

Rpt. 13.

No. 61012

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office APR 26 1939

Date of writing Report 19-4-39. When handed in at Local Office 21:4:39 Port of Glasgow.
 No. in Survey held at Port Glasgow and Glasgow Date, First Survey 2:2:39 Last Survey 19-4-1939.
 Reg. Book. 87083, on the S.S. "ADVISER."
 Built at Port Glasgow. By whom built Lithgows Ltd. Yard No. 917 When built 1939
 Owners Charente S.S. Co. Ltd. (T.J. Harrison Mgrs) Port belonging to Liverpool
 Electric Light Installation fitted by Campbell, Isherwood. Contract No. 917 When fitted 1939
 Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution

Pressure of supply for Lighting

110

volts, Heating

volts, Power

110

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

no

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 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

near generator

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

Sindanyo

, 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

generator and each outgoing circuit controlled by S.P. switch and fuse

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

1

ammeters

voltage

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

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 *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 *5 Volts*

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

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 in machinery spaces, galleys, lavatories, bathrooms and latrines lead covered or run in conduit *yes*

Support and Protection of Cables, state how the cables are supported and protected *main L.C.B. in galvanised pipe; wiring in machinery spaces L.C.A.B. clipped wiring in accommodation L.C.B. clipped*

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 *none*

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 *earthing of hull return conductors in accordance with the Rules; lead and arming efficiently earthed by means of clips or binding glands* 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 *in special compartment of engine room alleyway, controlled by its own switchboard and driven by I.C. engine*

Navigation Lamps, are these separately wired *yes*, controlled by separate switch and separate fuses *yes*, are the fuses double pole *no*

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 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

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 *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

Searchlight Lamps, No. of

Are Lamps, other than searchlight lamps, No. of

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 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

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

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 type approved by the Home Office

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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	15	110	136	450	Steam engine.		
AUXILIARY								
EMERGENCY	1	5	110	45.5	1500	I.C. engine.	Paraffin.	below 150°F
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	15	37	.072	136	152	10	Rubber	L.C.B.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	.03	19	.044	45.5	53	10	"	"
ROTARY TRANSFORMER									
ENGINE ROOM	1	.007	7	.036	22.3	24	5	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
POOP DB.	1	.0045	7	.029	12	18.2	220	"	"
AFT CARGO DB.	1	.007	7	.036	15.4	24	50	"	"
FORW CARGO DB.	1	.007	7	.036	15.4	24	150	"	"
SALOON DB.	1	.007	7	.036	22.2	24	170	"	"
MIDSHIPS DB.	1	.007	7	.036	22	24	60	"	"
ACCOMMODATION									
WIRELESS	1	.007	7	.036	18	24	75	"	"
SEARCHLIGHT	1	.0225	7	.064	45	46	450	"	"
MASTEAD LIGHT	1	.002	3	.029	36	7.8	400	"	"
SIDE LIGHTS	1	.002	3	.029	36	7.8	40	"	"
COMPASS LIGHTS	1	.002	3	.029	2	7.8	15	"	"
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										
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										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										
ASH. HOIST.	2	1	.01	7	.044	18.8	31	110	Rubber	L.C.A.B.
REFRIG.	1	1	.007	7	.036	21	24	60	"	"
SEPARATOR.	1	1	.002	3	.029	5	7.8	40	"	"



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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.

CAMPBELL & ISHERWOOD LTD.

Electrical Engineers.

Date 20.4.1939

COMPASSES.

Distance between electric generators or motors and standard compass

200 feet

Distance between electric generators or motors and steering compass

200 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 36 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 8 Ampères 6 feet from standard compass 5 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 nil degrees on any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

LITHGOWS LIMITED.

Secretary

Builder's Signature.

Date 21/4/39.

Is this installation a duplicate of a previous case yes. If so, state name of vessel

"SCIENTIST"

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 materials and workmanship are good.

Rob
22/4/39

Wid
27/4/39

Total Capacity of Generators 20 Kilowatts.

The amount of Fee ... £ 17 : 10 : When applied for, at 19.

Travelling Expenses (if any) £ - : - : When received, 26.4.39

R. I. Murchison
Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 25 APR 1939

SEE ACCOMPANYING MACHINERY REPORT.

Assigned



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