

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 23 DEC 1927

Date of writing Report 1/12 1927 When handed in at Local Office 27 Port of Copenhagen

No. in Survey held at Odense Date, First Survey 20/10 27 Last Survey 24/11 1927  
 Reg. Book. 42013 on the Steel Twin S. Motor vessel "NYHOLM" (Number of Visits 9)

Built at Odense By whom built Odense Staalskibsverft Yard No. 27 When built 1927  
 (VED A.P. HÖLLER)

Owners Christian Haaland Port belonging to Haugesund

Electric Light Installation fitted by Danske Elektricitetskompani, A/S Contract No. — When fitted 1927  
Odense

System of Distribution Two conductor insulated system ✓  
 Pressure of supply for Lighting 110 ✓ volts, Heating 220 ✓ 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 motor 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 on a platform in 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 yes ✓  
 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 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 ✓.

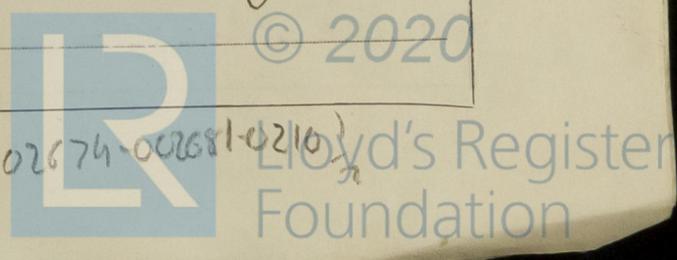
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches for each generator: one double pole linked switch with overload circuit breaker & reversed current trip equalizer switch as protection ✓  
3 A.C. For each outgoing circuit: one double pole linked switch and a fuse on each pole.

Instruments on main switchboard 6 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 set earth lamps (110 volts & 220 volts), one of the Voltmeter fitted with Ω 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 ✓.



**Cables:** Single, twin, concentric, or multicore single are the cables insulated and protected as per Tables IV & V of the Rules y/o.

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load abt. 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 y/o.

**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 ✓

**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 y/o.

**Support and Protection of Cables,** state how the cables are supported and protected armoured cables used, supported by clips.  
On deck the cables are cast in by 1/4" steel plate fitted under the ganway on top of trunk.  
 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 ✓. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII y/o.

**Refrigerated Chambers,** if lights are fitted, are the cables and fittings in accordance with the special requirements y/o.

**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 y/o.

**Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed y/o. state the material of which the bushes are made lead.

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas ✓  
are their connections made as per Rule ✓

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule y/o.

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven ✓

**Navigation Lamps,** are these separately wired y/o., controlled by separate switch and separate fuses y/o., are the fuses double pole y/o.  
 are the switches and fuses grouped in a position accessible only to the officers on watch y/o.  
 has each navigation lamp an automatic indicator as per Rule y/o.

**Secondary Batteries,** are they constructed and fitted as per Rule ✓

**Fittings,** are all fittings on weather decks, in stokeholds and engine rooms and where exposed to drip or condensed moisture, watertight y/o.  
 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 ✓  
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 room are contained in double gastight glass globes.  
through gastight galvanized iron tubes.  
where are the controlling switches situated in the pantry.

**Searchlight Lamps,** No. of one., whether fixed or portable portable., are their fittings as per Rule y/o.

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

**Motors,** are their working parts readily accessible y/o., are the coils self-contained and readily removable for replacement y/o.  
 are the brushes, brush holders, terminals and lubricating arrangements as per Rule y/o., are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material y/o.  
 are they protected from mechanical injury and damage from water, steam or oil y/o. are their axes of rotation fore and aft y/o. except during gear  
 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 ✓, 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 y/o.

**Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule ✓

**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 y/o.  
 If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office y/o. only battery lamps supplied.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY		WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.	Fuel Used.	Flash Point of Fuel.		
MAIN	2	66	220	300	400	2-2cyl Diesel engines	oil Diesel oil	above 150° F.	
AUXILIARY	1	33	220	150	400	1-100 " " "	" " "	" " "	
EMERGENCY									
ROTARY TRANSFORMER	2	12	110	109	1500	2-18.5 HP electromotors			

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	220	37	2.64	300	58	in-	the
	EQUALISER CONNECTIONS	1	20-95				29-21		
	AUXILIARY GENERATOR	2	95	19	2.52	150	42	dia-	cables
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...	2	50	19	1.83	109	44	rib-	as
	AUXILIARY SWITCHBOARDS								lead covered
	ENGINE ROOM	2	2.5	7	0.64	12	28.5	br.	and
	BOILER ROOM								
	ACCOMMODATION ... AFT	2	6	7	1.05	80	34		
	DECK HOUSE	2	6	7	1.05	15	146		armoured
	NAVIGATION LIGHT	2	2.5	7	0.67	2.5	158		steel wire.
	WIRELESS	2	12	7	1.48	26	158		
	SEARCHLIGHT	2	16	7	1.70	40	182		
	MASTHEAD LIGHT...	2	1.5	1	1.38	0.4	128		
	SIDE LIGHTS	2	1.5	1	1.38	0.4	36		
	COMPASS LIGHTS	2	1.5	1	1.38	0.2	12		
	POOP LIGHTS	2	1.5	1	1.38	0.4	160		
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS { AFT	2	50	19	1.83	95	34		
	{ DECK HOUSE	2	33	19	1.53	58	146		

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	10	7	1.35	30	49	indis	the cables
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP AND	1	10	7	1.35	30	46	ribbr.	as
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								lead covered
	LUBRICATING OIL PUMPS	2	40	19	2.16	100	102		
	COLD FRESH WATER PUMPS								
	CO <sub>2</sub> COMPRESSOR	1	6	7	1.05	25	60	indis	and
	COOLING FRESH WATER PUMPS	1	2.5	7	0.64	7	65		
	ENGINE TURNING GEAR	2	2.5	7	0.64	10	28	ribbr.	steel wire
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								armoured -
	OIL FUEL TRANSFER PUMP	1	10	7	1.35	30	44		
	WINDLASS	1							
	WINCHES, FORWARD	1							
	WINCHES, AFT	1	25	7	1.23	50	36	indis	on deck
	STEERING GEAR	1	35	19	1.53	75	79	ribbr.	enclosed
	(a) MOTOR GENERATOR...								in
	(b) MAIN MOTOR	1	35	19	1.53	70	90		
	WORKSHOP MOTOR	1	2.5	7	0.64	10	42	indis	strong
	VENTILATING FANS	1	2.5	7	0.64	35	32		
	PUMP IN FORWARD PUMP ROOM	1	2.5	7	1.23	40	42	rib.	steel plate
	MOTOR GENERATOR	2	25	7	1.23	60	74		
	FUEL OIL PURIFIER	1	2.5	7	0.67	10	72	br.	casing.
	LUBR. OIL PURIFIER	1	2.5	7	0.67	10	46		

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.

*Lyngbyvej.* Electrical Engineers. Date 9-12-27.

**COMPASSES.**

Distance between electric generators or motors and standard compass 192'

Distance between electric generators or motors and steering compass 190'

The nearest cables to the compasses are as follows:—

A cable carrying 2.5 Amperes 15 feet from standard compass 8 feet from steering compass.

A cable carrying 11 Amperes 22 feet from standard compass 16 feet from steering compass.

A cable carrying 0.2 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

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 12-12-27.

*John Marsh Møller*

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 Lights and Power Installation as above described has been fitted in accordance with the Society's Rules, the approved plan and the requirements contained in the Secretary's letters 3 dated 1/9 26 and 27/9 27.

The material used in the installation is of good description throughout and the workmanship of high quality.

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

Recommend the vessel to have notation of "ELEC. LIGHT" in the Reg. Book.

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

*J.W.D.*  
28/12/27.

Total Capacity of Generators 165 Kilowatts.

The amount of Fee ... 1/2 18.20 } When applied for, 17/12.19.27.  
1/2 632.45 }  
 Travelling Expenses (if any) £ : : } When received, 17.1.19.28

*Chubb*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 30 DEC 1927

Assigned Elec Light

Im. 1.20.—Transfer. (The Surveys are requested not to write on or below the space for Committee's Minutes.)



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