

Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

13 FEB 1950

Received at London Office.....

Date of writing Report 25th Jan. 1950. When handed in at Local Office 9th Febr. 1950. Port of Gothenburg.

Survey held at Gothenburg. Date, First Survey 9th Sept. 49 Last Survey 4th February 1950.
No. in Reg. Book. (Number of Visits 24)

35245 on the Motor Tanker "L I N D E S N Ä S" Tons {Gross 1202
Net. 540

Built at Gothenburg. By whom built A-B. Lindholmens Varv. Yard No. 1011. When built 1950.

Owners Redari A-B. Nordstjemen. Port belonging to Stockholm.

Electrical Installation fitted by A-B. Lindholmens Varv. Contract No. ---. 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. No. Sub. Sig. No.

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

Heating. --- Power. 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. --- 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 on each side on the engine room floor. Harbour light-

ing set on starboard side 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. On a platform aft 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. 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. A double pole linked

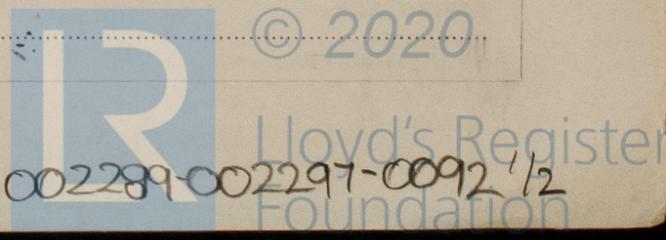
circuit breaker with overload and reversed current trip gear and a single pole equaliser switch.

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. 2. 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 - 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 **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 **Below Rule** state maximum fall of pressure between bus bars and any point under maximum load **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 **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. In accommodations protected by wood covers, behind panels run in conduits.**

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 **---** and with what material **---** **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 **Yes** if so, how are they protected **Approved flame-proof fittings. Cables in gas-tight tubing.**

and where are the controlling switches fitted **Outside the compartment** 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** **Cooking**, is the general construction as per Rule **Yes** are the frames effectually earthed **Yes** 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 **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 **---** **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	45	230	195.5	800	Heavy oil engine	Diesel oil	Above 150° F.
	1	15	230	65.2	800	Heavy oil engine	Diesel oil	Above 150° F.
EMERGENCY								
ROTARY TRANSFORMER	1	HP 12	220	49.7	1450	Electric motor	---	---
		KW 8	115	69.5	1450			

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return) M.	INSULATED WITH	HOW PROTECTED.
		No. in Parallel Per Pole	Sectional Area Sq. mm.	In the Circuit	Rule			
MAIN GENERATOR	45	1	95	195.5	243	16 & 24	Paper	Lead covered & armoured
" " EQUALISER	--	1	95	---	243	8 & 12	"	" "
HARBOUR LIGHTING GENERATOR	15	1	16	65.2	78	16	"	" "
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR	11.5	1	16	49.7	78	6	"	" "
" " GENERATOR	8	1	35	69.5	77.5	6	Rubber	" "

MAIN DISTRIBUTION CABLES.

DESCRIPTION	KILOWATTS	No. in Parallel Per Pole	Sectional Area Sq. mm.	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return) M.	INSULATED WITH	HOW PROTECTED.
K 1		1	50	93	98	Rubber	Lead covered & armoured
K 2		1	35	113	126	Paper	" "

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION	KILOWATTS	No. in Parallel Per Pole	Sectional Area Sq. mm.	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return) M.	INSULATED WITH	HOW PROTECTED.	
WIRELESS								
NAVIGATION LIGHTS	B 6	1	2.5	2.2	12.8	28	Rubber	Lead covered & armoured
ENGINE ROOM	B 1	1	4	18	22.2	6	"	" "
PUMP ROOM AND DECK	B 2	1	4	13.5	22.2	6	"	" "
CREW'S ACCOMMODATION	B 3	1	6	21	29.4	12	"	" "
OFFICERS' ACCOMMODATION AND SALOON	B 4	1	16	32	48.0	16	"	" "
SALOON ETC.	B 5	1	6	15	29.4	6	"	" "
HEATING								
LUBRICATING OIL HEATER		1	16	41	48.0	3	"	" "
FUEL OIL HEATER		1	16	41	48.0	2	"	" "
WATER HEATER		1	10	32	38.2	24	"	" "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B. H. P.	Sectional Area Sq. mm.	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return) M.	INSULATED WITH	HOW PROTECTED.	
CONDENSER CIRCULATING PUMP	1	11	16	43.7	48.0	16	Rubber	Lead covered & armoured
FIRE PUMP	1	9.5	16	38.6	48.0	16	"	" "
BILGE PUMP	1	6	4	21.1	22.2	20	"	" "
MANOEUVRING COMPRESSOR	1	11 KW	25	50.0	62.5	6	"	" "
STARTING UP COMPRESSOR	1	1.6 KW	2.5	9.5	12.8	8	"	" "
TRANSFER PUMPS	2	1	1.5	4.0	6.5	24	"	" "
SPARE LUBRICATING OIL PUMP	1	10	16	36.8	48.0	10	"	" "
FEED PUMP FOR SPANNER BOILER	1	1	1.5	4.7	6.5	12	"	" "
STEERING ENGINE	1	3.5	4	12.5	22.2	30	"	" "
CAPSTAN	1	9 KW	16	41.0	48.0	34	"	" "

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
Jørgue Liddal

Electrical Engineers. Date *1/2-1950*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *About 13 Metres.*

Minimum distance between electric generators or motors and steering compass *About 11 Metres.*

The nearest cables to the compasses are as follows:—

A cable carrying *0.3* Ampères *5* 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.

AKTIEBOLAGET LINDHOLMENS VARV

Jørgue Liddal

Builder's Signature. Date *1/2-1950*

Is this installation a duplicate of a previous case *Yes*. If so, state name of vessel *M/T "Elfnäs" and "Framnäs", Got. reports 16707 & 17035 resp.*

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 in accordance with the Rules and approved plans. The workmanship and materials are good. Makers' certificates of generators and motors are attached.

Noted sub 27/2/50

Total Capacity of Generators *105* Kilowatts.

The amount of Fee	Kr. 1010:-	When applied for, 9/2 1950.
Travelling Expenses (if any)	Kr. ---	

Anders Sjögren for himself and S. Johansson
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FBI, 10 MAR 1950*

Assigned *In uniki see J.E. Rfl.*

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

