

Rpt. 13.

No. 8097

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 20 OCT 1930

Date of writing Report 13.10. 1930 When handed in at Local Office 16th Oct. 1930 Port of Gothenburg

No. in Survey held at Gothenburg

Date, First Survey 16th June Last Survey 8th September 1930

Reg. Book.

66887 on the M/S "Capella"

(Number of Visits 14)

Tons { Gross 9682,58
Net 5621,32

Built at Gothenburg

By whom built Eriksbergs Mek. Verkstad

Hull No. 236 When built 1930

Owners Trelleborgs Ångfartygs Nya AB.

Port belonging to Trelleborg

Electric Light Installation fitted by Elektr. ABol. A E G, Gothenburg

Contract No. When fitted 1930

Is the Vessel fitted for carrying Petroleum in bulk yes

System of Distribution two wire system

Pressure of supply for Lighting 110 volts, Heating 220 volts, Power 110 & 220 volts.

Direct or Alternating Current, Lighting direct Power direct

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 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 aft in the engineroom

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 in the engineroom

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 ✓ and ✓

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 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 for each generator:

A double pole circuit breaker with overload and reversed current trips and a single pole equaliser switch. For each outgoing circuit: A fuse on each pole and a double pole linked switch

Instruments on main switchboard 3 ammeters 3 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 ohmmeters fitted

with commutators 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

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Lloyd's Register
Foundation

Cables: Single, twin, concentric, or multicore twin are the cables insulated and protected as per Tables IV or V of the Rules yes IV
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 2 volt + 3,2 pr cent for lighting
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 paper insulated cables are not used.
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 mental-clips. All powercables lead covered and armoured, lightcables in cabins lead covered, otherwise armoured or steelwired.
If cables are run in wood casings, are the casings and caps secured by screws ✓, are the cap screws of brass ✓, 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 maincables are not jointed. Section cables are jointed in porcelainboxes and boxes 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 do not occur state the material of which the bushes are made
Earthing Connections, state what earthing connections are fitted and their respective sectional areas
yes, 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
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 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 no
are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected the lamps contained in gastight fittings.
in gastight tubing.
where are the controlling switches situated outside of dangerous spaces.
Searchlight Lamps, No. of 1, whether fixed or portable 1, are their fittings as per Rule yes
Arc Lamps, other than searchlight lamps, No. of 1, 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, except motors for turning gears
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 yes, 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.

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	87	220		350	auxiliary Diesel engines	Diesel oil	above 150° F		
AUXILIARY ...	1	14	110		650	" steam engine				
EMERGENCY ...										
Main	1	70	220		1500	" " turbine				
ROTARY TRANSFORMER										

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return) in Meters.	Insulated with	HOW PROTECTED.
		Total Effective Area per Pole in sq. mm.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATOR ...	3	95	37	1,80	300	300	22	Rubber	armoured part in iron pipes	
EQUALISE CONNECTIONS ...	6	95	37	1,80	300	300	10	"	"	
AUXILIARY GENERATOR ...	1	70	37	1,55	127	150	17	"	"	
EMERGENCY GENERATOR ...										
ROTARY MOTOR ...	1	50	19	1,83	65	100	7½	"	"	
TRANSFORMER GENERATOR ...	1	50	19	1,83	65	100	7½	"	"	
ENGINE ROOM ...	1	6	7	1,05	25½	28	5½	"	"	
BOILER ROOM ...										
AUXILIARY SWITCHBOARDS ...										
Distrib. board A	1	4	7	0,86	4	22	87	"	"	
" " B	1	16	7	1,70	20	50	77½	"	"	
" " C	1	4	7	0,86	11	22	15	"	"	
" " D	1	4	7	0,86	10	22	13	"	"	
" " F	1	16	7	1,70	20	50	17	"	"	
Accumulator ...										
" " G	1	16	7	1,70	8	50	104	"	"	
" " H	1	16	7	1,70	20	50		"	"	
WIRELESS ...	1	6	7	1,05	24	28	100	"	"	
SEARCHLIGHT ...										
MASTHEAD LIGHT ...	1	1,5	1	1,38	1	10	133	"	"	
SIDE LIGHTS ...	1	1,5	1	1,38	1	10	15	"	"	
COMPASS LIGHTS ...	1	1,5	1	1,38	1	10	14	"	"	
POOP LIGHTS ...	1	1,5	1	1,38	1	10	111	"	"	
CARGO LIGHTS ...										
ARC LAMPS ...										
Owen	1	6	7	1,05	20	28	22	"	"	
Heaters for fuel & lubr. oil	2	16	7	1,70	50	50	28	"	"	

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return) in mtr.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole in sq. mm.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...	1	1	16	7	1,70	50	50	34	Rubber	armoured part in iron pipes
MAIN BILGE LINE PUMPS ...										
GENERAL SERVICE PUMP ...										
EXHAUSTOR BILGE PUMP and										
SANITARY PUMP ...	1	1	10	7	1,35	32	38	44½	"	"
CIRC. SEA WATER PUMPS ...										
CIRC. FRESH WATER PUMPS ...										
AIR COMPRESSOR ...										
FRESH WATER PUMP ...										
ENGINE TURNING GEAR 2 off. 2	1	2½	7	0,67	10	15	15	"	"	
ENGINE REVERSING GEAR ...										
LUBRICATING OIL PUMPS and	2	1	120	37	2,03	150	175	21	"	"
cool water pumps comp.	1	1	16	7	1,70	36	50	15	"	"
OIL FUEL TRANSFER PUMP ...										
WINDLASS ...										
WINCHES, FORWARD ...										
110 V condensator pump	1	1	2½	7	0,67	10	15	33	"	"
WINCHES, AFT ...										
STEERING GEAR—										
(a) MOTOR GENERATOR ...										
(b) MAIN MOTOR ...	2	1	70	37	1,55	110	150	40	"	"
WORKSHOP MOTOR ...	1	1	2½	7	0,67	12	15	44½	"	"
VENTILATING FANS ...										
110 V refrig. machine	1	1	50	19	1,83	3	100	30	"	"
fuel oil separator	1	1	1½	1	1,38	6,7	10	11	"	"
lubr. oil	1	1	1½	1	1,38	6,7	10	28	"	"
bath water pump	1	1	1½	1	1,38	5,0	10	41	"	"
fuel oil pump	1	1	16	7	1,70	28	50	130	"	"

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.

ELEKTRISKA AKTIEBOLAGET A. E. G.

STOCKHOLM

Electrical Engineers.

Date 13.10.1930.

COMPASSES.

Distance between electric generators or motors and standard compass about 15 metres

Distance between electric generators or motors and steering compass " 15 "

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.

Eriksbergs Mekaniska Verkstads Aktiebolag

Builder's Signature.

Date 16.10.1930.

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 my inspection and has been tested and found satisfactory.

The workmanship is good.

All the Rules requirements have been complied with.

It is submitted that this vessel is eligible for THE RECORD. Elec. Light.

Total Capacity of Generators 258 Kilowatts.

The amount of Fee ... 76.690.69 : When applied for, 16/9 1930
Travelling Expenses (if any) £ : When received, 3/10 1930

E. Bernerius
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned