

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

20 JAN 1921

Received at London Office

Date of writing Report _____ 19 _____ When handed in at Local Office _____ 19 _____ Port of Belfast

No. in Survey held at Belfast Date, First Survey _____ Last Survey _____ 19 _____
 Reg. Book. _____ (Number of Visits.....) _____

87931 on the STEEL TWIN SC. APAFA Tons { Gross _____ Net _____

Built at Belfast By whom built Harland & Wolff Ltd. Yard No. 695 When built 1926

Owners Apacan S.S. Co. Ltd. Port belonging to Riverpool Contract No. _____ When fitted 1926

Electric Light Installation fitted by Harland & Wolff Ltd.

System of Distribution Two Wire Direct current to distributing Boxes.

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 overload 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, is an adjustable regulating resistance fitted in series with each shunt field yes

Are all terminals accessible and clearly marked yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited yes

Position of Generators Yes. 2 generators in Motor Room Forward Emergency generator in Emergency House. Upper Deck 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 _____ and _____, are the generators protected from mechanical injury and damage from water, steam or oil yes

are their axis of rotation fore and aft yes are the prime movers, and

Earthing, are the bedplates and frames of the generating plant efficiently earthed yes

Main Switch Boards, where placed On Platform Forward End of Motor Room.

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, incombustible non-absorbent materials yes, is all insulation of high dielectric strength and of permanently high insulation resistance yes, if semi-insulating material is used, are all conducting parts connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework yes, and is the frame effectively earthed yes

Are the following fittings as per Rule, viz. :- spacing or shielding of live parts yes

accessibility of all parts yes, absence of fuses on back of board yes, proportion of omnibus bars yes

individual fuses to voltmeter, pilot or earth lamp yes, connections of switches yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches D.P. Overload & Reverse current circuit Breaker with time limits & interlocked equaliser switch for each generator.

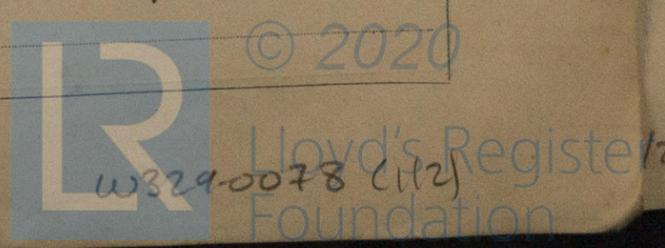
D.P. Overload circuit Breaker on S.P. Switch & D.P. Fuses for each outgoing circuit

Instruments on main switchboard 13 ammeters 2 voltmeters arranged for paralleling purposes.

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

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes



Insulation of Cables, state type of cables, single or twin *Single* are the cables insulated and protected as per Tables III or IV of the Rules *yes*.

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *seven*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 square inch and above provided with soldering sockets *yes*.

Paper Insulated Cables. If cables are paper covered, 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*.

Support and Protection of Cables, state how the cables are supported and protected *Waterproof type hard rubber cable run on purling in accommodation lead covered in motor room.*

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 VI *yes*.

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *—*

Joints in Cables, state if any, and how made, insulated, and protected *Junction Boxes used for all joints*

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 Positions, 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 *All portable fittings, sockets etc not fitted to steelwork of ship are earthed with connection equivalent to working conductor.* 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 *Emergency Dynamo Room upper deck control from Emergency Switchboard fitted in same room. Dynamo direct coupled to Diesel Engine.*

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*, are separate screens provided for the use of oil and electric side lights *yes*.

are separate oil lanterns provided for the mast head lights and side lights *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 *best iron fittings*.

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 *—*

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 else *—*, 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 lubrication arrangements as per Rules *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 axis of rotation fore and aft *yes* *except vertical motors*.

