**Joints in Cables,** state if any, and how made, insulated, and protected ALL POWER CABLES HAVE DIRECT LEADS, LIGHTING CABLES BY JUNCTION 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 BRASS OR LEAD

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas RADIO 100 Sq. In.

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 THE EMERGENCY SUPPLY IS CONNECTED TO THE SUB-DISTRIBUTION BOARDS FOR EACH LIGHTING CIRCUIT, GENERATOR IS DRIVEN BY A PARAFFIN MOTOR.

**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 RADIO 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 NONE

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected NONE

how are the cables led YES

where are the controlling switches situated YES

**Searchlight Lamps,** No. of TWO, whether fixed or portable FITTED ON BRIDGE, are their fittings as per Rule YES

**Arc Lamps,** other than searchlight lamps, No. of NONE, 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 NO

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 YES, 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 NONE STEEL MASTS FITTED

**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 ...	<u>TWO</u>	<u>60</u>	<u>230</u>	<u>273</u>	<u>300</u>	<u>INTERNAL COMBUSTION ENGINE</u>	<u>DIESEL OIL</u>	<u>ABOVE 150°</u>
AUXILIARY ...	<u>ONE</u>	<u>30</u>	<u>230</u>	<u>135</u>	<u>430</u>	"	"	"
EMERGENCY ...	<u>ONE</u>	<u>10</u>	<u>230</u>	<u>44</u>	<u>630</u>	"	<u>PARAFFIN</u>	<u>PARAFFIN</u>
ROTARY GENERATOR TRANSFORMER	<u>ONE</u>	<u>2</u>	<u>220</u>	<u>7</u>	<u>2500</u>	"	"	"

**GENERATOR, LIGHTING AND HEATING CONDUCTORS.**

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. In.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	<u>1</u>	<u>240</u>	<u>91</u>	<u>1.93</u>	<u>273</u>	<u>273</u>	<u>70</u>	<u>3 LAYERS OF RUBBER TAPE</u>	<u>LEAD COVERED</u>
EQUALISER CONNECTIONS	<u>✓</u>	<u>120</u>	<u>37</u>	<u>2.03</u>	<u>✓</u>	<u>✓</u>	<u>35</u>	"	"
AUXILIARY GENERATOR ...	<u>1</u>	<u>95</u>	<u>19</u>	<u>2.52</u>	<u>135</u>	<u>135</u>	<u>50</u>	"	"
EMERGENCY GENERATOR	<u>1</u>	<u>25</u>	<u>7</u>	<u>2.13</u>	<u>44</u>	<u>64</u>	<u>265</u>	"	"
ROTARY RADIO MOTOR TRANSFORMER	<u>1</u>	<u>6</u>	<u>7</u>	<u>1.35</u>	<u>7</u>	<u>37</u>	<u>100</u>	"	"
ENGINE ROOM ...	<u>2</u>	<u>8</u>	<u>7</u>	<u>.86</u>	<u>5</u>	<u>31</u>	<u>45</u>	"	"
BOILER ROOM ...	<u>2</u>	<u>8</u>	<u>7</u>	<u>.86</u>	<u>5</u>	<u>31</u>	<u>45</u>	"	"
AUXILIARY SWITCHBOARDS CROSS CONNECTION	<u>1</u>	<u>25</u>	<u>7</u>	<u>2.13</u>	<u>45.5</u>	<u>64</u>	<u>120</u>	"	"
ACCOMMODATION ...	<u>1</u>	<u>25</u>	<u>7</u>	<u>2.13</u>	<u>60</u>	<u>64</u>	<u>30</u>	"	"
FOR LIGHTING CIRCUIT	<u>1</u>	<u>10</u>	<u>7</u>	<u>1.35</u>	<u>10</u>	<u>37</u>	<u>100</u>	"	"
RET LIGHTING CIRCUIT	<u>1</u>	<u>10</u>	<u>7</u>	<u>1.35</u>	<u>10</u>	<u>37</u>	<u>100</u>	"	"
IN CLASS ACCOMMODATION FROM SUB STATION	<u>2</u>	<u>4 EACH</u>	<u>7</u>	<u>.86</u>	<u>5</u>	<u>20</u>	<u>60</u>	"	"
NAVIGATION	<u>1</u>	<u>4</u>	<u>7</u>	<u>.86</u>	<u>4.5</u>	<u>20</u>	<u>120</u>	"	"
WIRELESS ...	<u>1</u>	<u>10</u>	<u>7</u>	<u>1.35</u>	<u>26</u>	<u>37</u>	<u>120</u>	"	"
SEARCHLIGHT ...	<u>1</u>	<u>6</u>	<u>7</u>	<u>1.05</u>	<u>18</u>	<u>25</u>	<u>120</u>	"	"
MASTHEAD LIGHT ...	<u>1</u>	<u>1</u>	<u>7</u>	<u>.43</u>	<u>1</u>	<u>6</u>	<u>100</u>	"	"
SIDE LIGHTS ...	<u>2</u>	<u>1</u>	<u>7</u>	<u>.43</u>	<u>1</u>	<u>6</u>	<u>50</u>	"	"
COMPASS LIGHTS ...	<u>1</u>	<u>1</u>	<u>7</u>	<u>.43</u>	<u>1</u>	<u>6</u>	<u>10</u>	"	"
POOP LIGHTS ...	<u>1</u>	<u>1</u>	<u>7</u>	<u>.43</u>	<u>1</u>	<u>6</u>	<u>250</u>	"	"
CARGO LIGHTS ...	<u>2</u>	<u>1</u>	<u>7</u>	<u>.43</u>	<u>5</u>	<u>6</u>	<u>180</u>	"	"
ARC LAMPS ...	<u>✓</u>								
HEATERS ...	<u>✓</u>								

