

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

16 JUN 1927

Date of writing Report 9th June 1927 When handed in at Local Office 10 Port of Copenhagen

No. in Survey held at Copenhagen Date, First Survey 28th January Last Survey 28th May 1927
Reg. Book.

90022 on the Steel Screw Motor Vessel "MINNIPA" (Number of Visits 23)

Built at Copenhagen By whom built Akt. Burmeister & Wain's Masking & Kildebyggeri Yard No. 346 Tons { Gross 1976.53
Net 964.32

Owners The Adelaide Steamship Co. Ltd. Port belonging to Port Adelaide When built 1926-27

Electric Light Installation fitted by Akt. Burmeister & Wain's Masking & Kildebyggeri Contract No. 346 When fitted 1927

System of Distribution Two conductor insulated system, direct current ✓
Pressure of supply for Lighting 110 volts, Heating 220 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 rating yes ✓, are they compound wound yes ✓
are they over compounded 5 per cent. 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, 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 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 etc. ✓, 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 at 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 Not situated near unprotected woodwork etc. ✓
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 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 a three circuit breaker with overload and reverse current trip as per Rules.
For each outgoing circuit a double pole switch and double pole fuse as per Rules.
Instruments on main switchboard 6 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 switchboard is provided with 2 sets earth testing lamps, for 220 & 100 volts respectively.
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 ✓

Main cables - single.
Cables: Single, twin, concentric, or multicore *small " - " - " - "* are the cables insulated and protected as per Tables IV or V of the Rules. *Tables IV*
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *ca 5 Volt.*
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 *✓*
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, secured by screwed clips and where necessary protected by iron casings or iron tubes. -*
 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 VIII *✓*
Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *yes (Provision chambers)*
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 *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 *yes*
Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *For emergency bilge and fire pumps*
a 10 KW. 220 Volt direct current compound wound dynamo, driven by a Petrol Motor. (Pinto type).
The motor, dynamo and switchboard are installed in the steering gear house aft. -
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 *✓*
Fittings, are all fittings on weather decks, *in stokehold* 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 *In the fore holds.*
Watertight lamps protected with strong iron guards. -
 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 *✓*
Arc 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* 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 *✓*, 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 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 *✓*
 If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *✓*

