

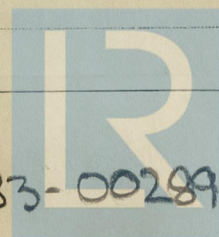
REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 5 JAN 1931

Date of writing Report 19 When handed in at Local Office 19 Port of *Copenhagen*
 No. in Survey held at *Nakskov* Date, First Survey *7/10* Last Survey *21/12* 19 *30*
 Reg. Book. *90961* on the *Stav Friis S. 4 Int. S. "India"* (Number of Visits *17*)
 Tons { Gross *9549.15*
 Net *6030.63*
 Built at *Nakskov* By whom built *Nakskov Skibsværft* Yard No. *39* When built *1930*
 Owners *N. S. Asiatiske Kompagni* Port belonging to *Copenhagen*
 Electric Light Installation fitted by *Nakskov Skibsværft* Contract No. *✓* When fitted *1930*
 Is the Vessel fitted for carrying Petroleum in bulk *No*

System of Distribution *2 conductor insulated system*
 Pressure of supply for Lighting *110* 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*, 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 main engine room, port side, floor level*
 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 forward end of 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 *✓* 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 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*, 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 266 pole circuit breaker with overload, reversed current trip, equalizer trip as per Sect. 3 par. 3 A, f, for outgoing circuits: a 266 pole linked switch and a fuse on each pole*
 Instruments on main switchboard *7* ammeters *5* 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 sets of earth lamps, 2 Voltmeters fitted with Ohm 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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Cables: Single, twin, concentric, or multicore single are the cables insulated and protected as per Tables IV or 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 galvanised clips, in tween decks laid on steel plates under beams & protected by steel plate casing. 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 No lights fitted.

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, 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 yes.

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 1, whether fixed or portable portable, are their fittings as per Rule yes.

Are 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 ...	3	90	220	408	360	3 3-cyl. auxil. Diesel engines.	crude oil	above 150° F.	
AUXILIARY ...									
EMERGENCY ...									
ROTARY TRANSFORMER	2	20	110	182	1500	2 30 HP electromotors.			

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		Approximate Length, (Lead and Return.) Pcs. av.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Mm.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	2	2 x 150	37	2.27	408	410	40-52-60	india	lead covered
EQUALISER CONNECTIONS ...	1	150	37	2.27	-	205	20-26-30	rubber	and
AUXILIARY GENERATOR ...									steel wire armour
EMERGENCY GENERATOR ...									ed.
ROTARY TRANSFORMER MOTOR	1	70	19	2.10	100	124	"	"	through keels
GENERATOR...	1	150	37	2.27	182	205	7	"	and where found
ENGINE ROOM...	1	6	7	1.05	25	29	12	"	necessary pro-
BOILER ROOM...									tection by steel
AUXILIARY SWITCHBOARDS ...									casing.
WINCH HOUSE AFT	1	6	7	1.05	25	29	178	"	
CHART ROOM	1	2.5	7	0.67	3	18.5	114	"	
WINCH HOUSE FORWARD.	1	25	7	2.13	60	63	108	"	
ACCOMMODATION ...									
CREW SPACE AFT	1	16	7	1.70	50	49	132	"	"
OFFICERS (PANTRY)	1	6	7	1.05	25	29	78	"	"
SALOON (PANTRY)	1	6	7	1.05	25	29	88	"	"
WIRELESS ...	1	10	7	1.35	30	38	44	"	"
SEARCHLIGHT ...	1	25	7	2.13	50	63	72	"	"
MASTHEAD LIGHT ...	1	1.5	1	1.38	0.5	10	60-110	"	"
SIDE LIGHTS ...	1	1.5	1	1.38	0.5	10	30	"	"
COMPASS LIGHTS ...	1	1.5	1	1.38	0.35	10	8	"	"
POOP LIGHTS ...	1	1.5	1	1.38	0.35	10	240	"	"
CARGO LIGHTS ...									
ARC LAMPS ...									
HEATERS FOR OIL BURNER AND FAN FOR DONKEY BOILER	1	35	19	1.53	38	77	106	"	"

