

Rpt. 13.

# REPORT ON ELECTRIC FITTINGS.

No. 8587.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 22<sup>nd</sup> June 1931 When handed in at Local Office 24<sup>th</sup> June 1931 Port of Copenhagen Received at London Office 27 JUN 1931

No. in Survey held at Nakskov

Date, First Survey 27/3 1931

Last Survey 19<sup>th</sup> June 1931

Reg. Book.

91530 on the Ste Trin L. Motor vessel "Münaw"

(Number of Visits 12)

Tons Gross 3113.00

Net 1739.32

Built at Nakskov

By whom built 9/1 Nakskov Skibsværft

Hull No. 43

When built 1931

Owners 9/1 Det Østasiatisk Kompagni

Port belonging to Copenhagen

Electric Light Installation fitted by 9/1 Nakskov Skibsværft

Contract No.

When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution 2 conductors insulated system

Pressure of supply for Lighting 220 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, 3 main generators

, 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 plant in the forward end of 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 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

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 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 micanite 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

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 generators: a 266 pole circuit breaker with overload &amp; reverse current trip and equalizer switch as per Sect. 3, par. 3.9 (f)

Outgoing circuits: a 266 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

1 set of earth lamps. 1 voltmeter fitted with a 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

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W1058-0158 2

0158 2/2



27 JUN 1931

## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	66.	220	300	400	3 2-cyl. Diesel oil engine.	crude oil	above 150°F.
AUXILIARY								
EMERGENCY	1	10	220	45.5	1000	1 17 H. crude oil engine (2-cyl. glow bulb)	- " -	- " -
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return).	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Mm.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	2	2 x 95	19	2.52	300	296	15	india rubber	lead covered
EQUALISER CONNECTIONS		95	19	2.52			7.5	- " -	sheath wire armoured.
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	16	7	1.70	45.5	49	5	- " -	sheath wire armoured.
ROTARY TRANSFORMER									
ENGINE ROOM	1	6	7	1.05	16.5	29	9	- " -	sheath wire armoured.
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
FOR LIGHT	1	35	19	1.53	60	77	74	- " -	sheath wire armoured.
ACCOMMODATION	1	6	7	1.05	6.8	29	124	- " -	
OFFICERS	1	6	7	1.05	11.3	27	60	- " -	
PASSENGERS	1	10	7	1.35	22.5	38	52	- " -	
FORWARD	1	6	7	1.05	19	29	96	- " -	
WIRELESS	1	6	7	1.05	8	29	47	- " -	
SEARCHLIGHT									
MASTHEAD LIGHT									
SIDE LIGHTS									
COMPASS LIGHTS	1	2.5	7	0.67	1.5	15.5	56	- " -	
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return).	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Effective Area per Pole Sq. Mm.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	25	7	2.13	50	63	47	india rubber	lead covered
MAIN BILGE LINE PUMPS									rubber.	and sheath wire armoured.
GENERAL SERVICE PUMP										
ENGINE BILGE PUMP	1	1	10	7	1.35	30	38	51	- " -	sheath wire armoured.
SANITARY PUMP	1	1	4	7	0.85	17	22	43	- " -	sheath wire armoured.
CIRC. SEA WATER PUMPS	1	1	4	7	0.85	17	22	43	- " -	sheath wire armoured.
CIRC. FRESH WATER PUMPS	1	1	4	7	0.85	17	22	43	- " -	sheath wire armoured.
COMPRESSOR	3	1	10	7	1.35	20	38	46	- " -	sheath wire armoured.
FRESH WATER PUMP	1	1	2.5	7	0.67	7	15.5	53	- " -	sheath wire armoured.
ENGINE TURNING GEAR	2	1	2.5	7	0.67	7	15.5	53	- " -	sheath wire armoured.
ENGINE REVERSING GEAR	2	1	70	19	2.10	100	124	60	- " -	sheath wire armoured.
LUBRICATING OIL PUMPS	1	1	4	7	0.85	17	22	40	- " -	sheath wire armoured.
OIL FUEL TRANSFER PUMP	1	1	4	7	0.85	17	22	40	- " -	sheath wire armoured.
WINDLASS	1	1	4	7	0.85	17	22	40	- " -	sheath wire armoured.
WINCHES, FORWARD	2	1	150	37	2.27	275	280	96	- " -	sheath wire armoured.
WINCHES, AFT	4	1	120	37	2.03	215	235	102	- " -	sheath wire armoured.
CRANES	2	1	120	37	2.03	215	235	102	- " -	sheath wire armoured.
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	10	7	1.35	20	38	132	- " -	sheath wire armoured.
WORKSHOP MOTORS	3	1	4	7	0.85	14	22	42	- " -	sheath wire armoured.
VENTILATING FANS										
OIL PURIFIERS	2	1	2.5	7	0.67	10	15.5	36	- " -	sheath wire armoured.
SUPERCHARGING FANS	2	1	50	19	1.83	85	98	71	- " -	sheath wire armoured.
WINCHES AMIDSHIP	2	1	150	37	2.27	275	280	96	- " -	sheath wire armoured.
CRANES	2	1	150	37	2.27	275	280	96	- " -	sheath wire armoured.

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 *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 *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 used, supported by clips in seven deck space secured by steel plates, when necessary laid in steel 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 *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 *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*.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 *the unit is placed in a house on the boat deck, aft of the engine casing; a switch over is fitted on the switch board for lights in the same compartment. Generator driven by a 17 H. 2-cyl. crude oil engine with glow bulb.*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*.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*.

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W1058-0158 2/2



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  
NAKSKOV SKIBSVÆRFT

Electrical Engineers.

Date

#### COMPASSES.

Distance between electric generators or motors and standard compass  $12\frac{1}{2}$  m.

Distance between electric generators or motors and steering compass 9 m.

The nearest cables to the compasses are as follows:—

A cable carrying  $\frac{1}{4}$  Ampères 7" feet from standard compass 7" feet from steering compass.

A cable carrying  $\frac{1}{4}$  Ampères 11 feet from standard compass 4 feet from steering compass.

A cable carrying  $\frac{1}{2}$  Ampères 16 feet from standard compass 12 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.

AKTIESELSKABET  
NAKSKOV SKIBSVÆRFT

Builder's Signature.

Date

Is this installation a duplicate of a previous case ☒ If so, state name of vessel ☒

General Remarks (State quality of workmanship, opinions as to class, &c.)

The electric light and power installation as above described has been fitted in accordance with the Society's Rules, the approved plan (as corrected) and the requirements contained in the Secretary's letter of dated 25/2 1931.

The material used for the installation has been examined and found of good description throughout, and the workmanship is of good quality.

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

Recommend the vessel to have notation of ELECTRIC LIGHT in the Register Book.

Total Capacity of Generators 208 Kilowatts.

The amount of Fee ... 14.667.94

When applied for,  
25.6.31

Travelling Expenses (if any) £

When received,  
13.7.31

Malcolm Chisholm  
Surveyor to Lloyd's Register of Shipping.

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

Committee's Minute FRI. 3 JUL 1931

Assigned

Elec. Light

cm  
29/6/31

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