

17 FEB 1937

Rpt. 13.

No. 58006

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 26-1-1937 When handed in at Local Office 11-2-37 Port of Glasgow.
 No. in Survey held at Glasgow. Date, First Survey 16-11-36 Last Survey 3-2-1937.
 Reg. Book. 87744. on the M.V. "CAMEO" (Number of Visits.....6)
 Tons { Gross 946
 Net 504
 Built at Glasgow. By whom built A. J. Inglis Ltd Yard No. 979P When built 1937.
 Owners Wm. Robertson Port belonging to Glasgow.
 Electric Light Installation fitted by Harland & Wolff Ltd and Jelford Bros Glasgow Ltd. Contract No. 979P. When fitted 1937
 Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Two wire.
 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 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 —
 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 main 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 — 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 main Engine Room near generators.
 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 micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Sundry 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
 D.P. Circuit Breaker with 1/2 Bips for 50KW. generators. D.P. switch fuses for 10KW generators. D.P. main and D.P. fuses for each outgoing circuit.
 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 2 ammeters 1 voltmeter —
 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 Good lamp
 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

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current protection devices been tested under working conditions

Joint Boxes, Section and Distribution Boards, is the

construction, protection, insulation, material, and position of these as per Rule

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

If the cables are insulated otherwise than as per Rule, are they of an approved type

any point of the installation under maximum load

area of 0.04 square inch and above provided with soldering sockets

If conductors are ~~paper~~ varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with

insulating compound

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

Support and Protection of Cables, state how the cables are supported and protected

ways or run in gals. tubing. Machinery spaces L.C.B. Accommodation L.C.B.

If cables are run in wood casings, are the casings and caps secured by screws

separate grooves

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

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

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the

holes efficiently bushed

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

bonded and earthed

are their connections made as per Rule

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule

position and method of control of the emergency supply and how the generator is driven

Navigation Lamps, are these separately wired

are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule

Secondary Batteries, are they constructed and fitted as per Rule

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight

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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

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

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

are their fittings as per Rule

Are Lamps, other than searchlight lamps, No. of

are their live parts insulated from the frame or case

Motors, are their working parts readily accessible

are the brushes, brush holders, terminals and lubricating arrangements as per Rule

inflammable gases cannot accumulate and clear of all inflammable material

are they protected from mechanical injury and damage from

water, steam or oil

are their axes of rotation fore and aft

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

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

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

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 type approved by the Home Office

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule

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	1	50	220	227	700	Oil Engine	Diesel Oil	Above 150° F.
AUXILIARY	1	10	220	46	800	" "	"	"
EMERGENCY	1	50	220	227	1000	Oil Eng. fitted	7.62	"
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	30	37	0.03	227	240	54	Rubber.	L.C.A.B.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	0.226	7	0.064	46	46	140	"	" "
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	0.03	3	0.036	2	12	30	"	L.C.B.
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
ACCOMMODATION LIGHTING	1	0.03	3	0.036	9	12	54	"	L.C.B.
FLOODLIGHTS	1	0.03	3	0.036	3	12	60	"	" "
NAVIGATION	1	0.03	3	0.036	2	12	108	"	" "
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	1	0.02	3	0.029	18	7.8	160	"	L.C.B.
SIDE LIGHTS	1	0.02	3	0.029	18	7.8	40	"	"
COMPASS LIGHTS	1	0.02	3	0.029	10	7.8	20	"	"
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	1	1	0.04	19	0.052	51	64	165	Rubber	L.C.A.B.
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 PUMP	1	1	0.07	7	0.036	19.2	24.0	24	"	" "
OIL FUEL TRANSFER PUMP	1	1	0.03	3	0.036	5.6	12.0	132	"	" "
WINDLASS	1	1	0.10	19	0.083	86	118	150	"	L.C.B.
WINCHES, FORWARD (MAINS)	2	1	0.10	19	0.083	200	203	222	VanCombe	L.C.B.
WINCHES, AFT	2	1	0.10	19	0.083	100	203	60	"	" "
CAPSTAN	1	1	0.03	19	0.044	56	56	150	Rubber	L.C.A.B.
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	0.07	7	0.036	17	24	150	"	" "
WORKSHOP MOTOR										
VENTILATING FANS										
OIL PURIFIER	1	1	0.03	3	0.036	2.5	12.0	120	"	" "
OIL FUEL HEATER	1	1	0.045	7	0.052	34	37	108	"	" "
LUB. OIL HEATER	1	1	0.045	7	0.029	15.9	18.2	126	"	" "

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.

TELFORD, GRIER, MACKAY & CO. LTD.

Electrical Engineers.

Date 3-2-37

J. Norman Ferguson.

DIRECTOR,

COMPASSES.

Distance between electric generators or motors and standard compass

40 ft.

Distance between electric generators or motors and steering compass

40 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 10 Amperes led into feet from standard compass led into feet from steering compass.

A cable carrying 2 Amperes 8 feet from standard compass 5 feet from steering compass.

A cable carrying Amperes 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 1/2 degrees on any course in the case of the standard compass, and 1/2 degrees on any course in the case of the steering compass.

A. & J. INGLIS, LIMITED

W. S. Milne

Manager.

Builder's Signature.

Date 10-2-37

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 condition and found satisfactory. The materials and workmanship are good.

11/2/37

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... £ 28 : 10

When applied for, 16 FEB 1937

Travelling Expenses (if any) £

When received, 20-2-37

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

Committee's Minute GLASGOW 16 FEB 1937

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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