

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 27 MAR 1948

Date of writing Report 18.3.48 When handed in at Local Office 24th March 1948 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 16.9.47 Last Survey 17.3.1948
Reg. Book. (Number of Visits 19)
on the S.S. "MATADIAN" Tons {Gross 6246 Net 3544

Built at Sunderland By whom built Sir James Laing & Sons Ltd Yard No. 776 When built 1948

Owners United Africa Co. Ltd Port belonging to Freetown, West Africa

Electrical Installation fitted by Sunderland Forge & Engineering Co. Ltd Contract No. 776 When fitted 1948

Is vessel fitted for carrying Petroleum in bulk Yes Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No.

Have plans been submitted and approved Yes System of Distribution Air wire insulated Voltage of supply for Lighting 110

Heating Power 110 Direct or Alternating Current, Lighting Yes Power 110 If Alternating Current state periodicity Prime Movers,

has the governing been tested and found as per Rule when full load is suddenly thrown on and off Yes Are turbine emergency governors fitted with a

trip switch as per Rule Generators, are they compound wound Yes, are they level compounded under working conditions Yes,

if not compound wound state distance between generators and from switchboard Where more than one generator is fitted are they

arranged to run in parallel No, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per rule Yes Are the lubricating arrangements and the construction

of the generators as per rule Yes Position of Generators on raised platform off of Main Engine Room

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material Yes, if situated

near unprotected combustible material state distance from same horizontally and vertically, are the generators protected from mechanical

injury and damage from water, steam and oil Yes, are the bedplates and frames earthed Yes, and the prime movers and generators in metallic

contact Yes Switchboards, where are main switchboards placed on angle framework at aft E.D. bulkhead.

are they in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam

and oil Yes, if situated near unprotected combustible material state distance from same horizontally and vertically, what insulation

material is used for the panels Heavy "Kindanyo" if of synthetic insulating material is it an Approved Type Yes, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule Is the frame effectually earthed Yes

Is the construction as per Rule Yes, including accessibility of parts Yes, absence of fuses on the back of the board Yes, individual fuses

to pilot and earth lamps, voltmeters, etc. Yes locking of screws and nuts Yes, labelling of apparatus and fuses Yes, fuses on the "dead"

side of switches Yes Description of Main Switchgear for each generator and arrangement of equaliser switches a double-pole, air-

break circuit breaker with o/p trips

and for each outgoing circuit a double pole, double throw knife switch and double-pole fuse.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 2

ammeters 2 voltmeters synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection Earth Testing, state means provided E lamps connected to E through bus & fuses

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type Yes, are all fuses labelled as

per Rule Yes If circuit breakers are provided for the generators, at what overload current did they open when tested 57, are the reversed current

protection devices connected on the pole opposite to the equaliser connection, have they been tested under working conditions, and at what current

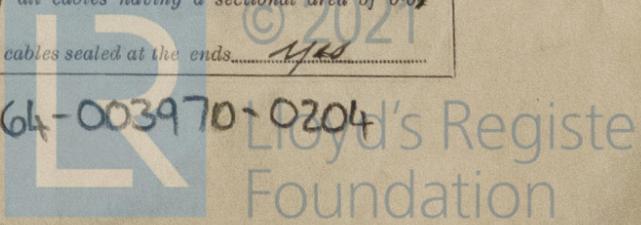
did they operate Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Yes

Cables, are they insulated and protected as per the appropriate Tables of the Rules Yes, if otherwise than as per Rule are they of an approved type

state maximum fall of pressure between bus bars and any point under maximum load 76.6, are the ends of all cables having a sectional area of 0.01

square inch and above provided with soldering sockets Yes Are paper insulated and varnished cambric insulated cables sealed at the ends Yes

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with insulating compound 446 or waterproof insulating tape 446. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage 446, are cables laid under machines or floorplates 446, if so, are they adequately protected 446. Are cables in machinery spaces, galleys, laundries, etc., lead covered 446 or run in conduit 446. State how the cables are supported and protected Train feeds in steel pipes along decks: in accommodation, feeds are L.C.B. in section Panels & D.B.'s. Hence in L.C.B. to sub-panels and protected as required by metal or wood guards. Machinery spaces, L.C.A. on the surface.

Are all lead sheaths, armoring and conduits effectually bonded and earthed 446. Refrigerated chambers, are the cables and fittings as per Rule 446. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands 446, where unarmoured cables pass through beams, etc., are the holes effectively bushed 446 and with what material Lead or felt. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule 446. Emergency Supply, state position 446 and method of control 446.