**MOTOR CONDUCTORS.**

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Effective Area per Pole Sq. In.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...	<u>1</u>	<u>1</u>	<u>95</u>	<u>1.9</u>	<u>2.52</u>	<u>170</u>	<u>170</u>	<u>100</u>	<u>3 LAYERS OF RUBBER TAPE</u>	<u>LEAD COVERED</u>
MAIN BILGE LINE PUMPS ...	<u>1</u>	<u>1</u>	<u>95</u>	<u>1.9</u>	<u>2.52</u>	<u>170</u>	<u>170</u>	<u>150</u>	"	"
GENERAL SERVICE PUMP ...	<u>✓</u>									
EMERGENCY BILGE PUMP ...	<u>✓</u>									
SANITARY PUMP ...	<u>✓</u>									
CIRC. SEA WATER PUMPS ...	<u>✓</u>									
CIRC. FRESH WATER PUMPS ...	<u>✓</u>									
AIR COMPRESSOR ...	<u>1</u>	<u>2</u>	<u>185x2</u>	<u>37</u>	<u>2.52</u>	<u>470</u>	<u>490</u>	<u>120</u>	"	"
FRESH WATER PUMP ...	<u>1</u>	<u>1</u>	<u>6</u>	<u>7</u>	<u>1.05</u>	<u>10</u>	<u>27</u>	<u>50</u>	"	"
ENGINE TURNING GEAR ...	<u>1</u>	<u>1</u>	<u>6</u>	<u>7</u>	<u>1.05</u>	<u>37</u>	<u>27</u>	<u>180</u>	"	"
ENGINE REVERSING GEAR ...	<u>1</u>	<u>1</u>	<u>6</u>	<u>7</u>	<u>1.05</u>	<u>37</u>	<u>27</u>	<u>180</u>	"	"
LUBRICATING OIL PUMPS ...	<u>✓</u>									
OIL FUEL TRANSFER PUMP ...	<u>✓</u>									
WINDLASS ...	<u>1</u>	<u>1</u>	<u>50</u>	<u>37</u>	<u>1.31</u>	<u>84</u>	<u>97</u>	<u>350</u>	"	"
WINCHES, FORWARD ...	<u>4</u>	<u>WINCHES EACH</u>	<u>50</u>	<u>37</u>	<u>1.31</u>	<u>115</u>	<u>115</u>	<u>50</u>	"	"
WINCHES, AFT ...	<u>5</u>	<u>WINCHES EACH</u>	<u>50</u>	<u>37</u>	<u>1.31</u>	<u>115</u>	<u>115</u>	<u>50</u>	"	"
EMERGENCY COMPRESSOR	<u>1</u>	<u>1</u>	<u>25</u>	<u>7</u>	<u>2.13</u>	<u>40</u>	<u>64</u>	<u>100</u>	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR ...	<u>1</u>	<u>1</u>	<u>10</u>	<u>7</u>	<u>1.35</u>	<u>20</u>	<u>37</u>	<u>100</u>	"	"
(b) MAIN MOTOR ...	<u>1</u>	<u>1</u>	<u>10</u>	<u>7</u>	<u>1.35</u>	<u>25</u>	<u>37</u>	<u>250</u>	"	"
WORKSHOP MOTOR	<u>1</u>	<u>2</u>	<u>6</u>	<u>7</u>	<u>1.05</u>	<u>10</u>	<u>27</u>	<u>120</u>	"	"
VENTILATING FANS ...	<u>3</u>	<u>1</u>	<u>2x4</u>	<u>7</u>	<u>.86</u>	<u>3.6</u>	<u>20</u>	<u>250</u>	"	"
REFRIG. PLANT DIS. BDA	<u>2</u>	<u>185x2</u>	<u>37</u>	<u>2.52</u>	<u>385</u>	<u>370</u>	<u>120</u>	<u>120</u>	"	"
REFRIG. COMPRESSOR	<u>1</u>	<u>1</u>	<u>70</u>	<u>19</u>	<u>2.17</u>	<u>120</u>	<u>120</u>	<u>50</u>	"	"
