

Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

7 SEP 1950

Received at London Office.....

Date of writing Report. 28th Aug. 1950. When handed in at Local Office 6th Sept. 1950. Port of Gothenburg.

Survey held at Gothenburg Date, First Survey 30th May Last Survey 15th August 1950. No. in Reg. Book. (Number of Visits 22.....)

90155 on the Motor Tanker "E. T. N. E. F. J. E. L. L." Tons {Gross 9832 Net 5753

Built at Gothenburg By whom built Eriksbergs Mek. Verkat A-B Yard No. 397 When built 1950

Owners A/S Dovrefjell Port belonging to Oslo

Electrical Installation fitted by Elektriska A-B. A.E.G. Generator Nos. 2715/64-5 When fitted 1950

Is vessel fitted for carrying Petroleum in bulk Yes Is vessel equipped with D. F. Yes E. S. D. Yes Gy. C. Yes Radar Yes

Have plans been submitted and approved Yes System of Distribution 2 wire system Voltage of supply for Lighting 110

Heating 220 Power 110/220 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 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 Yes 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 Port and starboard sides forward in the 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 On a platform on the port side in the 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 Sindanyo if of synthetic insulating material is it an Approved Type Yes 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 A double pole circuit breaker

with overload and reversed current trips, and a single pole equaliser switch

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 6

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 Ohm meters

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 **Yes** have they been tested under working conditions **Yes** 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** permit, 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 **Yes** with insulating compound **---** or waterproof insulating tape **Yes** 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 **Yes** if so, are they adequately protected **Yes** 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 clips. All cables lead covered. Main cables armoured or steel wire braided.**

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 **---** 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 **---** are they adequately ventilated **---** 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 **---** Gastight piping and flameproof fittings **---** In accommodation amidship **---** 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 **---** 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 **---** 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** If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type **Not supplied** 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	2	165	220	750	350	Heavy oil engines	Diesel oil	Above 150° F.
STEAM GEN.	1	25	220	113.5	550	Steam engine	Same engine	---
STEAM GEN.	1	25	110	227	550	Steam engine		
EMERGENCY								
ROTARY TRANSFORMER	1	35	110	318	1460	Electric motor	---	---

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return) in M.	INSULATED WITH	HOW PROTECTED.
		No. in Parallel Per Pole	Sectional Area or No. and Dia. of Strands. Sq. mm.	In the Circuit	Rule			
MAIN GENERATOR	165	4	185	750	932	30	Rubber	Lead covered & armoured
" " EQUALISER		4	185		932	30	"	- " -
STEAM ENGINE DRIVEN GENERATOR	25	1	70	113.5	124	60	"	- " -
STEAM ENGINE DRIVEN GENERATOR	25	1	185	227	233	60	"	- " -
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR	58 HP	1	185	216	233	15	"	- " -
" " GENERATOR	35	2	120	318	350	20	"	- " -

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...							
K 1 - Workshop	1	50	100 ✓	99	20	Rubber	Lead covered & armoured
K 2 - Hydrofors and turning motor	1	95	160 ✓	150	40	"	- " -
K 3 - Purifiers and oil heaters	1	95	160 ✓	150	30	"	- " -
K 4 - Water heaters and E.R. fans	1	70	125 ✓	125	35	"	- " -
K 5 - Pumps	1	70	125 ✓	125	55	"	- " -

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	2	10	35	38	240	Rubber	Lead covered & armoured
NAVIGATION LIGHTS	2	2.5	15	26	240	"	- " -
LIGHTING XXXXXXXXXX							
Engine room	1	16	50	48	20	"	- " -
Deck forward	1	10	35	38	220	"	- " -
Saloon	1	35	80	78	225	"	- " -
Accommodation aft, port	1	16	50	48	40	"	- " -
Accommodation aft, starboard	1	16	50	48	40	"	- " -
HEATING							
Saloon, fans, etc.	1	25	60	63	225	"	- " -
Aft, fans, etc.	1	25	60	63	48	"	- " -

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B. H. P.						
Steering engines	2	20	1	50	79	99	100	Rubber Lead covered & armoured
Main cooling water pumps	2	44	1	120	163	175	55	" - " -
Auxiliary cooling water pump	1	7.5	1	10	29.6	38	60	" - " -
Main lubricating oil pumps	2	70	1	120	260	282	25	Paper - " -
Ballast pump	1	20	1	35	78	78	70	Rubber - " -
Bilge- and sanitary pump	1	14	1	25	53	63	70	" - " -
Transfer pump	1	7.7	1	10	30	38	15	" - " -
Manoeuvring compressor	1	53	1	185	198	233	40	" - " -
Turning motor	1	10	1	35	80	78	60	" - " -
Purifiers	3	3.2	1	2.5	13	13	50	" - " -
Economiser circulating pump	1	3	1	2.5	10.3	13	60	" - " -



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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 AKTIEBOLAGET A B

FILIAL GÖTEBORG

Ben Stenquist

Electrical Engineers. Date 30.8.1950.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 14 Metres.

Minimum distance between electric generators or motors and steering compass 12 Metres.

The nearest cables to the compasses are as follows:—

twin
A/cable carrying 3 Ampères 6 feet from standard compass 4 feet from steering compass.

twin
A/cable carrying 1.5 Ampères 4 feet from standard compass 4 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.

ERIKSBERGS MEK. VERKSTADS A.B.

GÖTEBORG

Builder's Signature. Date 1/9 1950.

Mr. Lundberg

Is this installation a duplicate of a previous case Yes If so, state name of vessel M/T "Kollstein"

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

This electric installation has been fitted in the vessel under our inspection and has been tested and found satisfactory.

The workmanship is good and the Rule requirements have been complied with.

Lloyd's and Makers' certificates in respect of generators and motors are attached.

Noted sub 21/9/50

Total Capacity of Generators 380 Kilowatts.

The amount of Fee (Got.ac) Kr. 1397:-
(Skm.ac) 349:-
Travelling Expenses (if any) Kr. 42:60
(Skm.ac.)

When applied for,
6/9 19.50
When received
--- 19.---

Stig Sörensen Sven Bövin
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 22 SEP 1950

Assigned See minute on J.B. Rpt.

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