

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

7 SEP 1927

Received at London Office

Date of writing Report 27-8-1927 When handed in at Local Office 2.9.27 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 24th June Last Survey 24th Aug 1927
Reg. Book. 40508 on the M.V. "Dunkwa" (Number of Visits...)

Built at Dumbarton By whom built Archd. McMillan & Son Ltd Yard No. 735 When built 1927
Tons { Gross 3789.47
Net 1996.37

Owners The British & African Steam Navigation Co. Ltd Port belonging to Liverpool

Electric Light Installation fitted by Archd. McMillan & Son Ltd Contract No. 735 When fitted 1927

System of Distribution Two 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

Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators Port side of Motor Room. Yes, are they clear of all inflammable material 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 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 Switchboard Recess above Generators on Port side 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 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 and

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

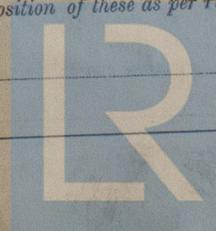
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches Generators (3) each having one D.P. Circuit Breaker with equalizer switch. Outgoing Circuits, 2-250 amp, 1-200 amp, 1-150 amp, 3-100 amp, & 3-25 amp D.P. switches & fuses.

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



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Cables: Single, twin, concentric, or multicore Single & twin are the cables insulated and protected as per Tables IV or V of the Rules. Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5 volts

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 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 No paper insulated cable used

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, upstokes 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 Clipped to beams, plates etc & protected by iron plates where necessary.

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, if lights are fitted, are the cables and fittings in accordance with the special requirements No lights fitted

Joints in Cables, state if any, and how made, insulated, and protected No 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 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 All fittings fixed on wood, bulkheads are earthed with 0.001 Sec. Area Copper wire.

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 4 lights in all, 2 over Generators, 1 at Boiler & 1 in Motor Room entrance, fed from Battery and controlled by switch in Motor Room entrance.

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

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and where 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 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 led Yes

where are the controlling switches situated Yes

Searchlight Lamps, No. of None, whether fixed or portable , are their fittings as per Rule

Arc Lamps, other than searchlight lamps, No. of None, 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

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 None fitted

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 Flash point of oil 180° F.

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office " " " " 180° F

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	295	300	Diesel Engine	Oil	180° 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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	4	0.14780	34	0.072	295	92	" "	Lead covered
	EQUALISER CONNECTIONS	1	0.14780	34	0.072	295	92	" "	" "
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION	2	0.11680	34	0.064	126	120	" "	" "
	Motor Room Lights P.	2	0.00701	4	0.036	8.5	54	" "	" "
	" " " S	2	0.00701	4	0.036	5.5	160	" "	" "
	Oil Tank Heaters	2	0.03960	4	0.052	34	104	" "	" "
	WIRELESS	2	0.00701	4	0.036	10	280	" "	" "
	SEARCHLIGHT	2	0.00299	3	0.036	46	480	" "	Lead covered & Arm'd
	MASTHEAD LIGHT	2	0.00299	3	0.036	46	50	" "	" "
	SIDE LIGHTS	2	0.00299	3	0.036	46	50	" "	Lead covered
	COMPASS LIGHTS	2	0.00194	3	0.029	3	18	" "	" "
	POOP LIGHTS	2	0.00194	3	0.029	2.4	130	" "	" "
	CARGO LIGHTS	2	0.00194	3	0.029	4.6	130	" "	" "
	ARC LAMPS	2	0.11680	34	0.064	126	40	" "	" "
	HEATERS								

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	0.03960	4	0.052	52	102	" "	Lead covered
	MAIN BILGE LINE PUMPS	1	0.00701	4	0.036	24	66	" "	" "
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS	1	0.0046	4	0.064	46	120	" "	" "
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR	1	0.02214	4	0.064	40	102	" "	" "
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	0.06000	19	0.064	40	38	" "	" "
	OIL FUEL TRANSFER PUMP	1	0.03960	4	0.052	31.5	42	" "	Lead covered & Arm'd
	WINDLASS	1	0.19640	34	0.083	166	200	" "	" "
	WINCHES, FORWARD	4	0.14780	34	0.072	142	264	" "	" "
	WINCHES, AFT	5	0.14780	34	0.072	142	232	" "	" "
	STEERING GEAR								
	(a) MOTOR GENERATOR	1	0.03960	4	0.052	59	304	" "	" "
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								Lead covered
	VENTILATING FANS 24"	2	0.00701	4	0.036	11	50	" "	Lead covered
	Refrigerating motor	1	0.00701	4	0.036	21	90	" "	" "
	Drilling machine	1	0.00299	3	0.036	9	84	" "	" "
	Lathe	1	0.00299	3	0.036	4	104	" "	" "
	Oil Purifier	1	0.00299	3	0.036	10	104	" "	" "

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.

ARCHD. McMILLAN & SON, LTD.

Garrick
Director

Electrical Engineers.

Date 29th Aug. 1927

COMPASSES.

Distance between electric generators or motors and standard compass 75 feet
 Distance between electric generators or motors and steering compass 72 feet
 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 all the courses in the case of the standard compass, and Nil degrees on all the courses in the case of the steering compass.

ARCHD. McMILLAN & SON, LTD.

Garrick
Director

Builder's Signature.

Date 29th Aug. 1927

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 and found satisfactory. The workmanship was found to be good and sound.

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

J.W.D.
7/9/27

Total Capacity of Generators 195 Kilowatts.

The amount of Fee ... £ 36.5.0

Travelling Expenses (if any) £ 8.9.27

Committee's Minute GLASGOW 6 - SEP 1927

Assigned Elec. Light.

J. Rankin
Surveyor to Lloyd's Register of Shipping.

A.L.
3/9/27

Im. 1.26.—Transfer. (The Surveys are requested not to write on or below the space for Committee's Minute.)



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