

Rpt. 13.

No. 109646

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office OCT - 6 1937

Date of writing Report 19 When handed in at Local Office 27 SEP 1937 Port of LIVERPOOL

No. in Survey held at BIRKENHEAD Date, First Survey 19/9/37 Last Survey 17/9/1937
 Reg. Book. 37116 on the M.V. "ALDERSDALE" (Number of Visits 10)

Built at BIRKENHEAD By whom built CAMMELL LAIRD & CO L2 Yard No. 1025 When built 1937

Owners THE ADMIRALTY Port belonging to LONDON

Electric Light Installation fitted by THE SUNDERLAND FORGE & ENG CO L2 Contract No. 1025 When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk YES.

Tons { Gross 8402
 Net 5009

System of Distribution Double live

Pressure of supply for Lighting 110 volts, Heating 110 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 Yes (Two 30 kw gens), 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 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 Engine Room fore and aft, 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

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 Engine Room fore and aft.

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

are they constructed wholly of durable, non-ignitable non-absorbent materials Yes (slate), is all insulation of high dielectric strength and of permanently high insulation resistance

is it of an approved type, 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 Yes

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

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

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

T.P. Circuit Breaker + D.P. Isolating Switch for each main generator + D.P. Switch + 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 Yes

Instruments on main switchboard 3 ammeters { 3 for gens, 9 for outgoing lines

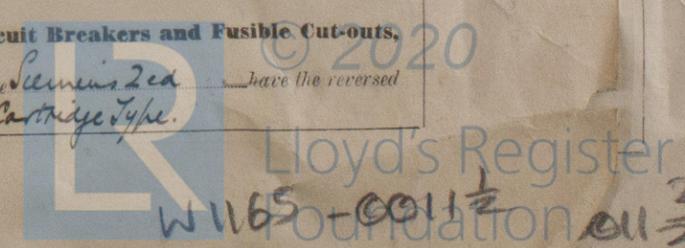
voltmeters synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Earth lamps. Yes

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 Remains 2nd Cartridge type. 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 *Single* 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 *Yes* Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *44 mils*

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 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*

Support and Protection of Cables, state how the cables are supported and protected *head of chain - L.C.A.B. clips to tray along flying bridge - L.C.A.B. in fore. in pipes. In Deck L.C.A.B. clips*

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 *Special Junction boxes in bridge Deck*

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 *Fibre or lead*

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

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 *Magazine: Special fitting, wiring L.C.A.B. in pipe & switch at hatch with bell*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *Pump rooms: Special fittings outside space. Centre Centre space: fast tight fittings* how are the cables led *Pump rooms: wiring external to space. Centre Centre space: L.C.A.B. cable in pipe*

where are the controlling switches situated *bridge Deck alleyway* are all fittings suitably ventilated *Yes & J/T* 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 *1* whether fixed or portable *Portable* 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 *Yes* have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *Yes* 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 *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 *Laminated*

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 *Yes*

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.

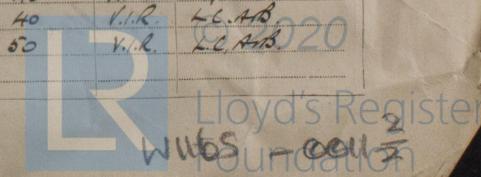
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	30	110	272	500 Steam 550	Parsons Diesel, Steam Reciprocating		
AUXILIARY	1	8	110	72.5	750	Steam Reciprocating		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRANDS.		TOTAL MAXIMUM CURRENT AMPERES.		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.			
MAIN GENERATOR	2	.150	19	.072	272	282	40	V.C.	L.C.A.B.
EQUALISER CONNECTIONS	1	.075	19	.072	141	141	40	V.C.	L.C.A.B.
AUXILIARY GENERATOR	1	.04	19	.052	72.5	94	40	V.C.	L.C.A.B.
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION Saloon	1	.06	19	.064	57.0	122	476	V.C.	L.C.A.B.
do aft	1	.01	7	.044	23.5	31	60	V.I.R.	L.C.A.B.
do Engine Room	1	.0145	7	.052	15.5	57	450	V.C.	L.C.A.B.
Navigation	1	.0145	7	.052	13.5	57	500	V.C.	L.C.A.B.
WIRELESS	1	.01	7	.044	30	38	424	V.C.	L.C.A.B.
SEARCHLIGHT	1	.0225	7	.064	60	68	880	V.C.	L.C.A.B.
MASTHEAD LIGHT	1	.002	3	.019	36	78	924	V.I.R.	L.C.A.B.
SIDE LIGHTS	1	.002	2	.029	36	78	50	do	L.C.A.B.
COMPASS LIGHTS	1	.002	3	.029	36	78	25	do	L.C.A.B.
Starboard Peer LIGHTS	1	.002	3	.029	36	78	1104	do	L.C.A.B.
CARGO LIGHTS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRANDS.		TOTAL MAXIMUM CURRENT AMPERES.		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 PUMPS	2	1	.0045	7	.029	16	18.2	30	V.I.R.	L.C.A.B.
WINDLASS										
WINCHES, FORWARD										
F.D. Fan	1	1	.0145	7	.052	36	37	80	V.I.R.	L.C.A.B.
WINCHES, AFT										
M.E. Fuel oil pump	1	1	.0045	7	.029	12	18.2	40	V.I.R.	L.C.A.B.
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR	1	1	.007	7	.036	24	24	50	V.I.R.	L.C.A.B.
VENTILATING FANS	3	1	.003	1	.064	10	12.9	50	V.I.R.	L.C.A.B.
do	1	1	.0145	7	.052	10	51	450	V.C.	L.C.A.B.
Refr. motor	1	1	.0225	7	.064	64	68	150	V.C.	L.C.A.B.
Class motor	1	1	.0225	7	.064	40	46	40	V.I.R.	L.C.A.B.
Fan	1	1	.003	1	.064	4	12.9	40	V.I.R.	L.C.A.B.
Crane Case Fan	1	1	.003	1	.064	10.5	12.9	50	V.I.R.	L.C.A.B.



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.

J. Williamson

THE SANDERLAND FORGE & ENGINEERING CO. LTD. Electrical Engineers.

Date *Sept 16/37*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *200 ft. approx.*

Minimum distance between electric generators or motors and steering compass *195 ft. approx.*

The nearest cables to the compasses are as follows:—

A cable carrying *11.0* Amperes *12* feet from standard compass *10* feet from steering compass.

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

A cable carrying *.2* Amperes *8* feet from standard compass *in* 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 *easterly & westerly* courses in the case of the standard compass, and *1 1/2* degrees on *westerly* course in the case of the steering compass.

FOR AND ON BEHALF OF
GAMMELL BIRD & Co. LIMITED.

Woodhouse

Builder's Signature.

Date *22 SEP 1937*

SECRETARY

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *M.V. British Gaititude*

General Remarks (State quality of workmanship, opinions as to class, &c. *This installation has been fitted on board under special survey and in accordance with the approved plans and has been tested under working conditions and found satisfactory. The materials and workmanship have been found to be good and sound.*)

Widely
R.F.
8/10/37

Total Capacity of Generators *68* Kilowatts.

The amount of Fee ... £ *29 : 6*

When applied for,

29 SEP 1937

When received,

11.10.37

Travelling Expenses (if any) £ :

R.C. Clayton

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

LIVERPOOL 5 OCT 1937

Assigned

Electric Light

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



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