"	<u>1</u>	<u>1</u>	<u>70</u>	<u>19</u>	<u>2.17</u>	<u>120</u>	<u>120</u>	<u>50</u>	"	"
REFRIG. BRINE PUMP	<u>1</u>	<u>1</u>	<u>16</u>	<u>7</u>	<u>1.71</u>	<u>49</u>	<u>50</u>	<u>25</u>	"	"
"	<u>1</u>	<u>1</u>	<u>16</u>	<u>7</u>	<u>1.71</u>	<u>49</u>	<u>50</u>	<u>25</u>	"	"
" SEA WATER PUMP	<u>1</u>	<u>1</u>	<u>16</u>	<u>7</u>	<u>1.71</u>	<u>49</u>	<u>50</u>	<u>100</u>	"	"

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.

*G. Montorovitch*

Electrical Engineers.

Date *22. 8. 29*

COMPASSES.

Distance between electric generators or motors and standard compass *50 FT.*

Distance between electric generators or motors and steering compass *45 FT.*

The nearest cables to the compasses are as follows:—

A cable carrying *25* Ampères *1.5* feet from standard compass *3.* feet from steering compass.

A cable carrying *2.0* Ampères *4.* feet from standard compass *2.* feet from steering compass.

A cable carrying *5* Ampères *3.* feet from standard compass *4.* 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  course in the case of the standard compass, and  degrees on  course in the case of the steering compass.



*A. Speransky*

Builder's Signature.

Date *19. 11. 29*

Is this installation a duplicate of a previous case *YES* If so, state name of vessel *M/S "FELIX DZERZINSKY"*

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

*This installation has been fitted on board the vessel under special survey, the workmanship generally was found to be very good. Both 60 Kw. machines have been examined under full load conditions and governors found to be working satisfactorily, circuit breakers also examined and reverse current trips tried and found in working order. Both 30 Kw. & 10 Kw machines also examined under working conditions and regulators found in order.*

*See light*

*16/11/29*

Total Capacity of Generators *160* Kilowatts.

The amount of Fee ... .. £	:	:	When applied for,
			..... 19.....
Travelling Expenses (if any) £	:	:	When received,
			..... 19.....

*A. M. Critch*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *10/17 DEC 1929*

Assigned

*See light*

FRI. 14 FEB 1930  
 FRI. 3 JAN 1930  
 TUE 25 MAR 1930  
 FRI. 11 JUL 1930  
 FRI. 15 AUG 1930



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1m.12.26.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)