

# Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

29 MAR 1949

Received at London Office.....

Date of writing Report... 19th March 1949. When handed in at Local Office... 28th March 1949. Port of ... Gothenburg.....

Survey held at ... Kalmar ... Date, First Survey 25th January Last Survey 2nd March ... 1949. (Number of Visits... 5.....)

No. in Reg. Book. ... 91375... on the ... Motorship "F E N J A" ... Tons {Gross ... 601 Net ... 329

Built at ... Kalmar ... By whom built ... Kalmar Varv ... Yard No. ... 361 ... When built ... 1949...

Owners ... Rederi A-B. Eystrasalt ... Port belonging to ... Västervik

Electrical Installation fitted by ... A-B. Ernst Aldén & Co. ... Contract No ... --- ... When fitted ... 1949...

Is vessel fitted for carrying Petroleum in bulk... No... Is vessel equipped with D. F... Yes. E. S. D... No... Gy. C... No... Sub. Sig... No...

Have plans been submitted and approved... Yes... System of Distribution ... Two wire system Voltage of supply for Lighting... 115...

Heating... Power... 115... Direct or Alternating Current, Lighting... D.C... Power... D.C... If Alternating Current state frequency... Prime Movers,

has the governing been tested and found efficient when the whole 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... No... 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... Yes... and the results found as per rule... Yes... Are the lubricating arrangements and the construction

of the generators as per rule... Yes... Position of Generators ... One 40 KW. on starboard side, One 4 KW. on port side and

one 4 KW shaft generator aft on the ER floor... 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... Aft on the engine room floor...

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 ... 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... Yes... Description of Main Switchgear for each generator and arrangement of equaliser switches ... For the 40 KW. generator a

double pole circuit breaker with overload current trip, for the 4 KW. generator a double pole switch with a fuse

on each pole

and for each outgoing circuit ... A double pole switch and a fuse on each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Yes... Instruments on main switchboard ... 3...

ammeters ... 3... voltmeters ... synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection ... Earth Testing, state means provided ... Ohm - meter



**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**..... are the reversed current protection devices connected on the pole opposite to the equaliser connection **---**..... have they been tested under working conditions **---**..... **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 **Below Rule**..... 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 exposed 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 **Supported by metal clips. Power cables lead covered and armoured. Lighting cables lead covered and in accommodations run in conduits.**

Are all lead sheaths, armoring and conduits effectually bonded and earthed **Yes**..... Refrigerated chambers, are the cables and fittings as per Rule **---**..... 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 effectually 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 **---**..... and method of control **---**..... **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**.....

**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 **No**..... if so, how are they protected **---**..... and where are the controlling switches fitted **---**..... are all fittings suitably ventilated **---**..... are all fittings and accessories constructed and installed as per Rule **Yes**..... **Searchlight Lamps**, No. of **---**..... whether fixed or portable **---**..... are their fittings as per Rule **---**..... **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 **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 **---**..... 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 services been supplied and the results found as per Rule **Yes**..... **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 **---**..... are all fuses of the 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 **---**..... **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 megger 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	40	115	348	1000	Hot bulb motor	Diesel oil	Above 150° F.
	1	4	115	34.8	1500	Hot bulb motor	Diesel oil	Above 150° F.
	1	4	115	34.8	1500	Propeller shaft	Diesel oil	Above 150° F.
EMERGENCY								
ROTARY TRANSFORMER								

**GENERATOR CABLES.**

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATED WITH	HOW PROTECTED.
		No. in Parallel Per Pole	Sectional Area Sq. mm.	In the Circuit	Rule			
No.1 GENERATOR	40	1	185	348 ✓	373	10	Paper	Lead covered & armoured.
No.2 " " " "	4	1	10	35 ✓	38.2	12	Rubber	- " -
No.3 " " " "	4	1	10	35 ✓	38.2	4	"	- " -
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

**MAIN DISTRIBUTION CABLES.**

AUX. SWITCHBOARDS AND SECTION BOARDS								

**LIGHTING AND HEATING, ETC., CABLES.**

DESCRIPTION								
WIRELESS								
NAVIGATION LIGHTS	1	4	3.5 ✓	22.2	24	Rubber	Lead covered & armoured	
LIGHTING <del>XXXXXXXXXX</del>								
In accommodation	1	6	23 ✓	29.4	16	"	- " -	
In engine room	1	2.5	5 ✓	12.8	4	"	- " -	
Each lighting group	1	1.5	--	6.5	--	"	- " -	
HEATING								
Lubricating oil heater	1	10	35 ✓	38.2	10	"	- " -	

**MOTOR CABLES.**

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B. H. P.							
✓ Windlass	1	16	1	50	127 ✓	165	90	Paper	Lead covered & armoured
Winches Nos. 1 and 2	2	16	1	50	175 ✓	183	60	"	- " -
Winch No. 3	1	16	1	50	127 ✓	183	40	"	- " -
Warping winch	1	5	1	16	42 ✓	48	8	Rubber	- " -
Hydrofor pump	1	0.5	1	2.5	4.8 ✓	12.8	6	"	- " -
Hydrofor pump	1	0.5	1	2.5	4.8 ✓	12.8	6	"	- " -
Lubricating oil purifier	1	0.5	1	2.5	4.4 ✓	12.8	12	"	- " -

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.

Elektriska  
 Ernsjö & Co  
*A. Alder*

Electrical Engineers. Date 24.3.49

**COMPASSES.**

Minimum distance between electric generators or motors and standard compass 8 Metres.

Minimum distance between electric generators or motors and steering compass 10 Metres.

The nearest cables to the compasses are as follows:—

A cable carrying 0.3 Ampères 10 feet from standard compass 3 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 every course in the case of the standard compass, and 0 degrees on every course in the case of the steering compass.

KALMAR VARV

Builder's Signature. Date 27.3.49

*Yngve Sjögren*

Is this installation a duplicate of a previous case Yes If so, state name of vessel s. "Ivan!", "Arne!", "Dagny!", "Viria".

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

This electrical installation has been fitted on board under my inspection and to my satisfaction and has been tested under working conditions and found to work satisfactorily.

Makers' test sheets of generators and motors are attached.

*Notes see 26/4/49*

Total Capacity of Generators 48 Kilowatts.

The amount of Fee Kr. 840:00  
 Travelling Expenses (if any) Kr. ---

When applied for,	28/3.19.49
When received	---.19---

*Sten Johansson*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 29 APR 1949

Assigned See F.E. mchly. opt

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

*gw*

