

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

10 JAN 1927

Date of writing Report 22/12 1926 When handed in at Local Office 19 Port of Copenhagen

No. in Survey held at Odense Date, First Survey 3/11 26 Last Survey 16/12 1926

Reg. Book.

89681 on the Hull Tvin L. motor vessel "Vente Nelson"

Tons { Gross 7468.20

Net 4724.44

Built at Odense By whom built Odense Skarshedsroftard No. 24 When built 1926

Owners A/S Borga og Sønner Olsen Port belonging to Oslo

Electric Light Installation fitted by Dansk Elektricitets Compagni, A/S Contract No. When fitted 1926

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 in port side of motor room, axis of rotation for and aft directions

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 yes., 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 at 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., 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 miculate 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.

individual fuses to voltmeter, pilot or earth lamp.

connections of switches.

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

a 266 pole linked switch and a single pole equalizer switch as per Sect. 3, para 3, A,

clause (f), for each outgoing circuit: a 266 pole linked switch and a fuse on each pole.

Instruments on main switchboard 8 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.

2 Ohmmeters and 2 sets of earth lamps fitted.

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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main cables: single branch
Cables: Single, twin, concentric, or multicore *single* 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 *armoured or steel wire braided cables used supported by clips or run in galvanized iron tubes*.

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 *None*.

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 *None*.
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 *None*, whether fixed or portable *yes*, are their fittings as per Rule *yes*.

Arc Lamps, other than searchlight lamps, No. of *None*, 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 the star running motor for the cooling water & lubricating oil pumps*,
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 *None*.

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- Fuel Inlet Diesel oil engine.	Diesel oil	above 150°F
AUXILIARY ...								
EMERGENCY ...								
ROTARY ENGINE	1	20	110	182	1350	Electric motor.		

LIGHTING AND HEATING CONDUCTORS

[illegible]

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. ins. <i>m.m</i>	COMPOSITION OF STRAND.		Total Maximum Current am. circ.	Approximate Length (Loss as Return) feet. <i>Wt</i>	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	25 ✓	7	2.13	50	55	india rubber	lead covered
	MAIN BILGE LINE PUMPS } SANITARY GENERAL SERVICE PUMP ...	1	16 ✓	7	1.90	30	60	"	and shut wire
	EMERGENCY BILGE PUMP	1	6 ✓	7	1.05	14	55	"	armoured
	SANITARY PUMP	2	6 ✓	7	1.05	20	40	"	"
	CIRC. SEA WATER PUMPS ...	2	200 ✓	37	2.62	250	30	"	"
	CIRC. FRESH WATER PUMPS <i>CO₂</i> AIR COMPRESSOR	2	6 ✓	7	1.05	20	60	"	"
	FRESH WATER PUMP	2	95 ✓	19	2.52	134	25	"	"
	ENGINE TURNING GEAR ...	1	25 ✓	7	2.13	50	46	"	"
	ENGINE REVERSING GEAR COOLING WATER AND LUBRICATING OIL PUMPS }	2	150 ✓	37	2.27	194	200	"	shut wire braided
	OIL FUEL TRANSFER PUMP	2	70 50	19	2.6 1.83	2x74 2x50	160	"	ant run in
	WINDLASS	4	95 35	19	2.8 1.53	4x50 1x44	40	"	galv. iron tube.
	WINCHES, FORWARD ...	2	50	19	1.83	2x50	92	"	- - -
	WINCHES, AFT - " - SHIPS ...	2	50	19	1.83	2x50	92	"	- - -
	STEERING GEAR—	1	50	19	1.83	140	200	"	shut wire armoured
	(a) MOTOR GENERATOR ...	1	50	19	1.83	120	15	"	" " "
	(b) MAIN MOTOR	1	6 ✓	7	1.05	14	60	"	" " "
	WORKSHOP MOTOR	2	16 ✓	7	1.90	40	27	"	" " "
	VENTILATING FANS	2	6 ✓	7	1.05	20	80	"	" " "
	- " -	2	6 ✓	7	1.05	10	29	"	" " "
	- " -	2	6 ✓	7	1.05	20	30	"	" " "
	BRINE PUMPS	1	6 ✓	7	1.05	8	30	"	" " "
	- " -	1	50 ✓	19	1.83	100	33	"	" " "
	ROTARY TRANSFORMER	1	50 ✓	19	1.83	100	33	"	" " "

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.

Lyngbyef.

Electrical Engineers.

Date *28/12 - 26*

COMPASSES.

Distance between electric generators or motors and standard compass *21'*

Distance between electric generators or motors and steering compass *14'*

The nearest cables to the compasses are as follows:—

A cable carrying *2* Amperes *8* feet from standard compass *7* feet from steering compass.

A cable carrying *20* Amperes *26* feet from standard compass *20* feet from steering compass.

A cable carrying *1/4* Amperes *10"* feet from standard compass *10"* 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

YED A. P. MØLLER

Yed A. P. Møller

Builder's Signature.

Date *29-12-26*

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.)

The Electric Light & Power installation as above described has been carried out in accordance with the Rules requirements, the approved plans and letter E dated 26/8 26. The material used is of generally good description throughout and the workmanship of high quality.

On completion the whole installation was tested under full power working conditions and found to work satisfactorily.

Recommend the vessel to have notation "Electric Light" in the Reg. Book.

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

Total Capacity of Generators *300* Kilowatts.

12-1/2 18.20
The amount of Fee ... *£12.709.80*
Travelling Expenses (if any) £ *—*

When applied for, <i>21/12.19.26</i>
When received, <i>29.12.19.26</i>

A. S. Dubach O. K. Hoff
Surveyors to Lloyd's Register of Shipping.

Committee's Minute *FRI. 14 JAN 1927*

Assigned *Elec. Light*



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Foundation