

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

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Date of writing Report 25 Feb 1938 When handed in at Local Office 10 Port of Amsterdam
No. in Survey held at Amsterdam Date, First Survey Sept 3 Last Survey 16 February 1938
Reg. Book. on the Single Screw M.V. "TRAFALGAR" (Number of Visits 24)
Built at Amsterdam By whom built Ned Scheep 44 Yard No. 260 When built 1930
Owners W. H. Wilhelmsen Port belonging to Tonsberg
Electric Light Installation fitted by N. V. Electr 44 H. B. K. Contract No. When fitted 1930
Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Double wire system
Pressure of supply for Lighting 220 volts, Heating 220 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 temperature rise 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 Have certificates of test results for machines under 100 kw. been submitted and approved Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes
Have certificates for generators under 100 kw. been supplied and approved
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 in Motorroom, 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 None 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 Motorroom
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 None 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 is it of an approved type 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 None, is the non-hygroscopic insulating material of an approved type 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, temperature rise of omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the "off" position No are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side of switches No Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches Double Pole handle switches and double pole fuses
Are turbine driven generators fitted with emergency trip switch as per rule Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material Instruments on main switchboard 9 ammeters 5
voltmeters synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system 2 lamps in series connected to the earth Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Yes have the reversed

current protection devices been tested under working conditions *yes* are all fuses labelled as per rule *yes*

Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule *yes*

Cables: Single, twin, concentric, or multicore *Diff types* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules *yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type *✓* **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *2 volts for light, 5 v for power*

Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *yes* **Paper Insulated and Varnished Cambric Insulated Cables,**

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *yes* or waterproof insulating tape *yes* **Cable Runs,** are the cables sized 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* are cables laid under machines or floorplates *yes* if so, are they adequately protected *yes*

Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit *lead covered armoured*

Support and Protection of Cables, state how the cables are supported and protected *Tied on hull plates with galvanised iron clips*

If cables are run in wood casings, are the casings and caps secured by screws *none* 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 *yes*

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements *refrigeration chambers yes*

Joints in Cables, state if any, and how made, insulated, and protected *no joints*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *glands*

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *armoured* state the material of which the bushes are made *lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *connected to frame* 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 *Battery is placed and controlled from bridge*

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* are they ventilated 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 *none* are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *none* how are the cables led

where are the controlling switches situated *✓* are all fittings suitably ventilated *✓* are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials *yes*

Heating and Cooking Appliances, are they constructed and fitted as per Rule *yes* are air heaters constructed and fitted as per Rule *✓*

Searchlight Lamps, No. of *none* whether fixed or portable *✓* 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 *none* if not of this type, state distance of the combustible material horizontally or vertically above the motors *✓* and *✓* have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *none* have certificates for all motors for essential services been supplied and approved *✓*

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 *none* **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 *above 150° F* are all fuses of the filled cartridge type *yes* are they of an approved type *yes* If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces *none* **Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule *yes* are they suitably stored in dry situations *yes*

