

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 2nd Jan. 1953. When handed in at Local Office 9th Jan. 1953. Port of Gothenburg Received at London Office

No. in Survey held at Gothenburg Date, First Survey 17th Sept. Last Survey 20th Dec. 1952. Reg. Book. (No. of Visits 23)

95496 on the Motor Tanker "P E T R A D A N" Tons { Gross 10843 Net 6146

Built at Gothenburg By whom built AB Lindholmens Varv Yard No. 1028 When built 1952.

Owners J. Lauritzen Port belonging to E s b j e r g

Installation fitted by Aktiebolaget Lindholmens Varv When fitted 1952

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

Plans, have they been submitted and approved Yes System of Distribution Two wire Voltage of Lighting 110

Heating ---- Power 220 D.C. or A.C., Lighting DC Power DC If A.C. state frequency ---

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted with a trip switch --- Generators, are they compound wound Yes, and level compounded under working conditions Yes

Are the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole Negative

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing Yes Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes Position of Generators 1 x 140 KW on port, 2 x 140 KW starboard on E.R. floor, 1 x 40 KW on a platform port side, 1 x 30 KW port side E.R. floor,

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes Switchboards, where are main switchboards placed On a platform at port side fwd in the engine room

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes, what insulation 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 construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear for each generator and arrangement of equaliser switches A double pole linked circuit breaker with overload and reversed current trips and a single pole equaliser switch.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit A double pole switch and a fuse in each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 9 ammeters 6 voltmeters --- synchronising devices. For compound machines in parallel are the ammeters and reverse current protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided 2 Ohm-meters Preference Tripping, state if provided -----, and tested -----

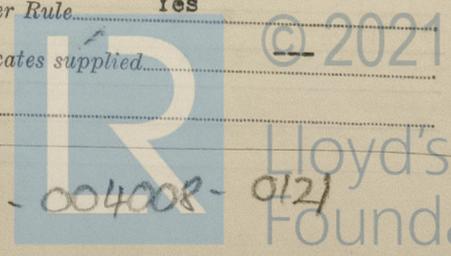
Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses (ASEA-SIPA)(AEG-SU200), are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 125 A = 20% overload, and at what current do the reverse current protective devices operate Yes, 70 A = 11% of full load Cables, are they insulated and protected as per Rule 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. volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends 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 any cables laid under machines or floorplates No, if so, are they adequately protected --- State type of cables (if in conduit this should also be stated) in machinery space Armoured or steel wire braided Steel wire braided and laundries ----- State how the cables are supported or protected Supported by metal clips. All power cables lead covered and armoured or steel wire braided. Lighting cables in accommodation lead covered and where drawn behind panels, lead covered steel wire braided and run in conduits.

Are all lead sheaths, armouring and conduits effectually bonded and earthed 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 Refrigerated chambers, are the cables and fittings as per Rule Yes

Have refrigeration fan motors been constructed under survey --- and test certificates supplied --- Are the motors accessible for maintenance at all times ---



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes Emergency Supply, state position
 In a separate well ventilated compartment on poop deck

Navigation Lamps, are they separately wired Yes controlled by separate double pole switches 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 Is an alternative supply provided ---

Secondary Batteries, are they constructed, fitted and adequately ventilated as per Rule ---, state battery capacity in
 ampère hours --- Where required to do so does it comply with 1948 International Convention ---

Lighting, is fluorescent lighting fitted No If so, state nominal lamp voltage --- and compartments where lamps are fitted ---

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes

Searchlights, No. of 1, whether fixed or portable portable, are they of the carbon arc or of the filament type Filament

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 and placed in well-ventilated
 compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil Yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump
 compartment Yes 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 sea services been supplied and the results found as per Rule Yes

Lightning Conductors, where required are they fitted as per Rule Yes

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied
 with Yes, are all fuses of an Approved Cartridge Type Yes, make of fuses (ASEA-SLPA)(AEG-SU200) Are the fittings for pump
 rooms, tween deck spaces, etc., in accordance with the special requirements for such ships Yes Are all cables lead covered as per Rule Yes

E.S.D., if fitted state maker Hughes location of transmitter and receiver Cofferdam in engine room

