

Rpt. 13.

No. 56110.

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 25 June 1948 When handed in at Local Office 25 June 1948 Port of CARDIFF  
 No. in Survey held at CARDIFF Date, First Survey 13. 4. 48 Last Survey 21. 6 1948  
 Reg. Book. 23/85 on the S.S. "EMPIRE CONSENT" (Number of Visits 4)

Tons { Gross 1942  
 Net 964

Built at KRIMPEN a/b YSEL By whom built NYC. VAN DER GIESSEN & SONS Yard No. - When built 1944  
 Owners MINISTRY OF TRANSPORT Port belonging to LONDON  
 Electric Light Installation fitted by - Contract No. - When fitted 1944  
 Is the Vessel fitted for carrying Petroleum in bulk NO

System of Distribution SINGLE WIREPressure of supply for Lighting 220 volts, Heating - volts, Power 220 volts.Direct or Alternating Current, Lighting D.C. Power D.C.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 YESGenerators, do they comply with the requirements regarding temperature rise YES, are they compound wound YESare 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 NO, is an adjustable regulating resistance fitted in series with each shunt field YESHave certificates of test results for machines under 100 kw. been submitted and approved -Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing -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 YESAre the lubricating arrangements of the generators as per Rule YESPosition of Generators BOTTOM PLATFORM OF ENGINE ROOM, STARBOARD SIDE, is the ventilation in way of the generators satisfactory YESare they clear of all inflammable material YES if situated near unprotectedwoodwork 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 YESEarthing, are the bedplates and frames of the generating plant efficiently earthed YES are the prime movers and their respective generators in metallic contact YESMain Switch Boards, where placed BOTTOM PLATFORM OF ENGINE ROOM, AFT BULKHEADIf 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 YESif 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 YESis all insulation of high dielectric strength and of permanently high insulation resistance YESis 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 -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 YESaccessibility of all parts YES, absence of fuses on back of board YES, temperature rise of omnibus bars -individual fuses to voltmeter, pilot or earth lamp YES, are moving parts of switches alive in the "off" position NOare all screws and nuts securing connections effectively locked YES are any fuses fitted on the live side of switches YESMain Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 100AMP D.P. FOR DYNAMOS 60 S.D. KNIFE SWITCHES FOR SUB CIRCUITSAre 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 YESInstruments on main switchboard 2. 0-150A ammeters 2. 0-260Vvoltmeters - 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 HULL RETURNSwitches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules YESare the fusible cutouts of an approved type YES have the reversed -

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current protection devices been tested under working conditions. **Joint Boxes, Section and Distribution Boards, is the** **YES**

construction, protection, insulation, material, and position of these as per rule **YES**

Cables: Single, twin, concentric, or multicore **SINGLE** are the cables insulated and protected as per Tables IV, V, X or XI 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** **NIL**

area of 0.04 square inch and above provided with soldering sockets. **YES** **Cable Sockets, are the ends of all cables having a sectional**

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. **YES** **Paper Insulated and Varnished Cambric Insulated Cables.**

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** **Cable Runs, are the cables fixed as far as possible in accessible positions** **ARMoured**

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

Support and Protection of Cables, state how the cables are supported and protected **BRASS CLIPS & SCREWS**

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, are the cables and fittings in accordance with the special requirements. **YES**

Joints in Cables, state if any, and how made, insulated, and protected. **JUNCTION BOXES & TERMINAL STRIPS**

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. **SWEATED LUGS**

are their connections made as per Rule. **YES**

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule. **Emergency Supply, state position and method of control of the emergency supply and how the generator is driven**

Navigation Lamps, are these separately wired. **YES**, controlled by separate switch and separate fuses. **YES**, are the fuses double pole. **S.D.**

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. **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. **YES**

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. **YES**, are air heaters constructed and fitted as per Rule. **YES**

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

Arc 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

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing. **YES**

field and motor speed regulators, starters and controllers constructed and fitted as per Rule. **YES**

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** 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 type approved by the Home Office. **YES**

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule. **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	2	1.15	1.12	220	670 320 600 550	STEAM				
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.	Diameter.	Circuit.	Rule.				
MAIN GENERATOR	1	0.06	19	0.04	36.5	23.	40 FEET	Y.I.R.	ARMoured	LEAD
EQUALISER CONNECTIONS										
AUXILIARY GENERATOR										
EMERGENCY GENERATOR										
ROTARY TRANSFORMER										
ENGINE ROOM	1	0.0045	7	0.029	7	15	10 FEET	Y.I.R.	Do	Do
BOILER ROOM	1	0.0045	7	0.029	7	15	10 FEET	Do	Do	Do
AUXILIARY SWITCHBOARDS										
ACCOMMODATION										
ENGINEERS FORWARD	1	0.007	7	0.036	14	24	200 FEET	Y.I.R.	ARMoured	LEAD
MIDSHIP	1	0.0045	7	0.029	17	15	150 FEET	Do	Do	Do
WIRELESS	1	0.0045	7	0.029	10	15	80 FEET	Do	Do	Do
SEARCHLIGHT										
MASTHEAD LIGHT	1	0.002	3	0.029	5	5	150 FEET	Do	Do	Do
SIDE LIGHTS	1	0.002	3	0.029	5	5	60 FEET	Do	Do	Do
COMPASS LIGHTS	1	0.002	3	0.029	5	5	80 FEET	Do	Do	Do
POOP LIGHTS										
CARGO LIGHTS										
ARC LAMPS										
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. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP	1	1	0.003	3	0.036	4.5	10	40 FEET	Y.I.R.	ARMoured & LEAD
CIRC. SEA WATER PUMPS	1	1	0.003	3	0.036	4.2	10	140 FEET	Do	Do
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR	1	1	0.007	7	0.036	9.5	24	200 FEET	Y.I.R.	ARMoured & LEAD
(b) MAIN MOTOR	1	1	0.007	7	0.036	8	24	30 FEET	Do	Do
WORKSHOP MOTOR										
VENTILATING FANS										



All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

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

The foregoing is a correct description.

THE HOLMS ELECTRICAL & ENGINEERING CO. LTD.

*J. J. Holmes*

Electrical Engineers.

Date *27th Jan 1948*

#### COMPASSES.

Distance between electric generators or motors and standard compass

90 FEET

Distance between electric generators or motors and steering compass

95 FEET

The nearest cables to the compasses are as follows:—

A cable carrying 25 Ampères 8 feet from standard compass 7 feet from steering compass.

A cable carrying 25 Ampères 8 feet from standard compass 7 feet from steering compass.

A cable carrying 25 Ampères 8 feet from standard compass 7 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power

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 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

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 SPECIALLY EXAMINED, AND FOUND TO BE OR NOW PLACED IN GOOD CONDITION AND IN ACCORDANCE WITH THE PLANS APPROVED ON THE 27.4.48 THE INSULATION HAS BEEN MEGGER TESTED THROUGHOUT AND GOVERNOR GEARS TESTED UNDER WORKING CONDITIONS AND FOUND SATISFACTORY

IN MY OPINION THE EQUIPMENT IS ELIGIBLE TO BE CLASSED

Total Capacity of Generators 27 Kilowatts.

The amount of Fee

entailed on Rept. 9: £56.14.4

When applied for,

When received.

Travelling Expenses (if any) £

Committee's Minute

Assigned

*See minute on Rept. 9*

*Thomas Donaldson*  
Surveyor to Lloyd's Register of Shipping.

FRI. 23.11.1948



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Foundation