

Report on Electrical Equipment.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report **31st Dec 44** When handed in at Local Office **8/1** 19**45** Port of **Gothenburg**No. in Survey held at **Gothenburg** Date, First Survey **23rd Oct.** Last Survey **9th Dec. 1944**
Reg. Book. (Number of Visits **10**)**92569** on the **m.s. "WILHELMINA"** Tons {Gross **2076**
Net **1040**Built at **Gothenburg** By whom built **Eriksbergs Mek.V.A.-B.** Yard No. **327** When built **1944**Owners **Rederi A.-B. Fredrika** Port belonging to **Stockholm**Electrical Installation fitted by **A.S.E.A.** Contract No. **22378** When fitted **1944**Is vessel fitted for carrying Petroleum in bulk **No** 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 **220**Heating **220** 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 atrip 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 theyarranged 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 oftest for machines under 100 kw. been supplied **---** and the results found as per rule **---** Are the lubricating arrangements and the constructionof the generators as per rule **Yes** Position of Generators **In engine room**is the ventilation in way of generators satisfactory **Yes** are they clear of inflammable material **Yes** if situatednear unprotected combustible material state distance from same horizontally **---** and vertically **---** are the generators protected from mechanicalinjury and damage from water, steam and oil **Yes** are the bedplates and frames earthed **Yes** and the prime movers and generators in metalliccontact **Yes** Switchboards, where are main switchboards placed **In 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, steamand oil **Yes**, if situated near unprotected combustible material state distance from same horizontally **---** and vertically **---** what insulationmaterial is used for the panels **Steel insulated with mica** if of synthetic insulating material is it an Approved Type **---** if ofsemi-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 fusesto 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 at each pole**Are compartments containing switchboards composed of fire-resisting material or lined as per Rule **Yes** Instruments on main switchboard **6**ammeters **4** voltmeters **---** synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to theequaliser connection **Yes** Earth Testing, state means provided **Ohm-meter fitted for both poles**

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 **6.5 v.**..... are the ends of all cables having a sectional area of 0.04 square inch and above provided with **bolted clamps** **Yes**..... Are paper insulated **-----** 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.

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 **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 **Yes**..... 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 **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 **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	3	3 x 105	220	477	365	Diesel oil engines	Diesel oil	Above 150° F.
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return) in metres.	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	I 105	3	120	477	525	16	Rubber	Lead covered & armoured.
" " EQUALISER	II 105	3	120	477	525	14	"	"
" " EQUALISER	III 105	3	120	477	525	14	"	"
" " EQUALISER	III 105	3	120	477	525	14	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS								
Hydrofords	1	2.5	8	12.8	30	"	"	"
Lighting in refrigerated holds	1	2.5	5	12.8	10	"	"	"
Pentry	1	4	16	22.2	25	"	"	"
Workshop motor etc.	1	25	13	62.5	10	"	"	"
Refr. pumps and fan	1	150	198	202	40	"	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	6		29.4	70	"	"	"
NAVIGATION LIGHTS	1	2.5	2	12.8	70	"	"	"
LIGHTING AND HEATING								
Distr. board: Saloon accom.	1	6	28	29.4	60	"	"	"
" " Officers' accomm.	1	6	24	29.4	50	"	"	"
" " Crew accom.	1	4	15	22.2	110	"	"	"
" " Engine room	1	4	15	22.2	10	"	"	"
" " Deck forward	1	4	20	22.2	140	"	"	"
" " Deck aft	1	2.5	12	12.8	80	"	"	"
Fuel oil heater	1	25	55	62.5	60	"	"	"
Lubricating oil heater	1	25	55	62.5	60	"	"	"
Brine heater	1	10	58	60	20	Paper	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Windlass	1 42 BHP	1	120	160	231	140	Rubber	"
Steering engine	1 15 BHP	1	16	58	78	120	Paper	"
Winches H 1	2 11.8 KW	1	50	82	98	120	Rubber	"
Winches H 2	2 11.8 KW	1	50	82	98	110	"	"
Winches H 3	2 11.8 KW	1	50	82	98	70	"	"
Winches H 4	2 11.8 KW	1	50	82	98	90	"	"
Winches H 5	2 11.8 KW	1	50	82	98	100	"	"
Ballast pump	1 12 KW	1	25	63	62.5	70	"	"
Bilge pump	1 4.4 KW	1	6	23.5	29.4	40	"	"
Cool. water & lubr. oil pump	2 24 KW	1	70	123	124	76	"	"
Fuel oil pump	1 2.5 BHP	1	2.5	10.2	12.8	56	"	"
Cool. wtr. pump for aux. eng.	1 1.8 KW	1	2.5	10.5	12.8	76	"	"
Fuel oil separator	1 2.5 BHP	1	2.5	10.4	12.8	58	"	"
Lubricating oil separator	1 25 BHP	1	2.5	10.4	12.8	60	"	"
Workshop motor	1 1.5 KW	1	2.5	8.7	12.8	74	"	"
Turning gear	1 6 KW	1	10	32	38	42	"	"
NH ³ compressors	2 60 BHP	2	70	229	248	50	"	"
Refr. cooling water pump	2 3 KW	1	4	16.5	22.2	20	"	"
Refr. brine pumps	2 9 KW	1	10	46	60	20	Paper	"
Refr. fans	2 8 HP	1	6	23.5	29.4	40	Rubber	"
Provision refr. engine	1 5 HP	1	4	21	19	40	"	"



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Lloyd's Register
Foundation

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.

Almänna Svenska Elektriska Aktiebolaget
Finska 1 Göteborg
Filialchef

Electrical Engineers.

Date

4.1.1945

COMPASSES.

Minimum distance between electric generators or motors and standard compass About 20 metres.

Minimum distance between electric generators or motors and steering compass About 18 metres.

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 9 feet from standard compass 7 feet from steering compass.

A cable carrying 75 Ampères 12 feet from standard compass 6 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 ---

The maximum deviation due to electric currents was found to be degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

Eriksbergs Mek. Verkstads Aktiebolag

Builder's Signature.

Date

4.1.1945.

Is this installation a duplicate of a previous case Yes If so, state name of vessel. m. s. "Fylgia". Rpt. 13796.

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

This electric installation has been fitted on board this vessel under my 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.

Total Capacity of Generators 315 Kilowatts.

The amount of Fee	Got. a/c	733:40	When applied for, 29/12.1944.
	Sk. a/c	183:35	
Travelling Expenses (if any) £		68:00	When received 29/12.1944.
	Sk. a/c		

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

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