

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) Received at London Office 8 JAN 1929

of writing Report 4th Jan 1929 when handed in at Local Office 5th Jan 1929 Port of Gothenburg

in Survey held at Gothenburg Date, First Survey 28th Nov Last Survey 29th Dec 1928  
(Number of Visits 10)

Book. (Supplement) 292 on the Twin Screw Motor vessel "GLARONA" Tons { Gross 9912 Net 5221

built at Gothenburg By whom built AB. Götaverken Yard No. 414 When built 1928

owners Henry Tschudis Tankrederi A/S Port belonging to Oslo.

Electric Light Installation fitted by AB. Götaverken, Contract No. 414 When fitted 1928.

System of Distribution Two-wire system.

Pressure of supply for Lighting 110 volts, Heating (Cooking) 220 volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct Power Direct

alternating current system, state frequency of periods per second

As the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes

Generators, do they comply with the requirements regarding rating Yes, are they compound wound Yes

are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator

Where more than one generator is fitted are they arranged to run in parallel Yes, is an adjustable regulating resistance fitted in

series with each shunt field Yes

Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed,

short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators On a platform aft in the motor room

is the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

and, are the generators protected from mechanical injury and damage from water, steam or oil Yes

are their axes of rotation fore and aft Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and

their respective generators in metallic contact Yes

Main Switch Boards, where placed On a platform over the generators

If the generators and main switchboard are not placed in the same compartment, is each generator provided with

a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes

are they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards

are they constructed wholly of durable, non-ignitable non-absorbent materials of marble, is all insulation of high dielectric strength and of

permanently high insulation resistance Yes, if semi-insulating material is used, are all conducting parts insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes

and is the frame effectively earthed Yes Are the fittings as per Rule regarding:— spacing or shielding of live parts

Yes, accessibility of all parts Yes, absence of fuses on back of board, proportion of omnibus

bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For each generator:

A double pole circuit-breaker with overload and reversed current trips and a single pole

equalizer switch. For each outgoing circuit: A double pole linked switch and a fuse at each pole.

Instruments on main switchboard 6 ammeters 4 voltmeters synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system ohm-meters fitted

with commutator for both poles.

Switches, Circuit Breakers and Fusible Cut-outs; do these comply with the requirements of the Rules Yes.

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN		2-66	220	2-300	400	3- Diesel motors 1- Steam engine	Diesel oil	Above 150° F.
AUXILIARY	4	1-33	220	1-150	400			
EMERGENCY		1-5	110	1-45	430			
ROTARY TRANSFORMER	1	14	P-220 S-110	75 127	1650			

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	95	19	2.52	2-300	11-12	Rubber	Lead covered and steel armoured.
	EQUALISER CONNECTIONS	1	95	19	2.52	1-150	15		
	AUXILIARY GENERATOR	1	16	7	1.71	1-45	10		
	EMERGENCY GENERATOR	1	P-25 S-70	7	2.13	75	10		
	ROTARY TRANSFORMER	1		19	2.17	127	10		
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM	1	4	7	0.86	20	10	-"	-"
	ACCOMMODATION boards	1	6	7	1.05	22	50	-"	-"
	Distr. board B.	1	6	7	1.05	20	50	-"	-"
	" " C.	1	35	19	1.53	40	200	-"	-"
	" " D.	1	4	7	0.86	5	220	-"	-"
	" " E.	1	10	7	1.35	8	110	-"	-"
	Branch circ.	1	1.5	1	1.38	6		-"	Lead covered or lead covered a. steel wire plated
	<b>Cooking:</b>								
	220 volt Galley board	1	50	19	1.83	78	50	-"	Lead covered a. steel armoured.
	WIRELESS	1	10	7	1.35	20	220	-"	-"
	SEARCHLIGHT						200	-"	-"
	MASTHEAD LIGHT	1	1.5	1	1.38	1	110	-"	-"
	SIDE LIGHTS	1	1.5	1	1.38	1	40	-"	Lead covered a. steel wire plated
	COMPASS LIGHTS	1	1.5	1	1.38	0.25	20	-"	-"
	POOP LIGHTS	1	1.5	1	1.38	1	240	-"	Lead covered a. steel armoured.
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	16	7	1.71	48	50	Rubber.	Lead covered a. steel armoured
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP	1	10	7	1.35	32	70	-"	-"
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP	1	1.5	1	1.38	4	20	-"	-"
	ENGINE TURNING GEAR	2	2.5	1	1.78	12	40	-"	-"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	120	37	2.08	200	32-36	-"	-"
	OIL FUEL TRANSFER PUMP	1	10	7	1.35	36	60	-"	-"
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR	1	50	19	1.83	130	90	-"	-"
	(b) MAIN MOTOR	1	50	19	1.83	113	10	-"	-"
	WORKSHOP MOTOR	2	2.5	1	1.78	8	34-46	-"	-"
	VENTILATING FANS								
	Refrigerator	1	16	7	1.71	48	50	-"	-"
	Lubr. oil separator	1	2.5	1	1.78	8	54	-"	-"
	Fuel oil separator	1	2.5	1	1.78	8	54	-"	-"
	Cooling w. pump	1	2.5	1	1.78	10	50	-"	-"
	Hot w. pump	1	2.5	1	1.78	4		-"	-"

