

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

10 JAN 1929

Date of writing Report 31/12 1928 When handed in at Local Office 10 Port of Copenhagen

No. in Survey held at Naksten Date, First Survey 9/10 Last Survey 23/12 1928
Reg. Book. (Number of Visits 10)

92048 on the Steel S. Motor vessel "SIR KARL KNUDSEN" Tons { Gross 7747.17
Net 4581.48

Built at Naksten By whom built 9/ Naksten Skibsvaerft Yard No. 33 When built 1928

Owners A. F. Thoresen & Co. 9/10 Port belonging to Oslo

Electric Light Installation fitted by 9/ Naksten Skibsvaerft Contract No. ✓ When fitted 1928

System of Distribution 2 wire, 2 conductors, 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

Position of Generators placed in the motor room, one in each side
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 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 ✓ and ✓

are they constructed wholly of durable, non-ignitable non-absorbent materials of marble, 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: 1 266 pole circuit breaker with overload & reverse current trip & equalizer switch as per Section 3 par. 3A (f); for each outgoing circuit: 1 266 pole linked switch and a fuse on each pole

Instruments on main switchboard 5 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 of earth lamps, 2 voltmeters provided 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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Cables: Single, twin, concentric, or multicore *single* are the cables insulated and protected as per Tables IV of the Rules *yes*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *2.5 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 *amount cables used laid on steel plates and secured by clips, on deck alongside gangway & shielded by steel casing, otherwise led thru iron 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 *are their connections made as per Rule*

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 *lamps in pump room contained in gastight glass globes protected by iron grids*, how are the cables led *through galvanizet iron tubes carried gastight into lamp fittings*
where are the controlling switches situated *on a withboard pland in a gastight steel case built into the pump room casing and only accessible from deck through a watertight linged door*

Searchlight Lamps, No. of *1*, whether fixed or portable *yes*, are their fittings as per Rule *yes*

Arc Lamps, other than searchlight lamps, No. of *1*, 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 *only battery fed portable lamps used*

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	2	66	220	300	400	2 3-cyl. Diesel engines.	Diesel oil	above 150° F.
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER	1	9	110	73	1700	14 HP. Electromotor.		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor, Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length, (Load and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	310	61	2.54	300	24	india rubber	lead covered and
	EQUALISER CONNECTIONS	1	185	37	2.52		12		steel wire armoured.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER	2	16	7	1.70	73	8		
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	6	7	1.05	10	9		
	BOILER ROOM								
	ACCOMODATION	2	6	7	1.05	24	55		
	MIDSHIPS	2	6	7	1.05	22	170		
	PUMP ROOM	2	6	7	1.05	20	120		
	CHART ROOM	2	4	7	0.85	10	180		
	WIRELESS	2	6	7	1.05	20	200		
	SEARCHLIGHT								
	MASTHEAD LIGHT	1	1.5	1	1.38	1	110-70		
	SIDE LIGHTS	1	1.5	1	1.38	1	30		
	COMPASS LIGHTS	1	1.5	1	1.38	0.13	5		
	POOP LIGHTS	1	1.5	1	1.38	1	200		
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor, Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length, (Load and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP STEAM								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
9	SANITARY PUMP	1	10	7	1.35	30	40	india rubber	lead covered and
2	COOLING WATER PUMPS FOR CO. CONDENSER AND FRESH WATER PUMPS	10	7	1.35	30	71			steel wire armoured.
7.5	CO. COMPRESSOR	1							
2	FRESH WATER PUMP	1	2.5	7	0.67	7	60		
6	ENGINE TURNING GEAR	2	6	7	1.05	20	60		
	ENGINE REVERSING GEAR								
35	COOLING WATER AND LUBRICATING OIL PUMPS	2	95	19	2.52	120	15		
5	OIL FUEL TRANSFER PUMP	1	4	7	0.85	16	47		
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR								
34	(b) MAIN MOTOR	1	70	19	2.16	116	80		
3	WORKSHOP MOTOR	1	2.5	7	0.67	10	65		
	VENTILATING FANS								
2	OIL PURIFIERS	2	2.5	7	0.67	7	55		
14	ELECTR. LIGHT GEN.	1	16	7	1.70	50	8		

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

J. Miskansen Electrical Engineers. Date _____

COMPASSES.

Distance between electric generators or motors and standard compass 4.5 m.
 Distance between electric generators or motors and steering compass 7 m.
 The nearest cables to the compasses are as follows:—
 A cable carrying 0.13 Ampères 9 feet from standard compass 9 feet from steering compass.
 A cable carrying 1 Ampères 12 feet from standard compass 5 feet from steering compass.
 A cable carrying 5 Ampères 7 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. Miskansen 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 Electric Light and Power Installation as above described has been carried out under special survey and in accordance with the Society's Rules, the appended plan and the requirements contained in the Secretary's letter of dated 7/6 1928.

The material used for the installation is of good quality and the workmanship of generally good description throughout.
 On completion the whole installation was tested under full power working condition and found satisfactory.

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

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

Elec Light
 11/1/29

Im. 228.—Printer.
 (The Signatories are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators 132 Kilowatts.

The amount of Fee ... £ 602.42 { When applied for, 18.1.1929
 Travelling Expenses (if any) £ : : { When received, 5.2.1929

A. Schiffer
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 15 JAN 1929 FRI. 22 FEB 1929

Assigned *Elec. Light*