

REPORT ON ELECTRIC FITTINGS.

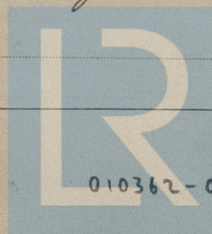
(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 7183.

12 FEB 1926

Date of writing Report *8th February 1926* When handed in at Local OfficePort of *Copenhagen*No. in Survey held at *Copenhagen*
Reg. Book *Splm.*Date, First Survey *12th December 25* Last Survey *3rd February 1926*(Number of Visits *16*)40246 on the *Twin Screw Motor Vessel "NORDPOL"*Built at *Copenhagen*By whom built *Akt. Burmister & Hain's Maskin og Skibsloggeri.*Yard No. *340*Tons { Gross *5885.98*Net *3657.68*When built *1925-26*Owners *Akt. Dampskibsselskabet Norden (P. Brown & Co.)* Port belonging to *Copenhagen.*Electric Light Installation fitted by *Akt. Burmister & Hain's Maskin og Skibsloggeri.* Contract No. *340* When fitted *1926*System of Distribution *Two-wire with direct current, insulated system!*Pressure of supply for Lighting *110* volts, Heating *✓*volts, Power *220* volts.Direct or Alternating Current, Lighting *Direct current* *✓*Power *Direct current* *✓*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 overload *yes* *✓*, are they compound wound *yes* *✓*are they over compounded 5 per cent. *No* , 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 and clearly marked *yes*, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited *yes*Are the lubricating arrangements of the generators as per Rule *yes*Position of Generators *On port side of the machinery space.*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 *Not situated near unprotected woodwork or other combustible material.*, are the generators protected from mechanical injury and damage from water, steam or oil *yes*are their axis 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 *at the forward end of machinery space.*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 *Not situated near unprotected woodwork or other combustible material.*are they constructed wholly of durable, incombustible 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 connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework *yes*, and is the frame effectively earthed *yes*

Are the following fittings as per Rule, viz.:— spacing or shielding of live parts

yes , accessibility of all parts *yes* , absence of fuses on back of board *yes* , proportion of omnibusbars *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 three pole circuit breaker with overload and reversed current trip, and a single-pole equalizer switch as required by the Rules. - For each outgoing circuit a double pole linked switch and a double pole fuse as per Rule. -*Instruments on main switchboard *5* ammeters *4* 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 *One voltmeter is**provided with Ohm-scale and the switch board is provided with two sets of earth testing lamps. -*Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules *yes*Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule *yes*

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Insulation of Cables, state type of cables, single or twin Both types are the cables insulated and protected as per Tables III or IV of the Rules III

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *about 4 volt*

Below 10 mm² soldering sockets, - above 10 mm² cable sockets with screws:-

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 No paper insulated cables 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. *Lead covered, wire or steel tape armoured cables used in holds fixed in built iron screens fastened under the upper deck beams or carried through iron tubes. - Where no special protection is required the cables are supported by screwed clips as per Rule. -*

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 VI ☒ No

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *MSS*

Joints in Cables, state if any, and how made, insulated, and protected *Watertight junction boxes with screwed covers and connections used.*

Watertight Glands and Deck Tubes, *are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands*

Bushes in Beams and Non-watertight Positions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently
bushed *No* state the material of which the bushes are made *Lead*.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas. *No earthing connections*

...are their connections made as per Rule ✓

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule.....✓

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, are separate screens provided for the use of oil and electric side lights Yes

are separate oil lanterns provided for the mast head lights and side lights.....*Yes*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight.....

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 no

... how are the cables led

where are the controlling switches situated.....✓

Searchlight Lamps, No. of NONE, whether fixed or portable ☒, are their fittings as per Rule ☒

Are Lamps, other than searchlight lamps, No. of none, are their live parts insulated from the frame or case ☒, are their fittings as per Rule ☒

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

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
not situated near unprotected woodwork or other combustible material. 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 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. *Flash point of oil fuel above 150°F.*

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.	Rovs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3 <i>off</i>	50 <i>rated</i>	220	227	325	<i>Auxiliary Diesel oil engines.</i>	<i>Crude oil</i>	<i>about 150° F.</i>
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER	1	15	220/110	136	1600	<i>Electric motor</i>		

LIGHTING ~~AND HEATING~~ CONDUCTORS.

