

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... JAN 7 1939

Date of writing Report 28/12 1938 When handed in at Local Office 10 Port of Copenhagen
 No. in Survey held at Odense Date, First Survey 7/11 38 Last Survey 21/12 1938
 Reg. Book. 88925 on the Single Sc. Motor vessel "LUCELLUM" Tons {Gross 9424.39
 Net 5741.81
 Built at Odense By whom built Odense Haalski bryggeri Yard No. 77 When built 1938
 Owners H. E. Ross & Co. Ltd. Port belonging to Liverpool
 Electric Light Installation fitted by W. Dank Elektriske Company Contract No. _____ When fitted 1938
 Is the Vessel fitted for carrying Petroleum in bulk yes.

System of Distribution 2 conductors insulated system.

Pressure of supply for Lighting 110 volts, Heating _____ volts, Power 110 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 No, 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 the port side of the engine 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 in the engine room in the vicinity of 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 _____ and _____

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 micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework _____

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

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 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 and for each outgoing circuit: a 2 pole circuit breaker and a fuse on each pole.

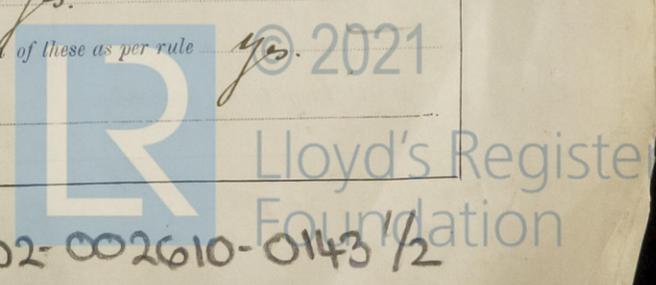
Instruments on main switchboard 2 ammeters 1 voltmeters _____ synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system _____

1 set of earth lamps.

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 *single* are the cables insulated and protected as per Tables IV and V of the Rules *yes*.

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *ca. 3 Vols.*

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 cables ins. supported by galvanized clips, on deck, along the gangway, protected by steel plate casings*

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*

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 *at 7 knots. 110 Volt. generator is fitted in the poop space driven by a 14hp 45CSA heavy oil engine, cable leading from local switchboard is switched-over on switchboard for light.*

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 *the lamps in the pump rooms are of approved gaslight type*, how are the cables led *led through steel tubes, carried gaslight into lamp fittings*.

where are the controlling switches situated *in the accommodation spaces amidships.*

Searchlight Lamps, No. of *not fitted*, whether fixed or portable *yes*, are their fittings as per Rule *yes*.

Arc 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	2	16	110	146	600	Steam		
AUXILIARY								
EMERGENCY	1	7	110	63.5	1200	14hp 45CSA heavy oil engine	heavy oil >150°F.	
ROTARY TRANSFORMER								

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. Ins.	No.	Diameter.	In Circuit.	Rate.			
MAIN GENERATOR	1	75	19	2.52	146	148	19	RUBBER	LEAD COVERED
EQUALISER CONNECTIONS									
MAIN AUXILIARY GENERATOR	1	95	19	2.52	146	148	14	"	AND STEEL WIRE ARMOUR.
EMERGENCY GENERATOR	1	35	19	1.83	63.5	77	59	"	SD
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	16	7	1.70	16	49	29	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS FOR LIGHT	1	50	19	1.83	95	98	29	"	"
ACCOMMODATION									
MIDSHIPS	1	16	7	1.70	40	49	140	"	"
AFT	1	10	7	1.70	30	49	2	"	"
WIRELESS	1	10	7	1.70	14.5	49	160	"	"
SEARCHLIGHT									
MASTHEAD LIGHT									
SIDE LIGHTS									
COMPASS LIGHTS	1	2.5	7	0.67	5	15	160	"	"
POOP LIGHTS									
CARGO LIGHTS									
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. Ins.	No.	Diameter.	In Circuit.	Rate.			
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	1	1	35	19	1.83	50	77	42	RUBBER	LEAD COVERED
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										STEEL WIRE ARMOUR.
WINDLASS										ARMOUR.
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	10	7	1.35	25	38	31	"	"
WORKSHOP MOTOR										
VENTILATING FANS										
OIL PURIFIERS	3	1	10	7	1.35	24	38	24	"	"

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 Elektrik Selskab

S. J. M. Andersen

Electrical Engineers.

Date 29-12-1938.

COMPASSES.

Distance between electric generators or motors and standard compass ca. 24'

Distance between electric generators or motors and steering compass ca. 20'

The nearest cables to the compasses are as follows:—

A cable carrying 5 Ampères 15 feet from standard compass 11 feet from steering compass.

A cable carrying 0.5 Ampères 4 feet from standard compass 3 feet from steering compass.

A cable carrying 0.2 Ampères 8" feet from standard compass 8" feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power *ye.*

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted *ye.*

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.

ODENSE STAALSKIBSVÆRFT

VED A. P. MØLLER

[Signature]

Builder's Signature.

Date 29/12 1938.

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 herein described has been fitted under special survey and in accordance with the Society's Rules, the approved plans and the requirements contained in the Surveyor's letters E & S dated 12/10 - 19/12 1938.

The material used is of good description heavy metal and the workmanship of high class.

On completion the installation was tested under full power working conditions and as per Rules and found satisfactory.

W. J. M. J.
10/1/39

Im. 9. 90.—Transfer.
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators *39* Kilowatts.

The amount of Fee ... *14. 5. 4. 40* When applied for, *6. 1. 19. 39.*

Travelling Expenses (if any) £ : : *16. 1. 19. 39*

[Signature]
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 13 JAN 1939

Assigned

See F.I. machy rpt.



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