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 *—*

Control Gear and Resistances, are the generator-field and motor speed regulators, starters and controllers constructed 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 *—*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *—*

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	3	200	220	910	200	Diesel Engines		
AUXILIARY						"		
EMERGENCY	1	50	220	227	400	"		
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	6 (part)	.75	91	.103	910	90	Rubber	Lead covered.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	.3	37	.103	227	40	"	"
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS	2	.25	37	.093	226	420	"	Hard Rubber.
	MOTOR ROOM	2	.75	91	.103	450	10	"	Lead covered.
	MOTOR ROOM	2	.75	91	.103	445	22	"	"
	WIRELESS	2	.01	7	.044	11	330	Rubber	Hard Rubber.
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.003	3	.036	5	780	"	"
	SIDE LIGHTS	2	.003	3	.036	5	120	"	Lead covered.
	COMPASS LIGHTS	2	.003	3	.036	5	120	"	"
	POOP LIGHTS								
	CARGO LIGHTS	2	.0145	7	.052	.25	1020	"	Hard Rubber.
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	.06	19	.064	80	200	Rubber	Lead covered.
	MAIN BILGE LINE PUMPS	2	.04	19	.032	48	246	"	"
	FIRE SERVICE PUMP	1	.1	19	.083	112	180	"	"
	EMERGENCY BILGE PUMP	1	.06	19	.064	72	540	"	Lead covered A&B.
	SANITARY PUMP	2	.06	19	.064	72	168	"	Lead covered.
	CIRC. SEA WATER PUMPS	4	.06	19	.064	74	126	"	"
	CIRC. FRESH WATER PUMPS	2	.04	19	.032	62	273	"	"
	AIR COMPRESSOR	2	.6	91	.093	480	250	"	"
	FRESH WATER PUMP	1	.007	7	.036	18	228	"	"
	ENGINE TURNING GEAR	2	.0225	7	.064	40	270	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	4	.2	37	.083	180	246	"	"
	OIL FUEL TRANSFER PUMP	2	.0145	7	.052	32	233	"	"
	WINDLASS	1	.2	37	.083	220	375	"	Hard Rubber.
	WINCHES, FORWARD	1	.1	19	.083	130	108	"	"
	WINCHES, AFT	2	.06	19	.064	94	108	"	"
	STEERING GEAR	2	.2	37	.083	180	650	"	"
	WORKSHOP MOTOR	2	.003	3	.036	8	130	"	Lead covered.
	VENTILATING FANS	19	.003	3	.036	12	300	"	Hard Rubber.
		1	.01	7	.044	30	330	"	"
		2	.0225	7	.064	40	200	"	Lead covered.
	Winches Aft	4	.1	19	.083	130	108	"	Hard Rubber.
	Boat B.	2	.06	19	.064	81	142	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
 The foregoing is a correct description.



Electrical Engineers.

Date 13/12/26

COMPASSES.

Distance between electric generators or motors and standard compass 100 ft to generators, 30 ft nearest motor.
 Distance between electric generators or motors and steering compass 97 " " " 31 " " " "

The nearest cables to the compasses are as follows:—

A cable carrying 26 Ampères 6 feet from standard compass 6 feet from steering compass.
 A cable carrying 27 Ampères 33 feet from standard compass 32 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

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.

Builder's Signature. Date

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

General Remarks (State quality of workmanship, opinions as to class, &c.)

The electric installation of this vessel has been fitted under special survey and in accordance with the rules. The workmanship and materials are good. Tests made under working and overload conditions were satisfactory. The vessel is eligible, in my opinion, for notation "Electric Light"

It is submitted that this vessel is eligible for THE RECORD. Elec.light.

W.D.
31/1/27

Total Capacity of Generators 650 Kilowatts

The amount of Fee ... £ 47. 15 : : When applied for, 24-1-27
 See Macky & S. Repat.
 Travelling Expenses (if any) £ : : When received, 4-2-27

R. Lee Annes
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 1 FEB 1927

Assigned *Elec Light*

111,921.—Transfer.
 (The Surveys are requested not to write on or below the space for Committee's Minute.)