Navigation Lamps, are they separately wired 446 controlled by separate double pole switches 446 and fuses 446. Are the switches and fuses in a position accessible only to the officers on watch 446, is an automatic indicator fitted 446. Secondary Batteries, are they constructed and fitted as per Rule 446, are they adequately ventilated 446 what is the battery capacity in ampere hours 446.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof 446. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present 446, if so, how are they protected Wipe Knockproof the fittings on deck. "Kodit" like is approved in combustible spaces. and where are the controlling switches fitted in open quarters, are all fittings suitably ventilated 446.

are all fittings and accessories constructed and installed as per Rule 446. Searchlight Lamps, No. of 446, whether fixed or portable 446, are their fittings as per Rule 446. Heating and Cooking, is the general construction as per Rule 446.

are the frames effectually earthed 446, are heaters in the accommodation of the convection type 446. Motors, are all motors constructed and installed as per Rule 446 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil 446, if situated near unprotected combustible material state minimum distance from same horizontally 446 and vertically 446. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment 446.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing 446. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule 446. Control Gear and Resistances, are they constructed and fitted as per Rule 446. Lightning Conductors, where required are they fitted as per Rule 446. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with 446, are all fuses of the cartridge type 446.

are they of an approved type 446. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships 446. Are the cables lead covered as per Rule 446. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule 446, are they suitably stored in dry situations 446. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory 446.

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	272	500	Abnau Engines		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	1.	30	2	19/083	272	382	20	Y.C. L.C.
" " EQUALIZER	2.	30	2	19/083	272	382	24	Y.C. L.C.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...							
Middle Section Panel P. SB.2	1	37/103	198	385	590	Y.C.	L.C.A.
W.T.7 Navigation Station - SB.1	1	19/083	25	191	680	"	"
Aft Lighting Station Panel SB.3	1	19/052	63	104	160	"	"
Aft Port " " SB.4	1	19/052	83	104	160	"	"
Large Lighting " " SB.5	1	7/044	16	31	160	V.I.R.	"
Workshop " " SB.6	1	19/052	51	104	126	Y.C.	"
Engine Room Lighting S.P. SB.7	1	19/052	32	104	16	"	"
Store Room Lighting 1st	2	19/083	-	382	108	"	"
" " 2nd	2	19/083	-	382	158	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	15	46	60	V.I.R.	L.C.
NAVIGATION LIGHTS	1	1/064	5	10	12	"	"
LIGHTING AND HEATING	1	1/064	-	10	90	"	"
Heating Bridge Lighting D.1 off SB.2	1	7/036	9.7	24	110	"	"
Heater " " D.2	1	7/036	17	24	74	"	"
Heater " " D.3.P.	1	7/044	25	24	40	"	"
do. " " D.4.S.	1	7/044	24	31	64	"	"
do. " " D.5.P.	1	7/044	28	31	32	"	"
do. " " D.6.S.	1	7/044	27	31	62	"	"
Temp Lighting Port D.7 off SB.3	1	7/044	23	31	76	"	"
do. Star D.8	1	7/036	20	24	96	"	"
do. Aft D.9	1	7/044	19	31	54	"	"
Aft Large D.10 off SB.5	1	1/064	5	10	76	"	"
Port " D.11	1	7/044	9	31	520	"	L.C.B.
Engine Room Lighting D.13 off SB.7	1	7/036	16	24	10	"	"
do. " D.15	1	7/036	16	24	12	"	"
Mid. Lighting D.12 off SB.2	1	7/036	5	24	240	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.					
Heating Bridge - Port	1	2	1	7/036	18	24	60 V.I.R. L.C.
" " Star	1	2	1	7/036	18	24	90 " "
Painting Workshop Fan	1	2	1	1/064	3	10	50 " "
Forward Bulk Aft Port	1	1.25	1	7/029	13.2	15	30 " "
" " Star	1	1.25	1	7/029	13.2	15	70 " "
Galley Exhaust Fan	1	2	1	1/064	3	10	108 " "
Fresh Water Pump	1	1	1	7/036	9	24	156 " L.C.A.
Distilling Machine	1	1.5	1	7/036	14	24	28 " "
Lathe Motor	1	2	1	7/036	18	24	80 " "
Grinder " "	1	1	1	7/036	9	24	20 " "
Refrigerating Fan	1	2	1	3/029	3	8	70 " "

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

Sunderland Forge & Co. Ltd.
J. J. Green

Electrical Engineers.

Date 19-3-1948

COMPASSES.

Minimum distance between electric generators or motors and standard compass 20'

Minimum distance between electric generators or motors and steering compass 19'

The nearest cables to the compasses are as follows:—

A cable carrying 15 Ampères 10 feet from standard compass on the feet from steering compass.

A cable carrying 15 Ampères on the feet from standard compass 10 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 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.

Builder's Signature Date 22.3.48

Is this installation a duplicate of a previous case No. If so, state name of vessel

Plans. Are approved plans forwarded herewith No. If not, state date of approval 21.10.47.

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of this vessel has been installed under special survey in accordance with the approved plans and the "Rules for Electrical Equipment". The materials and workmanship are good. Upon completion the equipment operated satisfactorily on load and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a class vessel.

Noted
A. AB.

Total Capacity of Generators (2x30) 60 Kilowatts.

The amount of Fee £49.0.0

Travelling Expenses (if any) £

When applied for, will be 10
When received, 10

Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 30 APR 1948

Assigned See F.E. mch. rpt.

MADE AND PRINTED IN ENGLAND. (The Surveyors are requested not to write on or below the space for Committee's Minutes.)



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