

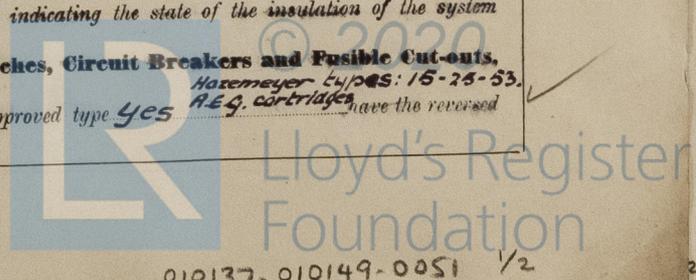
# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office OCT 10 1938.

Date of writing Report 27<sup>th</sup> Sept 1938 When handed in at Local Office 10 Port of Rotterdam  
 No. in Survey held at Deest Date, First Survey 7<sup>th</sup> 9-38 Last Survey 21<sup>st</sup> - 9 - 1938  
 Reg. Book. (Number of Visits.....2.....)  
 on the m.s. "ENIDTOWN" Tons { Gross 795  
 Net 485  
 Built at Deest By whom built Gebr. v.d. Werf Yard No. 206 When built 1938  
 Owners Brook Shipping Co. Ltd. Port belonging to \_\_\_\_\_  
 Electric Light Installation fitted by C. Alewynse & Co - Nymegen. Contract No. \_\_\_\_\_ When fitted 1938  
 Is the Vessel fitted for carrying Petroleum in bulk no.

**System of Distribution** two wire system ✓  
**Pressure of supply for Lighting** 42 volts, **Heating** ✓ 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 ✓ 42v. gen. are shunt wound  
**Generators**, do they comply with the requirements regarding temperature rise yes ✓, are they compound wound yes (220v. generator) ✓  
 are they over compounded 5 per cent. yes (220v. gen.), if not compound wound state distance between each generator \_\_\_\_\_ ✓  
 Where more than one generator is fitted are they arranged to run in parallel no ✓, 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 \_\_\_\_\_ ✓  
 Have certificates for generators under 100 kw. been supplied and approved 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** in engine room, 42v. generators at portside, 220v. generator at starboard 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 in engine room, lighting board at portside, power board at starboard side 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 ✓, is it of an approved type 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 \_\_\_\_\_ ✓, is the non-hygroscopic insulating material of an approved type \_\_\_\_\_ ✓, and is the frame effectively earthed yes ✓. Are the fittings as per Rule regarding: — spacing or shielding of live parts \_\_\_\_\_ ✓, 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 42 v. generators : a d.p. change over switch & one set of d.p. fuses. — battery : two d.p. change over switches, one s.p. automatic cut in & cut out switch & one set of d.p. fuses. — for each outgoing circuit : one d.p. switch & one set of d.p. fuses. 220v. generator and each outgoing circuit : one d.p. switch & one set of d.p. fuses.  
 Are turbine driven generators fitted with emergency trip switch as per rule \_\_\_\_\_ ✓ Are cupboards or compartments containing switchboards composed of 42v. : 2 ammeters - 1 voltmeter  
 fire-resisting material or lined with approved material yes ✓ **Instruments** on main switchboard 220v. : 1 ammeters ✓  
 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 one pair of earth fault indicating lamps for each switchboard **Switches, Circuit Breakers and Fusible Cut-outs**, Hazemeyer types: 15-25-53. A.E.G. cartridges have the reversed \_\_\_\_\_ ✓  
 do these comply with the requirements of the Rules. yes ✓ are the fusible cutouts of an approved type yes ✓



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 multi-core all 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 2.6 V in 420 volts - 4.25 V in 220 V circ. **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 ✓, or waterproof insulating tape ✓ **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 are cables laid under machines or floorplates Yes if so, are they adequately protected Yes

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit Yes clipped to metal trays or direct to steelwork or wood-work of vessel by metal clips, or run in conduit

**Support and Protection of Cables**, state how the cables are supported and protected work of vessel by metal clips, or run in conduit

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 Yes

**Refrigerated Chambers**, are the cables and fittings in accordance with the special requirements ✓

**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 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 Lead sheath & steel wire braiding of cables and all apparatus where necessary earthed to Rule requirements 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 by battery in engine room, controlled by two d.p. changeover switches on 42V. switchboard.