[illegible]

MOTOR CONDUCTORS

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. mm ⁱⁿ	COMPOSITION OF STRAND. No.	Diameter. ⁱⁿ / _{mm}	Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	BALLAST PUMP	1	25 ✓	7	2.13	56	abt 45 meters	Vulcanized rubber	Lead covered and wire armoured.
	MAIN BILGE LINE PUMPS ...	1	16 ✓	7	1.70	36	" 48 "	" "	" " "
	GENERAL SERVICE PUMP ...								
	EMERGENCY BILGE PUMP ...								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS } LUBRICATING OIL PUMPS. CIRC. FRESH WATER PUMPS	2	each 50 ✓	19	1.83	90	" 18 "	" " "	" " "
AUXILIARY	AIR COMPRESSOR	1	2x120 ✓	37	2.03	abt 330	" 50 "	" "	" " "
	FRESH WATER PUMP	1	2.5 ✓	7	0.67	6	" 10 "	" "	" " "
	ENGINE TURNING GEAR ...	2	each 6 ✓	7	1.05	25	" 12 "	" "	" " "
	ENGINE REVERSING GEAR ...								
	LUBRICATING OIL PUMPS ...	Please see above.							
	OIL FUEL TRANSFER PUMP	1	25 ✓	7	2.13	56	" 28 "	" "	" " "
	WINCHES 4 WINCHES.	5	120 ✓	37	2.03	abt 175	" 170 "		
	WINCHES, FORWARD ...	2	50 ✓	19	1.83	" 90	" 35 "	" "	" " "
	WINCHES, AFT	5	95 ✓			" 144	" 110 "	" "	" " "
	STEERING GEAR	1	16 ✓	7	1.70	" 48	" 145 "	" "	" " "
	WORKSHOP MOTOR	1	2.5 ✓	7	0.67	" 8.5	" 12 "	" "	" " "
	do do VENTILATING FANS →	1	1.5 ✓	1	1.38	" 4	" 12 "	" "	" " "
	CO ₂ COMPRESSOR	1	10 ✓	7	1.35	" 28	" 15 "	" "	" " "
	BRINE PUMP	1	2.5 ✓	7	1.67	" 8	" 12 "	" "	" " "
	OIL SEPARATORS	2	2.5 ✓	7	0.67	" 8	" 12x35 "	" "	" " "
	GALLEY	1	1.5 ✓	1	1.38	" 2	" 6 "	" "	" " "

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.

AKTIESELSKABET
BURMEISTER & WAINSKIN- OG SKIBBYGGERI

Electrical Engineers. Date

COMPASSES.

Distance between electric generators or motors and standard compass *About 56 feet*
Distance between electric generators or motors and steering compass *45 "*

The nearest cables to the compasses are as follows:—

A cable carrying *abt. 8* Ampères *abt. 10* feet from standard compass *abt 8* feet from steering compass.

A cable carrying *abt 0.2* Ampères *to the lamp in feet from* standard compass *and in* 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 *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 *all* course in the case of the standard compass, and *0* degrees on *all* course in the case of the steering compass.

AKTIESELSKABET
BURMEISTER & WAINSKIN- OG SKIBBYGGERI

Builder's Signature. Date

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 whole electric lighting and power installation as above described has been fitted in accordance with the Rules, the approved plan and the requirements contained in the London letter E. dated the 18th September 1925.

The material used and the workmanship are of good description in every respect.

The whole electric installation has been tested under full power working condition and found satisfactory.

Recommend the vessel to have notation in the Register Book of "Electric light."

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

Total Capacity of Generators *150* Kilowatts

The amount of Fee *is noted on the Machinery Report.*

When applied for,

19

When received,

19

Travelling Expenses (if any) £ *✓* : *✓* :

A. F. Fitch
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 19 FEB 1926

Assigned

Elec Light



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