

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

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No. in Survey held at Copenhagen Date, First Survey 23<sup>rd</sup> August Last Survey 16<sup>th</sup> Novbr. 1923.  
 Reg. Book. 40225 on the Steel Twin Screw Motor Vessel "Nordbo" (Number of Visits 27)

Built at Copenhagen By whom built Akt. Burmeister & Wain's Maskin-og Skibsbyggeri Yard No. 327 Tons { Gross 4765.06  
 Net 2729.88

Owners Akt. Dampskibsselskabet Norden (P. Brown jun. & Co) Port belonging to Copenhagen When built 1923.

Electric Light Installation fitted by Akt. Burmeister & Wain's Maskin-og Skibsbyggeri Contract No. 327 When fitted 1923.

System of Distribution Two-wire direct current insulated system.

Pressure of supply for Lighting 110 volts, Heating ✓ volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct current Power ✓

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, 0 per cent, 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 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 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 In the engine 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 Not situated near unprotected woodwork or other combustible material.

are they constructed wholly of durable, incombustible non-absorbent materials A marble plate used, 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 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:— A double-pole breaker with overload and reversed current trips, coupled with a single-pole equalizer switch as required by the Rules. — For each outgoing circuit:— a double-pole linked switch and a double-pole fuse. ✓

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 an Ohm scale and the switchboard is provided with two earth 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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**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.007 square inch and above provided with soldering sockets  
Under 10 <sup>in</sup>/<sub>in</sub><sup>2</sup> soldering sockets - above 10 <sup>in</sup>/<sub>in</sub><sup>2</sup> 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. Wire armoured cables used, protected by sheet iron or fitted in tubes.

If cables are run in wood casings, are the casings and caps secured by screws No, 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 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. *Watertight junction boxes with sound 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

yes.

Bushes in Beams and Non-watertight Positions, 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 *No earthing connections.*

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, controlled by separate switch and separate fuses yes.

has each navigation lamp 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.....

**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 engine rooms yes

are any fillings 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 vapors collect? 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.

\_\_\_\_\_ , how ar

where are the controlling switches situated ✓

Searchlight Lamps No. of *100*

Searchlight Lamps, No. of None, whether fixed or portable. ✓  
Arc Lamps, other than searchlight lamps, No. of None, 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 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

are they protected from mechanical injury and yes

are they protected from mechanical injury and damage from water, steam or oil *yes* are their axis of rotation fore and aft *yes*

\_\_\_\_\_ situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame  
✓ \_\_\_\_\_, if not of this type state distance of \_\_\_\_\_

Control Gear and Resistances are the governor, full speed, and

**Lightning Conductors**, where lightning conductors are used, shall be constructed as per Rule yes

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

Have the special requirements of the Rules been complied with regarding switches,

tion and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings. Flash point of oil above 150

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	50	220	227	325	auxiliary Diesel engines.	✓	✓
AUXILIARY ... ..								
EMERGENCY ... ..								
ROTARY TRANSFORMER	1	15	110	136	1650			

[illegible]

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins. $\frac{1}{4}$ in.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes	Approximate Length. (Load and Return). Miles Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP ... ..	1	25 $\frac{1}{16}$ in.	7	2.13	abt. 56	44 Miles	Balanized rubber	Wire armoured.
	MAIN BILGE LINE PUMPS ...								
	GENERAL SERVICE PUMP ...								
	EMERGENCY BILGE PUMP ...								
	SANITARY PUMP * Bilge Pump	1	10	7	1.35	abt. 27.5	61 --	--	--
	Circ. Sea WATER PUMPS	2	50	19	1.83	" 90.0	20 --	--	--
	and Lubricating Oil Pumps								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR ... ..	1	2 x 120	37	2.03	" 330	52 --	--	--
	FRESH WATER PUMP ... ..	1	2.5	3	1.04	" 4	60 --	--	--
	ENGINE TURNING GEAR ...	2	10	7	1.35	" 35	60 --	--	--
	ENGINE REVERSING GEAR ...								
	LUBRICATING OIL PUMPS ...	See above.							
	OIL FUEL TRANSFER PUMP ...	1	4	7	0.85	" 16	30 --	--	--
	WINDLASS * 4 Winches.	5	150	39	2.27	" 190	168 --	--	--
	WINCHES, FORWARD ... ..	2	50	19	1.83	" 90	28 --	--	--
	WINCHES, AFT ... ..	5	75	19	2.52	" 144	110 --	--	--
	STEERING GEAR ... ..	1	25	7	2.13	" 45	145 --	--	--
	WORKSHOP MOTOR ... ..	1	2.5	3	1.04	" 8.5	12 --	--	--
	" " " " " "	1	1.5	1	1.38	" 4	12 --	--	--
	VENTILATING FANS ... ..								



*The foregoing is a correct description.*

Date \_\_\_\_\_

*Builder's Signature.* *Date*

*Assigned.*