

Rpt. 13.

No. 15894

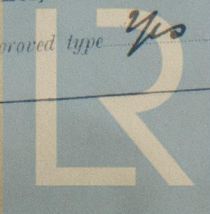
REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 22/12/1936 When handed in at Local Office Haverton Hill on Dues Port of Middlesbrough
 No. in Survey held at and West Hartlepool Date, First Survey 19th Nov. 1936 Last Survey 23rd Dec. 1936
 Reg. Book. Supp. (Number of Visits 5)
87732 on the S.S. "Cyprian Prince" Tons { Gross 1995
 Net 1010
 Built at Haverton Hill on Dues By whom built Furness S.B. Co. Ltd. Yard No. 263 When built 1936
 Owners Prince Line Ltd. Port belonging to London
 Electric Light Installation fitted by Furness S.B. Co. Ltd. Contract No. 263 When fitted 1936
 Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Double wire
 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 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 Engine room starboard side, is the ventilation in way of the generators satisfactory Yes are they clear of all inflammable material Yes if situated near unprotected — and — Yes
 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 starboard side
 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 — 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 —, 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. sws. & D.P. fuses on dynamo mains; D.P. C.O. sws. & D.P. fuses on outgoing circuits
 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 3 ammeters 2
 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 Flamps coupled to E through S.P. linked sws. & fuses Switches, Circuit Breakers and Fusible Cut-outs, Yes have the reversed —
 do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Yes



Lloyd's Register Foundation

current protection devices been tested under working conditions —

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 — **Fail of Pressure**, state maximum between bus bars and

any point of the installation under maximum load *4.1 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, lavatories, bathrooms and lavatories lead covered or run in conduit *Yes*

Support and Protection of Cables, state how the cables are supported and protected *Cables in engine room and machinery*

spaces lead covered armoured & braided clipped up; lead covered and braided cables in accom.

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 *Home made*

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

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 —

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 —

Arc 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*, 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 — and —

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 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	30	110	273	550	Single cylinder enclosed type steam engine		
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	.25	37	.093	273	309	25	V.C.	L.C.A.B. Single
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER MOTOR GENERATOR ...									
ENGINE ROOM ...	1	.01	7	.044	20	31	10	V.I.R.	L.C.A.B. Twin
BOILER ROOM ...	1	.01	7	.044	20	31	10	V.I.R.	L.C.A.B. Twin
AUXILIARY SWITCHBOARDS ...	1	.01	7	.044	6	31	300	8°	8° 8°
Navigation	1	.01	7	.044	20	31	20	8°	8° 8°
Cargo Fans	1	.0225	7	.064	40	46	25	8°	8° Single
Cargo Lighting	1	.06	19	.064	80	83	300	8°	8° 8°
Staring Sear	1	.06	19	.064	63	83	120	8°	8° 8°
Refiq. Maching.	1	.0225	7	.064	27	46	200	8°	8° 8°
ACCOMMODATION State Room	1	.0225	7	.064	30	46	250	8°	8° 8°
Pantry	1	.01	7	.044	18	31	130	8°	8° Twin
Offrs. & Imps. Accom	1	.0045	7	.029	10	18.2	340	8°	8° Twin
Prop. Accom.	1	.01	7	.044	15	31	190	8°	8° 8°
WIRELESS ...	1	.0015	1	.044	4	6.1	350	8°	8° 8°
SEARCHLIGHT ...	1	.0015	1	.044	4	6.1	50	8°	8° 8°
MASTHEAD LIGHT ...	1	.0015	1	.044	4	6.1	20	8°	8° 8°
SIDE LIGHTS ...	1	.0015	1	.044	4	6.1	560	8°	8° 8°
COMPASS LIGHTS ...	1	.0015	1	.044	4	6.1			
STERN LIGHTS ...	1	.0015	1	.044	4	6.1			
CARGO LIGHTS ...	1	.003	1	.064	7.5	12.9	30	8°	8° 8°
ARC LAMPS ...	1	.003	1	.064	7.5	12.9	30	8°	8° 8°
HEATERS Panting	1	.003	1	.064	7.5	12.9	30	8°	8° 8°

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 ...	1	1	.06	19	.064	80	83	300	V.I.R.	L.C.A.B. Single
(b) MAIN MOTOR ...	1	1	.06	19	.064	80	83	30	8°	8° 8°
WORKSHOP MOTOR ...	3	1	.01	7	.044	12	31	380	8°	8° Twin
VENTILATING FANS Forward	2	1	.003	1	.064	8	12.9	150	8°	8° 8°
Refiq. Compressor	3	1	.01	7	.044	22.5	31	20	8°	8° 8°
8° Pump	3	1	.003	1	.064	6	12.9	150	8°	8° 8°
8° Fan	1	1	.0015	1	.044	1.5	6.1	120	8°	8° 8°

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. S. Glover.

Electrical Engineers.

Date *24th Dec 1936.*

COMPASSES.

Distance between electric generators or motors and standard compass *78 feet*

Distance between electric generators or motors and steering compass *74 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.1* Ampères *on the* ~~foot from~~ standard compass *5* feet from steering compass.

A cable carrying *.1* Ampères *6* feet from standard compass *on the* ~~foot 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 *all* course in the case of the standard compass, and *Nil* degrees on *all* course in the case of the steering compass.

J. W. Glover
Jr. Furness Shipbuilding Co.

Builder's Signature.

Date *24 Dec 1936.*

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *S.S. "Syrian Prince"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The above installation has been fitted*

out under special survey. The materials used and the workmanship are good. On completion the dynamos, governors, main switchboard, fuses, motor cables and fittings were examined and tested under working conditions and found satisfactory. The insulation resistance of all circuits was found good. This vessel is eligible in my opinion for notation D.F.

Noted

Thun

12.1.37

Total Capacity of Generators *60* Kilowatts.

The amount of Fee ... £ *28 : 10* : *8-1-1937*

Travelling Expenses (if any) £

When received. *1-3-37*

S. Austerson

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI JAN 15 1937

Assigned *See Mdb 15892*



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