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations Yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory Yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				TYPE.	PRIME MOVER.	
			Kw. per Generator	Volts.	Ampères.	Revs. per Min.		MAKER.	
MAIN	3	Thomas B. Thrige	140	230	610	450	Oil eng.	AB Hedemora Verkstädter	
	1	Crompton-Parkinson	40	230	174	600	Steam eng.	E. Reader & Sons, Ltd.,	
	1	Thomas B. Thrige	30	230	130	1000	Oil eng.	AB Jönköpings Motorfabrik	
EMERGENCY ROTARY TRANSFORMER	2	Thomas B. Thrige	33	115	287	1400	El. motor	Thomas B. Thrige	

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	3	140	3	3 x 95	610	726	18-24	Paper	Lead covered & armoured
" EQUALISER	3		3	3 x 95		726		"	"
Steam driven generator	40		1	70	174	200	15	"	"
" " equaliser	1		1	70		200		"	"
Harbour light generator	30		1	50	130	159	24	"	"
" " equaliser	1		1	50		159		"	"
EMERGENCY GENERATOR	50BHP		1	70	185	200	18-24	"	"
ROTARY TRANSFORMER: MOTOR GENERATOR	33 KW		2	50	287	318	48-50	"	"

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

DESCRIPTION.	No. of	Kw.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.	
Power Section Board No. 1	1	70	1	70	110	200	18	Paper	Lead covered & armoured
2	1	50	1	50	140	159	60	"	"
3	1	70	1	70	156	200	70	"	"
4	1		1					"	"
5	1	70	1	70	165	200	80	"	"
6	1	25	1	25	56	63	70	Rubber	"
7	1	50	1	50	77	99	140	"	"

DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.).

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Wireless	1	10	25	38	150	Rubber	Lead cov. & armoured.
Navigation lights	1	2.5	3	13	150	"	"
Distribution Board No 1, Engine room	1	25	45	63	4	"	"
2, Crews acc. P.s.	1	25	25	63	30	"	"
3, " " S.s.	1	25	25	63	40	"	"
4, Eng. acc. P.s.	1	25	30	63	30	"	"
5, " " S.s.	1	25	30	63	60	"	"
6, Off. acc. Amidsh.	1	70	47	125	140	"	"
7, " " "	1	70	45	125	150	"	"
8, Forecastle	1	6	10	29	290	"	"
Searchlight	1	16	18	48	290	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.	
Main cooling water pumps	2	35	1	50	130	159	18	Paper	Lead covered & armoured.
" " " " Spare	1	35	1	50	130	159	18	"	"
Main lubr. pil pumps	2	55	1	95	208	242	14	"	"
Aux. engines cooling pump	2	5	1	4	18	21	16	Rubber	"
Bilge pump	1	16	1	35	61	78	36	"	"
Fire pump	1	34	1	50	130	159	40	Paper	"
Diesel oil transfer pump	1	15	1	25	55	63	50	Rubber	"
Man. compressors	2	60	1	120	228	282	30-50	Paper	"
Circulating pumps for fuel v.	2	1.6	1	1.5	6	7	4	Rubber	"
Turning motor	1	12	1	25	45	63	40	"	"
Emergency compressor	1	1.8	1	2.5	6	13	5	"	"
Purifiers	5	3-4.5	2	4	11-17	21	50	"	"
Steering gear	2	12	2	50	91	99	78	"	"
Hot water pump	1	2	1	2.5	7	13	36	"	"

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.

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.

AKTIEBOLAGET LINDHOLMENS VARV
ELEKTRISKA AVDELNINGEN

Torgve Lefdal

Electrical Contractors.

Date 7.1.1953.

COMPASSES.

Have the compasses been adjusted under working conditions. Yes

AKTIEBOLAGET LINDHOLMENS VARV

Torgve Lefdal

Builder's Signature.

Date 7.1.1953.

Have the foregoing descriptions and schedules been verified and found correct. Yes

Is this installation a duplicate of a previous case. No If so, state name of vessel (Similar to M.t. "NERMA DAN")

Plans. Are approved plans forwarded herewith. No If not, state date of approval 25.10.1952

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith. Yes

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.)

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

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

*
12.1.53.

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

Total Capacity of Generators 490 Kilowatts.

The amount of Fee 4/5 £r. 1700:00 :
When applied for, 9th Jan. 1953.

Travelling Expenses (if any) £ ----- :
When received, 19

Sten Johnson
Surveyor to Lloyd's Register of Shipping.

FRI. 23 JAN 1953

Committee's Minute

Assigned

See F.E. mchly rpt.