

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 18 APR 1928

Date of writing Report 23.3.1928 When handed in at Local Office 14.4.1928 Port of GLASGOW.

No. in Survey held at GREENOCK. Date, First Survey 3.10.27 Last Survey 16.3.28 19  
Reg. Book. (Number of Visits 15)

140542 on the M.V. DRIDO Tons

Built at ARROSSAN. By whom built ARROSSAN DY. LTD. Yard No. 337 When built 1928

Owners THE AFRICAN S.N. CO. LTD. Port belonging to LONDON.

Electric Light Installation fitted by MESSRS CAMPBELL & ISHERWOOD LTD. Contract No. 337 When fitted 1928

System of Distribution Double Wire

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 rating 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, clearly marked, and furnished with sockets yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes.

Position of Generators Engine Room port Side. Are the lubricating arrangements of the generators as per Rule yes.

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 port Side upper platform

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 yes.

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 yes and yes.

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.

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.

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, 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. Circuit.

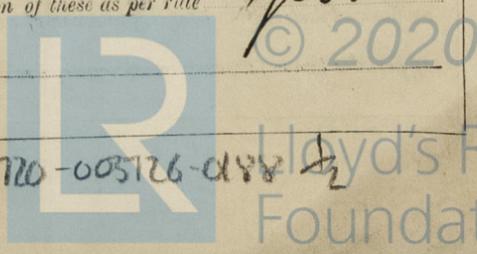
breakers with interlocked equalizing switch fitted with no Volt + reverse current release coils.

Instruments on main switchboard 3 ammeters 2 voltmeters synchronising device 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.

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 or V of the Rules. No.

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load. 1 Volt.

**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets. Ypo.

**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. Ypo.

**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. Ypo.

**Support and Protection of Cables,** state how the cables are supported and protected. In Insulators fitted in Iron Casings Lead covered cables fitted in Iron Trays

If cables are run in wood casings, are the casings and caps secured by screws Ypo., are the cap screws of brass Ypo., are the cables run in separate grooves Ypo. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII Ypo.

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

**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. Ypo.

**Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed Ypo. state the material of which the bushes are made Lead & Fibre

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas. None.

are their connections made as per Rule Ypo.

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule Ypo.

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven. None.

**Navigation Lamps,** are these separately wired Ypo., controlled by separate switch and separate fuses Ypo., are the fuses double pole Ypo. are the switches and fuses grouped in a position accessible only to the officers on watch Ypo. has each navigation lamp an automatic indicator as per Rule Ypo.

**Secondary Batteries,** are they constructed and fitted as per Rule Ypo.

**Fittings,** are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight Ypo. 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 No. are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected No. how are the cables fixed Ypo. where are the controlling switches situated Ypo.

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

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

**Motors,** are their working parts readily accessible Ypo., are the coils self-contained and readily removable for replacement Ypo. are the brushes, brush holders, commutators and lubricating arrangements as per Rule Ypo. are the motors placed in well-ventilated compartments Ypo. inflammable gases cannot accumulate and clear of all inflammable material Ypo. are they protected from mechanical injury and damage from water, steam or oil Ypo. are their axes of rotation fore and aft Ypo. if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, fire ventilated, forced draught, drip or flame proof type Ypo. enclosed, if not of this type, state distance of the combustible material horizontally or vertically above the motors Ypo. and Ypo.

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

**Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule Ypo.

**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 Ypo.

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

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	3	65	220	450	360	Diesel engines by W. H. Allum & Co.	Diesel Oil	below 150° F.	
AUXILIARY									
EMERGENCY									
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, Amps.	Approximate Length, (Lead and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
3.	MAIN GENERATOR	2	.302	37	.083	296	40	Cambrie	Lead Covered
	EQUILISED CONNECTIONS	1	.101	19	.088	150	35	do	do
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION LIGHTING	2	.06	19	.064	66	90	Macerite	Iron Casings
	WIRELESS	2	.004	4	.036	15	180		
	SEARCHLIGHT	2	.003	3	.036	5	320		
2	MASTHEAD LIGHT	2	.003	3	.036	10	60		
2	SIDE LIGHTS	2	.003	3	.036	5	40		
3	COMPASS LIGHTS	2	.003	3	.036	15	30		
	POOP LIGHTS	2	.004	4	.036	10	80		
2	CARGO LIGHTS	2	.003	3	.036	10	80		
	ARC LAMPS	2	.101	19	.083	85	250		
	HEATERS								

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amps.	Approximate Length, (Lead and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
13HP	BALLAST PUMP	1	.022	4	.064	46	40	Cambrie	Lead Covered
6HP	MAIN BILGE LINE PUMPS	1	.007	4	.036	21	50	do	do
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
13HP	CIRC. SEA WATER PUMPS	1	.022	4	.064	46	50	do	do
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
1HP	FRESH WATER PUMP	1	.003	3	.036	4	50	do	do
10HP	ENGINE TURNING GEAR	1	.0146	4	.052	35	40	do	do
	ENGINE REVERSING GEAR								
10HP	LUBRICATING OIL PUMPS	2	.0146	4	.052	35	35	do	do
5HP	OIL FUEL TRANSFER PUMP	1	.0045	4	.029	18	40	do	do
40HP	WINDLASS	1	.1478	37	.072	142	230	Macerite	Iron Casings
35HP	WINCHES, FORWARD	4	.5	61	.103	470	330	do	do
35HP	WINCHES, AFT	5	.5	61	.103	470	200	do	do
	STEERING GEAR								
	(a) MOTOR GENERATOR	2	.0284	19	.044	52	45	Cambrie	Lead Covered
15HP	(b) MAIN MOTOR	1	.003	3	.036	4	60	do	do
1HP	WORKSHOP MOTOR	1	.003	3	.036	4	60	do	do
3HP	VENTILATING FANS	2	.0045	4	.029	12	100	do	do

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.

CAMPBELL & ISHERWOOD, LTD.

*Campbell*

Electrical Engineers.

Date *10/4/28.*

COMPASSES.

Distance between electric generators or motors and standard compass *65 ft.*

Distance between electric generators or motors and steering compass *63 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying *2.8* Ampères *9* feet from standard compass *8* feet from steering compass.

A cable carrying *.15* Ampères *9* feet from standard compass *1* feet from steering compass.

A cable carrying *.15* Ampères *1* feet from standard compass *9* 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.

FOR AND ON BEHALF OF THE SHIPYARD, LIMITED.

*A. Fletcher*

Builder's Signature.

Date *6/4/28.*

GENERAL MANAGER

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.)

*This installation*

*has been fitted on board under special survey. Tested under full working conditions & found satisfactory. The materials & workmanship were found to be good and sound.*

*It is submitted that this vessel is eligible for THE RECORD.*

*Elec. Light.*

*J.S.A.*

*23/4/28.*

Total Capacity of Generators *195* Kilowatts.

The amount of Fee ... .. £ *36.5.0*

When applied for, *17/3/28*

Travelling Expenses (if any) £ *1.1.0*

When received, *16.5.28*

*J.S. Rankin*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 17 APL 1928*

Assigned *Elec. Light.*

*W.M.*

*a.b.*  
*11/4/28*

1m.127.—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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