

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office SEP 7 1937

Date of writing Report 23rd Aug. 1937 When handed in at Local Office 19 Port of Oslo

No. in Survey held at Fredrikstad Date, First Survey 29th June 1937 Last Survey 21st August 1937  
Reg. Book.

on the steel screw steamer "FRANS-GORTHON"

Built at Fredrikstad By whom built Fredrikstad Mek. Verhsted Yard No. 283 When built 1937

Owners Rederiaktieselskabet Lyfse Port belonging to Helsingborg

Electric Light Installation fitted by Fredrikstad Mek. Verhsted Contract No. When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk no

System of Distribution direct current constant pressure, two wire system

Pressure of supply for Lighting 115 115 volts, Heating 115 volts, Power (vent. fans) 115 volts.

Direct or Alternating Current, Lighting direct current Power

If alternating current system, state frequency of periods per second

Has 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 no, change-over system 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 Engine room, SB side

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 engine room forward bulkhead, SB side

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 Yes, 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

and is the frame effectively earthed 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 Yes, 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

2-poled switches for each generator and all outgoing circuits

Instruments on main switchboard 2 ammeters 2 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 meter with

changeover-switch for + pole; -pole and direct indicating for each generator

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

Cables: Single, twin, concentric, or multicore twin 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 4 volts

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 yes

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 Cables are run in pipes fore and aft, securely supported and secured in places by clips spaced as per Table VIII

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 yes. 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 W.T. metal boxes, with porcelain jointing insulators

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

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 in all jointing boxes, all cables are earthed, 10.3 mm. sect. area.

are their connections made as per Rule yes

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 yes

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, in chart house

has each navigation lamp an automatic indicator as per Rule yes

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

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 Cables are run in iron pipes under deck

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected No

are the cables led yes

where are the controlling switches situated yes

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

Are Lamps, other than searchlight lamps, No. of yes, are their live parts insulated from the frame or case yes, are their fittings as per Rule yes

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

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 totally enclosed if not of this type, state distance of the combustible material horizontally or vertically above the motors yes and yes

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 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	1	8	115	70	500	Steam engine	best oil	above 150° F.
AUXILIARY	2	4	115	35	1000	Lister oil engine		
EMERGENCY								
ROTARY TRANSFORMER		0.5	115	4	1500			

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole sq. mm.	No.	Diameter. mm.	In Circuit.	Rule.			
MAIN GENERATOR	1	35	15	1.73	100	125	15 m.	Paper	Iron arm.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	16	7	1.72	60	49.75	17	Rubber	" "
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	1.5	1	1.37	10	9.514		Rubber	Iron arm.
BOILER ROOM	1	1.5	1	1.37	10	9.514	40	" "	" "
AUXILIARY SWITCHBOARDS									
Box, after mast	1	6	7	1.04	25	29.31	70	" "	" "
fore mast	1	10	7	1.35	35	38.43	100	" "	" "
Refr. motor	1	2.5	7	.67	15	15.20	43	" "	" "
ACCOMMODATION									
Officers	1	16	7	1.72	60	49.75	55	" "	" "
Crew	1	4	7	.72	20	12.525	20	" "	" "
WIRELESS		2.5	7	.67	15	15.20	45	" "	" "
SEARCHLIGHT									
MASTHEAD LIGHT		1.5	1	1.37	10	9.514	120	" "	" "
SIDE LIGHTS		1.5	1	1.37	10	9.514	25	" "	" "
COMPASS LIGHTS		1.5	1	1.37	10	9.514	7	" "	" "
POOP LIGHTS		1.5	1	1.37	10	9.514	135	" "	" "
CARGO LIGHTS		1.5	1	1.37	10	9.514	23	" "	" "
ARC LAMPS									
HEATERS									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole sq. mm.	No.	Diameter. mm.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										
	1	1	1.5	1	1.37	10	9.514	10	Rubber	Iron arm.
	1	1	1.5	1	1.37	10	9.514	10	" "	" "
	1	1	1.5	1	1.37	10	9.514	170	" "	" "
	1	1	1.5	1	1.37	10	9.514	26	" "	" "
	1	1	1.5	1	1.37	10	9.514	10	" "	" "
	1	1	1.5	1	1.37	10	9.514	10	" "	" "
3 fans for accommodation	1	1	1.5	1	1.37	10	9.514	3 x 20	" "	" "

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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.

J. Quane

Electrical Engineers.

Date

17/8/37

#### COMPASSES.

Distance between electric generators or motors and standard compass *at 7 m.*

Distance between electric generators or motors and steering compass *" 6 m.*

The nearest cables to the compasses are as follows:—

A cable carrying	• 3	Ampères	2	feet from standard compass	4	feet from steering compass.	} Electrical lamps in binnacles.
A cable carrying	• 4	Ampères	10	feet from standard compass	10	feet from steering compass.	
A cable carrying	• 4	Ampères	16	feet from standard compass	15	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 *nil* degrees on *✓* course in the case of the standard compass, and *nil* degrees on *✓* course in the case of the steering compass.

FREDRIKSTAD MEK. VERKSTED

Builder's Signature.

Date

2/9/37

Is this installation a duplicate of a previous case *yes*. If so, state name of vessel *"HERMA GORTON", yard N° 281.*

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

The electric installation on this vessel has been examined during the fitting up of the generators, cables and switch boards. The materials employed appear to be good, and the workmanship is good. - The installation has been carried out in accordance with the approved plans and the Secretary's letters in connection therewith. The installation was tested as required by the Rules, Section 17 and found to be satisfactory.

Noted

17/9/37

It is recommended that this installation be classed in the Society's Register Book.

Total Capacity of Generators *12* Kilowatts.

The amount of Fee ... *1 K 238.80*

When applied for,

*4/7/37*

Travelling Expenses (if any) *nil*

When received,

*1.10.37*

Surveyor to Lloyd's Register of Shipping.

*Guide*

Committee's Minute

FRI 24 SEP 1937

Assigned *See other FE report*



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