**Cables:** Single, twin, concentric, or multicore single and twin ones are the cables insulated and protected as per Tables IV or V of the Rules. **Yes**

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load **2 volt + 3 per cent for lighting 2 volt + 3 per cent for power**

**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets **Yes**

**Paper Insulated Cables.** If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound

**Cable Runs,** are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage **Yes**

**Support and Protection of Cables,** state how the cables are supported and protected **supported by metal-clips. All power-cables lead-covered and armoured. Lighting cables lead-covered in cabins. For the rest lead-covered and steel wire plated or armoured.**

If cables are run in wood casings, are the casings and caps secured by screws **Yes**, are the cap screws of brass **Yes**, are the cables run in separate grooves **No**. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII **Yes**

**Refrigerated Chambers,** if lights are fitted, are the cables and fittings in accordance with the special requirements **Yes**

**Joints in Cables,** state if any, and how made, insulated, and protected **No joints in main cable. Joints in section cables as per Rule.**

**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands **Yes.**

**Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed **Yes**, state the material of which the bushes are made **Lead.**

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas

are their connections made as per Rule

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule **Yes.**

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven

**Navigation Lamps,** are these separately wired **Yes**, controlled by separate switch and separate fuses **Yes**, are the fuses double pole **Yes**, are the switches and fuses grouped in a position accessible only to the officers on watch **Yes**, has each navigation lamp an automatic indicator as per Rule **Yes**

**Secondary Batteries,** are they constructed and fitted as per Rule

**Fittings,** are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight **Yes**, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected **Lamps contained in gastight fittings**, how are the cables led **In gastight tubings**

where are the controlling switches situated **Outside of the dangerous space**

**Searchlight Lamps,** No. of \_\_\_\_\_, whether fixed or portable \_\_\_\_\_, are their fittings as per Rule

**Arc Lamps,** other than searchlight lamps, No. of \_\_\_\_\_, are their live parts insulated from the frame or case \_\_\_\_\_, are their fittings as per Rule

**Motors,** are their working parts readily accessible **Yes**, are the coils self-contained and readily removable for replacement **Yes**, are the brushes, brush holders, terminals and lubricating arrangements as per Rule **Yes**, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material **Yes**, are they protected from mechanical injury and damage from water, steam or oil **Yes**, are their axes of rotation fore and aft **Yes, all except the turning motors**, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type \_\_\_\_\_, if not of this type, state distance of the combustible material horizontally or vertically above the motors \_\_\_\_\_ and \_\_\_\_\_

**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule **Yes**

**Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule **Yes**

**Ships carrying Oil having a Flash Point less than 150 F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings **Yes**

If portable lamps for use in **dangerous spaces** are supplied, are they of a type approved by the Home Office **No portable lamps supplied for use in dangerous spaces.**

All Conductors are of annealed copper conforming to British Standard Specification No. 7.  
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.  
 The foregoing is a correct description.

El. AB. Siemens and AB. Götaverken.

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass about 30 met.

Distance between electric generators or motors and steering compass about 30 met.

The nearest cables to the compasses are as follows:—

A cable carrying \_\_\_\_\_ Ampères \_\_\_\_\_ feet from standard compass \_\_\_\_\_ 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 \_\_\_\_\_

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.

AKTIEBOLAGET GÖTAVÄRKEN

*E. S. Medus*

Builder's Signature.

Date

Is this installation a duplicate of a previous case No. \_\_\_\_\_ If so, state name of vessel \_\_\_\_\_ ✓

General Remarks (State quality of workmanship, opinions as to class, &c. \_\_\_\_\_)

*This Electric Installation has been fitted on board this vessel under our inspection and has been tested & found satisfactory. The workmanship is good. All the Rule requirements have been complied with.*

*It is submitted that this vessel is eligible for THE RECORD.*

*Elec Light*

*10/1/29*

Total Capacity of Generators 170 Kilowatts.

The amount of Fee ... £ 637.00

When applied for, 5th Jan 1929

Travelling Expenses (if any) £ :

When received, 11.2.29

*Sy Brander E. Bernelius*  
 Surveyors to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*Elec Light*

Im. 127.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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