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	66 each	220	300	400	For auxiliary diesel oil engine.	Crude oil	above 150° F.	
AUXILIARY ...									
EMERGENCY ...	1	10	220	45	1250	Petrol Motor.	Petrol		
ROTARY TRANSFORMER	1	14	220/110	127	1650	Electric motor.			
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. (Lead and Return.) Meters.	Insulated with	HOW PROTECTED.
				No.	Diameter. mm.				
	MAIN GENERATOR...	2 in each pole	95 ✓	37	1.80	300	ca 28-37-44	Vulcanized rubber	Lead covered, steel wire or steel tape armoured and braided.
	EQUALISER CONNECTIONS	1	95 ✓	37	1.80		14-18.5-22	" "	" " "
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	10 ✓	7	1.35	45	" 150	" "	" " "
	ROTARY TRANSFORMER	2	95 ✓	37	1.80	127	" 15	" "	" " "
	AUXILIARY SWITCHBOARDS	2	50 ✓	19	1.88	55	" 15	" "	" " "
	ENGINE ROOM	2	4 ✓	7	0.85	ca. 11	" 6	" "	" " "
	BOILER ROOM								
	ACCOMMODATION								
	OFFICERS' HEATING	2	25 ✓	7	2.13	ca. 45	" 36	" "	" " "
	CREW'S - " -	2	4 ✓	7	0.85	" 16	" 85	" "	" " "
	GALLEY	2	18.5 ✓	37	2.52	" 305	" 22	" "	" " "
	CAPTAIN - HEATING	2	2.5 ✓	7	0.67	" 13.6	" 70	" "	" " "
	STEWARDS - " -	2	2.5 ✓	7	0.67	" 12.5	" 36	" "	" " "
	OFFICERS' - LIGHT.	2	10 ✓	7	1.35	" 23	" 36	" "	" " "
	CREW'S - " -	2	4 ✓	7	0.85	" 13	" 85	" "	" " "
	PASSENGERS - " -	2	16 ✓	7	1.70	" 45	" 16	" "	" " "
	" - " -	2	10 ✓	7	1.35	" 30	" 58	" "	" " "
	WIRELESS	2	10 ✓	7	1.35	" 14	" 80	" "	" " "
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	1.5 ✓	1	1.38	" 0.55	" 90	" "	" " "
	SIDE LIGHTS	2	1.5 ✓	1	1.38	" 0.55	" 20	" "	" " "
	COMPASS LIGHTS	2	1.5 ✓	1	1.38	" 0.2	" 12	" "	" " "
	POOP LIGHTS	2	1.5 ✓	1	1.38	" 0.55	" 160	" "	" " "
	CARGO LIGHTS	2	1.5 ✓	Flexible	" 1.4	" 40	" 40	" "	Taped and braided.
	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. (Lead and Return.) Meters.	Insulated with	HOW PROTECTED.
				No.	Diameter. mm.				
	BALLAST PUMP	1	10 ✓	7	1.35	ca. 32	ca 40	Vulcanized rubber	Lead covered, steel wire or steel tape armoured and braided.
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP	1	10 ✓	7	1.35	" 32	ca 250	" "	" " "
	BILGE AND SANITARY PUMPS	2	10 ✓	7	1.35	" 36	" 50	" "	" " "
	HOT SEA WATER PUMPS	1	2.5 ✓	7	0.67	" 12	" 6	" "	" " "
	HOT FRESH WATER PUMPS	1	2.5 ✓	7	0.67	" 12	" 6	" "	" " "
	AIR COMPRESSOR								
	FRESH WATER PUMP	1	2.5 ✓	7	0.67	" 12	" 6	" "	" " "
	ENGINE TURNING GEAR	1	10 ✓	7	1.35	" 32	" 12	" "	" " "
	ENGINE REVERSING GEAR								
	COOLING WATER PUMP AND LUBRICATING OIL PUMPS	1	70 ✓	19	2.16	" 132	" 23	" "	" " "
	SMALL OIL FUEL TRANSFER PUMPS	1	4 ✓	7	0.85	" 16	" 10	" "	" " "
	WINDLASS AND WINCHES, FORWARD	5	240	61	2.24	" 273	" 72	" "	" " "
	WINCHES, AFT	2	95	19	2.52	" 147.	" 92	" "	" " "
	STEERING GEAR—								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR	1	10 ✓	7	1.35	" 28	" 108	" "	" " "
	WORKSHOP MOTOR'S	2	2.5 ✓	7	0.67	" 8	" 12	" "	" " "
	ON ENGINE TOP	1	1.5 ✓	1	1.38	" 3	" 10	" "	" " "
	NAVATORY	2	1.5 ✓	1	1.38	" 3	" 25	" "	" " "
	OIL FUEL TRANSFER PUMP	1	70 ✓	19	2.16	" 132	" 23	" "	" " "
	LUBRICATING OIL PUMP	1	70 ✓	19	2.16	" 132	" 23	" "	" " "
	SUPERCHARGE BLOWER	1	150 ✓	37	2.27	" 200	" 49	" "	" " "
	PURIFIERS	2	2.5 ✓	7	0.67	each 10	" 18	" "	" " "
	" - "	1	2.5 ✓	7	0.67	ca 8	" 10	" "	" " "
	REFRIGR. CO. COMPRES.	1	70 ✓	19	2.16	" 110	" 44	" "	" " "
	" - BRINE PUMP.	1	2.5 ✓	7	0.67	" 12	" 16	" "	" " "
	CRANES	4	70 ✓	19	2.16	" 118	" 36	" "	" " "

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 & WAINES MASKIN- OG SKIBSBYGGERI

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass *abt. 65 feet.*

Distance between electric generators or motors and steering compass *" 60 "*

The nearest cables to the compasses are as follows:—

A cable carrying *abt 5* Ampères *10* feet from standard compass *10* feet from steering compass.

A cable carrying *0.2* Ampères *to the lamp that from* standard compass *and in 10 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 & WAINES MASKIN- OG SKIBSBYGGERI

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 lightning and power installation as above described has been fitted in accordance with the requirements in the Rules, the approved plan and the Secretary's letter E. dated the 2nd March 1927.

The material used in the installation, 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 of "Electric light" in the Register Book.

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

Total Capacity of Generators *198* Kilowatts.

The amount of Fee ... *£ 662.48:*

When applied for,

14.6 19 *27*

When received,

18/7/27 19 *27*

Travelling Expenses (if any) £

d. J. Duboch
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 21 JUN 1927

Assigned

Elec. Light



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Lloyd's Register
Foundation