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT, AMPERES.		Approximate Length, (Lead and Return.) Pcs. av.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Mm.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...	1	1	16	7	1.70	50	49	70	india	lead covered
MAIN BILGE LINE PUMP	1	1	10	7	1.35	30	38	56	rubber	and
GENERAL SERVICE PUMP	1	1	120	37	2.03	143	180	26	"	steel wire armour
DEBANK PUMP	1	1	2.5	7	0.67	7	18.5	73	"	ed.
SANITARY PUMP HOT & COLD WATER	1	1	70	19	2.16	118	124	34	"	under floor
CIRC. SEA WATER PUMPS	2	1	4	7	0.85	17	22	22	"	plates and where
CIRC. FRESH WATER PUMPS	2	1	95	19	2.52	110	148	46	"	found necessary
COLEMAN COMPRESSOR	1	1	2.5	7	0.67	7	18.5	70	"	my laid in galv.
FRESH WATER PUMP	1	1	10	7	1.35	27	38	80	"	steel pipes.
ENGINE TURNING GEAR	2	1	2.5	7	0.67	4	18.5	48	"	
FRIGIDAIRE 0.5 HP	2	1	70	19	2.16	118	124	16	"	
ENGINE REVERSING GEAR	2	1	16	7	1.70	50	49	64	"	
FAN IN GALLEY 0.5 HP	2	1	120	37	2.03	165	235	108	"	
LUBRICATING OIL PUMPS	2	1	70	19	2.16	118	124	16	"	
OIL FUEL TRANSFER PUMP	1	1	16	7	1.70	50	49	64	"	
WINDLASS	1	1	120	37	2.03	165	195	52	"	
WINCHES, FORWARD	2	1	120	37	2.03	165	235	108	"	
WARPING WINCH	1	1	70	19	2.16	110	130	16	"	
WINCHES, AFT	4	1	185	37	2.52	335	335	178	"	
CARGO AIR FANS	2	1	2.5	7	0.67	7	18.5	72	"	
STEERING GEAR—										
(a) MOTOR GENERATOR...	1	1	50	19	1.83	100	98	134	"	
(b) MAIN MOTOR	3	1	6	7	1.05	18	29	50	"	
WORKSHOP MOTORS	3	1	6	7	1.05	18	29	50	"	
VENTILATING FANS	2	1	25	7	2.13	50	63	28	"	
BRINE PUMPS	2	1	25	7	2.13	50	63	28	"	
CONDENSING WATER P.	1	1	6	7	1.05	23	29	46	"	
OIL PURIFIERS	2	1	2 x 120	37	2.03	450	470	108	"	
WINCHES	2	1	185	37	2.52	335	335	178	"	
- - -	4	1	185	37	2.52	335	335	178	"	
- - -	4	1	185	37	2.52	335	335	178	"	

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.

J. Christensen

Electrical Engineers.

Date 30-12-30

COMPASSES.

Distance between electric generators or motors and standard compass 10 m.

Distance between electric generators or motors and steering compass 8 m.

The nearest cables to the compasses are as follows:—

A cable carrying 0.35 Ampères 7" feet from standard compass feet from steering compass.

A cable carrying 0.35 Ampères feet from standard compass 7" feet from steering compass.

A cable carrying 3 Ampères 9 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

J. Christensen

Builder's Signature.

Date 30-12-30.

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 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 letter 6 dated 7/11/30.

The materials used for the installation are of good description throughout and the workmanship of high quality.

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

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

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

Elec. Light

BA. 7/1/31.

Total Capacity of Generators 270 Kilowatts.

The amount of Fee ... £ 676.15

Travelling Expenses (if any) £

When applied for,

21/19/31

When received,

14/21/31

A. F. Jones, Clerk

Surgeon to Lloyd's Register of Shipping.

Committee's Minute

TUE. 27 JAN 1931

Assigned

Elec. Lt



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