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	3	120 each	220	545	360	auxiliary engines	Diesel oil	above 150°	
AUXILIARY									
EMERGENCY									
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins. No. 4	No.	Diameter.	Circuit.	Rate.			
MAIN GENERATOR	2	120 MM ²	37	2.03	545	560	35 Meters	Paper	Lead covered then armoured
EQUALISER CONNECTIONS	1	120	37	2.03	273	280	do	do	do
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	25	7	2.13	55	63	25 Meters	Rubber	" " "
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	16	7	1.70	30	40	25 "	"	" " "
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
Dist for workshop	1	16	7	1.70	30	40	25 "	"	" " "
Dist for engine	1	16	7	1.70	22	40	30 "	"	" " "
Dist for pumps	1	16	7	1.70	22	40	30 "	"	" " "
Dist for bilge pump	1	35	19	1.53	72	70	40 "	"	" " "
Dist for sanitary pump	1	25	7	2.13	50	63	40 "	"	" " "
Dist for oil separator	1	16	7	1.70	25	40	20 "	"	" " "
Dist for cooler pumps	1	16	7	1.70	40	40	50 "	"	" " "
ACCOMMODATION LIFT	1	16	7	1.70	10	40	60 "	"	" " "
Chart room	1	16	7	1.70	10	40	50 "	"	" " "
Headship	1	16	7	1.70	25	40	10 "	"	" " "
Bridge deck	1	16	7	1.70	25	40	45 "	"	" " "
Navigation	1	16	7	1.70	25	40	45 "	"	" " "
Tow Ship	1	16	7	1.70	10	40	80 "	"	" " "
WIRELESS	1	16	7	1.70	25	40	45 "	"	" " "
SEARCHLIGHT									
MASTHEAD LIGHT	1	2.5	3	1.03	1	15	100	"	" " "
SIDE LIGHTS	1	2.5	3	1.03	1	15	10	"	" " "
COMPASS LIGHTS	1	2.5	3	1.03	1	15	15	"	" " "
POOP LIGHTS	1	2.5	3	1.03	1	15	120	"	" " "
CARGO LIGHTS	1	4	7	0.85	2	21	60	"	" " "
HEATERS	1	2.5	7	2.03	55	63	40	"	" " "

MOTOR CONDUCTORS.									
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rate.		
BALLAST PUMP	229026	1	70 MM ²	19	2.16	115	200	42 Meters	Paper Lead covered then armoured
MAIN BILGE LINE PUMPS	293151	1	16 "	7	1.7	30	40	32 "	Rubber
GENERAL SERVICE PUMP	293150	1							
EMERGENCY BILGE PUMP									
SANITARY PUMP	293191	1	6 "	7	1.05	23.4	29	37 "	" " "
CIRC. SEA WATER PUMPS	293092-93	1	4 "	7	0.85	9	21	32 "	" " "
CIRC. FRESH WATER PUMPS	293091-94	1	4 "	7	0.85	9	21	27 "	" " "
AIR COMPRESSOR									
FRESH WATER PUMP									
ENGINE TURNING GEAR	293190	1	10 "	7	1.35	34	40	35 "	" " "
ENGINE REVERSING GEAR									
LUBRICATING OIL PUMPS	229137-38	1	150 "	37	2.27	100	203	17 "	" " "
OIL FUEL TRANSFER PUMP	229074	1	16 "	7	1.70	39	40	25 "	" " "
WINDLASS									
WINCHES, FORWARD									
4 "									
4 "									
WINCHES, AFT									
4 "									
4 "									
STEERING GEAR									
(a) MOTOR GENERATOR									
(b) MAIN MOTOR									
WORKSHOP MOTOR	293103	1	10 "	7	1.35	121	30	5 "	Rubber
VENTILATING FANS									
1 Deep tank pump	229169	1	70 "	19	2.16	150	239	45 "	Paper
1 Winch (Shifting)		1	70 "	19	2.16	120	239	75 "	" " "

The Electrical Equipment is installed in accordance with the approved plans.

All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

N.V. Electriciteits Mij
v/h ALBERTS & KLUFT

Electrical Engineers.

Date

COMPASSES.

Minimum distance between electric generators or motors and standard compass

Minimum distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 4 feet from standard compass 3 feet from steering compass.

A cable carrying Ampères feet from standard compass 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

The maximum deviation due to electric currents was found to be *nil* degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

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 installation has been fitted aboard in accordance with the rules, approved plans & Secretary's letter

Workmanship throughout good

The whole of the installation has been tested under full working condition found working good

Noted.

Noted.
2-3-38

Total Capacity of Generators *360* Kilowatts.

The amount of Fee ...

550
606

When applied for,

19

Travelling Expenses (if any) *£*

When received.

16.5.19 *58* *10.3*

H. J. J. J. J.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 15 MAR 1938

Assigned

See Ans. 7E 15164



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Foundation