

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

21 OCT 1936

Received at London Office

Date of writing Report 124 Oct. 1936 When handed in at Local Office 19. 10. 1936 Port of Glasgow.
 No. in Survey held at Greenock. Date, First Survey 17. 9. 36 Last Survey 13-10-1936
 Reg. Book. 87230 on the S.S. "ARABIAN PRINCE." (Number of Visits 5)
 Tons { Gross 1960
 Net 1035
 Built at Port Glasgow. By whom built Wm. Hamilton & Co. Ltd Yard No. 425 When built 1936
 Owners Prince Line Ltd. Port belonging to London.
 Electric Light Installation fitted by The Sunderland Forge & Eng. Co. Ltd Contract No. When fitted 1936
 Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution

Two wire

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

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. Bottom platform.

, 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 adjacent to 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

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

Yes

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. switch fuses for each 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

—

Instruments on main switchboard

2

ammeters

2

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

Earth 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

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 & Twin 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 4.7 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 —, 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 in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit Yes

Support and Protection of Cables, state how the cables are supported and protected Mains L.C.A.B. clipped to steel trays, Accumulation L.C.B. clipped, Machinery space L.C.A.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 Yes

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 Metallic sheathing & armoring of cables, efficiently bonded & earthed

are their connections made as per Rule —

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 —

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 —

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 Strong glass and metal guards

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 Yes, are air heaters constructed and fitted as per Rule —

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

Are Lamps, other than searchlight lamps, No. of —, are their live parts insulated from the frame or case —, are their fittings as per Rule —

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 Yes

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 —

field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes Control Gear and Resistances, are the generator

are required, are these fitted as per Rule — Lightning Conductors, where lightning conductors

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 fitted cartridge type — are they of an approved type —

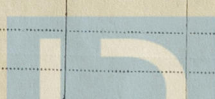
If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office —

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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.		
MAIN ...	2	30	110	273	550	Steam Engines				
AUXILIARY ...										
EMERGENCY ...										
ROTARY TRANSFORMER										

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		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.	Circuits.	Rule.				
MAIN GENERATOR ...	1	25	37	.093	273	309	20	Van Cambie	L.C.B.	
EQUALISER CONNECTIONS ...										
AUXILIARY GENERATOR ...										
EMERGENCY GENERATOR ...										
ROTARY TRANSFORMER } MOTOR GENERATOR ...										
ENGINE ROOM ...	1	.01	7	.044	27.8	31	60	Rubber	L.C.A.B.	
BOILER ROOM ...										
AUXILIARY SWITCHBOARDS ...										
ACCOMMODATION ...										
MIDSMAN Ltg. SACT BOND	1	.0225	7	.064	36.5	46	200	"	"	
PANTRY GEAR SACT BOND	1	.0225	7	.064	40	46	200	"	"	
NAVIGATION & CASH ACC. D.B.	1	.007	7	.036	11.1	24	250	"	"	
CHASSIS & ENG'G Ltg. D.B.	1	.007	7	.036	22.4	24	100	"	" ~ L.C.B.	
WIRELESS ...	1	.01	7	.044	20	31	130	"	"	
SEARCHLIGHT ...										
MASTHEAD LIGHT ...	1	.002	3	.029	.36	7.8	300	"	L.C.A.B.	
SIDE LIGHTS ...	1	.002	3	.029	.36	7.8	60	"	L.C.B.	
COMPASS LIGHTS ...	1	.002	3	.029	.18	7.8	30	"	L.C.B.	
POOP LIGHTS ... D.B.	1	.003	1	.064	8.0	12.9	210	"	L.C.A.B.	
CARGO LIGHTS ... S.B.	1	.0225	7	.064	40	46	100	"	"	
ARC LAMPS ...										
HEATERS ...										

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		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 TRANSFER PUMP ...										
WINDLASS ...										
WINCHES, FORWARD ...										
WINCHES, AFT ...										
STEERING GEAR—										
(a) MOTOR GENERATOR ...	1	.06	19	.064	40	65	122	250	Van Cambie	L.C.A.B.
(b) MAIN MOTOR ...	1	.06	19	.064	65	122	55		"	"
WORKSHOP MOTOR ...										
VENTILATING FANS SACT BOND	1	.01	7	.044	20	31	230	Rubber	"	
REFRY. MACHINERY SACT BOND	1	.06	19	.064	92	122	90	Van Cambie	"	

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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.

P.Pro. THE SUNDERLAND FORGE & ENGINEERING CO.LTD. Electrical Engineers.

Date 15.10.36.

COMPASSES.

Distance between electric generators or motors and standard compass

100 ft

Distance between electric generators or motors and steering compass

100 ft

The nearest cables to the compasses are as follows:—

A cable carrying 18 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 4 Ampères 6 feet from standard compass 6 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 led degrees on any course in the case of the standard compass, and led degrees on any course in the case of the steering compass.

FOR WILLIAM SUNDERLAND & CO., LTD.

Builder's Signature.

Date 16/10/36.

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 materials and workmanship were found good and sound.

17/10/36

Noted

Ymn

22.10.36

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... £ 28 : 10 : 0

When applied for,

at 28/10/36

Travelling Expenses (if any) £

6/-

When received,

10/10/36

Committee's Minute GLASGOW 20 OCT 1936

Assigned

SEE ACCOMPANYING MACHINERY REPORT.



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Foundation