

Rpt. 13.

# REPORT ON ELECTRIC FITTINGS.

No. 8167.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

F 3 FEB 1930

Date of writing Report 19/ 1930 When handed in at Local Office

Received at London Office

No. in Survey held at Odense

Port of Copenhagen

Date, First Survey 18/9 29

Last Survey 17/1

1930

41140 on the Steel Twin S. Motor vessel 'Lauritz Swenson'

(Number of Visits 13)

Built at Odense

By whom built Odense Maskarbejdsby Yard No. 35

Tons { Gross 5724.72  
Net 3556.10

Owners M. Gauger, Rolf (F. Olsen &amp; Co.)

Port belonging to Oslo

When built 1929

Electric Light Installation fitted by M. Dansk Elektriske Kompagni

Contract No.

When fitted 1929-30

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution

Two conductors insulated system.

Pressure of supply for Lighting

110

volts, Heating

volts, Power

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

placed in the main motor room, port side, floor level.

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.

their respective generators in metallic contact

yes.

are the prime movers and

Main Switch Boards, where placed on a platform in the forward end of the motor room.

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.

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.

permanently high insulation resistance

yes.

, is all insulation of high dielectric strength and of

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: on 260

pole linked circuit breaker with overload &amp; reverse current trip &amp; equalizer switch as per Ld. 3, par. 39 (f).

Outgoing circuits: One double pole linked switch with a fuse on each pole.

Instruments on main switchboard

8

ammeters

5

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

2 sets of earth lamps, 1 Voltmeter fitted with a scale.

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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Cables: Single, twin, concentric, or multicore *single & 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 *5 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 *armoured or steel wire braided cables used, laid on steel plates supported by clips, in holds laid in iron tubes under upper deck beams*.

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 *No joints in cables*.

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 *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 *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*.

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 *yes*.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *yes*, how 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 *yes*, 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	3	100	220	455	400	3-cyl Diesel oil engine	ord. Diesel oil	above 150° F.
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER	1	20	110	182	1500	30 HP electromotor		

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins. per sq. in.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	475	91	2.60	455	465	44	india	lead coated and
EQUALISER CONNECTIONS		475	91	2.60		465	22	rubber	steel wire armoured.
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER	1	50	19	1.83	100	100	39		
GENERATOR	1	125	37	2.07	182	185	41		
ENGINE ROOM	1	6	7	1.05	20	25	3		
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
NAVIGATION LIGHTS	1	2.5	7	0.67	44	15	136		
ACCOMMODATION									
AFT	1	6	7	1.05	15	28	146		
DECKHOUSE I	1	10	7	1.35	20	38	47		
" II	1	10	7	1.35	25	38	118		
WIRELESS	1	10	7	1.35	ca. 10	38	139		
SEARCHLIGHT	1	1.5	1	1.38	0.2	10	152		
MASTHEAD LIGHT	1	1.5	1	1.38	0.2	10	31		
SIDE LIGHTS	1	1.5	1	1.38	0.2	10	19		
COMPASS LIGHTS	1	1.5	1	1.38	0.2	10	198		
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins. per sq. in.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	25	7	2.13	50	63	56	india	lead coated and steel wire armoured
MAIN BILGE LINE PUMP AND SANITARY GENERAL SERVICE PUMP	1	1	16	7	1.70	30	48	59		armoured
EMERGENCY BILGE PUMP										
SANITARY PUMP	1	1	6	7	1.05	11	28	76		lead coated and steel wire braided.
CIRC. SEA WATER PUMPS FOR CO. CONDENSERS	2	1	6	7	1.05	20	28	73		
CIRC. FRESH WATER PUMPS										
CO. AIR COMPRESSORS	2	1	200	37	2.616	250	245	24		
FRESH WATER PUMP										
ENGINE TURNING GEAR	2	1	6	7	1.05	20	28	68		
ENGINE REVERSING GEAR										
COOLING WATER AND LUBRICATING OIL PUMPS	2	1	125	37	2.07	170	185	19		
OIL FUEL TRANSFER PUMP	1	1	25	7	2.13	67	63	68		
WINDLASS	1	1	100	37	2.27	150	205	160		
WINCHES, FORWARD	2	2	70+4	19	2.16-0.88	165	172	174		
WARPING WINCH	1	1	70	19	2.16	110	150	141		
WINCHES, AFT	2	2	70+4	19	2.16-0.88	165	172	103		
" AMIDSHIPS	2	2	70+4	19	2.16-0.88	165	172	32		
STEERING GEAR										
(a) MOTOR GENERATOR	1	1	50	19	1.83	75	100	160		
(b) MAIN MOTOR										
WORKSHOP MOTOR	1	1	6	7	1.05	10	28	49		
VENTILATING FANS	2	1	25	7	2.13	52	63	42		
"	2	1	6	7	1.05	20	28	136		
"	2	1	6	7	1.05	10	28	58		
"	2	1	6	7	1.05	20	28	47		
BRINE CIRCULAT. PUMPS	2	1	6	7	1.05	8	28	45		
"	1	1	6	7	1.05		28	32		
FUEL OIL PURIFIERS	2	1	2.5	7	0.67	10	15	19		
LUBR. OIL	1	1	2.5	7	0.67	7	15			

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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.

**Dansk Elektricitets Compagni**  
*L. J. Jørgensen*

Electrical Engineers.

Date 25 - 5 - 1930

#### COMPASSES.

Distance between electric generators or motors and standard compass 20'

Distance between electric generators or motors and steering compass 16'

The nearest cables to the compasses are as follows:—

A cable carrying 0.2 Ampères 11" feet from standard compass 11" feet from steering compass.

A cable carrying 1.5 Ampères 10 feet from standard compass 6 feet from steering compass.

A cable carrying 0.2 Ampères 12 feet from standard compass 5 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 any course in the case of the standard compass, and 0 degrees on any course in the case of the steering compass.

PR. ODENSE STAALSKIBSVÆRFT  
VED A. P. MØLLER

Builder's Signature.

Date 28/1/1930

*Johannes Møller*

Is this installation a duplicate of a previous case yes. If so, state name of vessel 7/1 Abraham Lincoln.

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

The electric light and power installation as above described has been fitted in accordance with the Society's Rules, the approved plan (as amended) and the requirements contained in the Surveyor's letter dated 15/1/1929.

The material used for the installation is of good quality and the workmanship of generally good description throughout.

After completion the whole installation was tested under full power working conditions and found satisfactory.

Recommend the vessel to have notation of "ELECTRIC LIGHT" in the Register Book.

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

*Electric Light*

*R. J. 6/2/30*

Total Capacity of Generators 300 Kilowatts.

The amount of Fee ... £ 70.9.80 : { When applied for, 30.1.19.30

Travelling Expenses (if any) £ 17.3.30 : { When received, 17.3.30

*Ch. Hoff*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 7 FEB 1930

Assigned

*Elec. Lt.*

1m. 12.23.—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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