**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 no 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 ✓ are all fittings suitably ventilated Yes, 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 ✓, are air heaters constructed and fitted as per Rule ✓

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

**Motors**, are their working parts readily accessible Yes, where possible, 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, where possible, are they protected from mechanical injury and damage from water, steam or oil Yes are their axes of rotation fore and aft Yes, where possible 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 (steering gear motor is totally enclosed), 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 ✓ have certificates for all motors for essential services been supplied and approved 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 ✓ **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 ✓ are all fuses of the filled cartridge type ✓ are they of an approved type ✓ 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 ✓ **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.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	36	220	164	950	Oil engine	diesel oil	Above 150° F.
Lighting	1	2.5	36/52	48	1600	"	"	"
Emergency	1	2.5	36/52	48	800	main engine	"	"
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. mm.	No.	Diameter mm.	In Circuit.	Rule.			
MAIN GENERATOR ...	1	95	19	2.53	164	190-1/2 hr	24	rubber	lead sheath & steel wire braided.
EQUALISER CONNECTIONS									
Lighting	1	35	19	1.53	48	78	45 & 15	"	"
Battery connections	1	35	19	1.53	-	78	25	"	"
EMERGENCY GENERATOR									
ROTARY MOTOR									
TRANSFORMER GENERATOR									
ENGINE ROOM ...	1	2.5	1	1.79	8	15.5	90	"	"
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS									
Lighting dist. board	1	50	19	1.83	35	99	210	"	in conduit
winch board fore	1	70	19	2.17	120	125	360	"	"
Navigation board	1	4	7	.86	10	22.5	30	"	lead sheath & steel wire braided
ACCOMMODATION ...	1	2.5	1	1.79	7	15.5	90	"	"
WIRELESS ...	1	4	7	.86	7	22.5	21	"	"
SEARCHLIGHT ...	1	15	1	1.39	.8	9.5	150	"	"
MASTHEAD LIGHT ...	1	1.5	1	1.39	.8	9.5	30	"	"
SIDE LIGHTS ...	1	1.5	1	1.39	.5	9.5	30	"	"
COMPASS LIGHTS ...	1	1.5	1	1.39	.8	9.5	150	"	"
POOP LIGHTS ...	1	2.5	1	1.79	1	15.5	90-45	"	"
CARGO LIGHTS (220V.)	1	2.5	1	1.79	1	15.5	90-45	"	"
HEATERS ...									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	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. mm.	No.	Diameter mm.	In Circuit.	Rule.			
BALLAST PUMP ...										
MAIN BILGE LINE PUMPS ...										
GENERAL SERVICE PUMP ...										
EMERGENCY BILGE PUMP ...										
SANITARY PUMP ...										
CIRC. SEA WATER PUMPS ...										
CIRC. FRESH WATER PUMPS ...										
AIR COMPRESSOR ...										
FRESH WATER PUMP ...										
ENGINE TURNING GEAR ...										
ENGINE REVERSING GEAR ...										
LUBRICATING OIL PUMPS ...										
OIL FUEL TRANSFER PUMP ...										
WINDLASS ...	1	1	25	7	2.13	51	67-1/2 hr	75	rubber	lead sheath - steel wire braided.
WINCHES, FORWARD ...	2	1	25	7	2.13	51	67-1/2 hr	45	"	"
warping winch	1	1	10	7	1.08	32.5	38	120	"	"
WINCHES, AFT ...	1	1	50	19	1.83	85	99	90	"	"
"	2	1	25	7	2.13	51	67-1/2 hr	90	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR ...										
(b) MAIN MOTOR ...	1	1	16	7	1.69	44	49	210	"	in conduit
WORKSHOP MOTOR ...										
VENTILATING FANS ...										

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.

C. ALEWIJNSE & Co's  
ELECTROTECHN. BUREAU N.V.

Electrical Engineers.

Date 28 September 1938

COMPASSES.

Minimum distance between electric generators or motors and standard compass 10 feet (steering gear motor)

Minimum distance between electric generators or motors and steering compass 15 feet (steering gear motor)

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 6 feet from standard compass 3 feet from steering compass. steering gear controll.

± cable carrying 14 Ampères 1 foot from standard compass 1 foot from steering compass. Compass Lights

A cable carrying 11 Ampères 12 feet from standard compass 9 feet from steering compass. main cable nav. Lights

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 nihil degrees on every course in the case of the standard compass, and nihil degrees on every course in the case of the steering compass.

N.V. SCHEEPSWERF GEBR. v. d. WERF.

Builder's Signature.

Date 20 Sept. 38

*O. M. d. Werf*

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 electrical equipment of this vessel)

has been fitted on board under special survey, tested under full working conditions and found satisfactory. The material and workmanship are good and the electrical installation merits in my opinion the Committee's approval.

*Widj  
13/10/38*

Total Capacity of Generators 41 Kilowatts.

The amount of Fee ... £ 303,- : { When applied for, 8.10.38

Travelling Expenses (if any) £ 22,- : { When received, 18/10.38

*H. van der Wyk*  
Surveyor to Lloyd's Register of Shipping.

FRI 14 OCT 1938

Committee's Minute

Assigned See Minute on P. back

20.12.38.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.



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