

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

17 AUG 1947

Date of writing Report. 28<sup>th</sup> July 47. When handed in at Local Office. 30. 7. 47. Received at London Office.

No. in Survey held at Walker-on-Tyne. Reg. Book. 85815 on the S.S. "ASHANTIAN". Date, First Survey (1746) Dec. 2. Last Survey July 28 1947. (Number of Visits 13)

Built at Newcastle. By whom built Shipbuilding Corp. Ltd. (Tyne Branch). Yard No. 14. Tons Gross 5123.40 Net 2854.77. Owners United Africa Co. Ltd. Port belonging to London. When built 1944.

Electrical Installation fitted by Shipbuilding Corp. (Tyne Branch) Ltd. Contract No. —. When fitted 1944. Is vessel fitted for carrying Petroleum in bulk No. Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. No Sub.Sig. No.

Have plans been submitted and approved Yes. System of Distribution Two Wire - Insulated. Voltage of supply for Lighting 110. Heating — Power 110 Direct or Alternating Current, Lighting D.C. Power D.C. 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 In 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 Near generators.

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 Sindanyo, 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 Double Pole Circuit Breaker with Overload and Low Volt Releases.

and for each outgoing circuit Double Pole Changeover Switch with a fuse on each insulated pole.

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

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 150% of I<sub>n</sub>, 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 4.3 Volts, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the ends Yes.

with insulating compound No or waterproof insulating tape Yes. 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 Yes, are cables laid under machines or floorplates Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected Main Cables - V.I.R. in conduit  
Accommodation cables - Lead covered on wood grounds

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

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

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present No, if so, how are they protected -.

and where are the controlling switches fitted -, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of -, whether fixed or portable -, are their fittings as per Rule -. Heating and Cooking, is the general construction as per Rule -.

are the frames effectually earthed -, are heaters in the accommodation of the convection type -. Motors, are all motors constructed and installed as per Rule Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally - and vertically -. 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 -.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing -. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule -. Control Gear and Resistances, are they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule Yes. 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 -, are all fuses of the cartridge type -.

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

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	15	110	136	550	STEAM ENGINE	-	
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	15	1	19/083	136	191	40	V.C.	IN CONDUIT.
" " EQUALISER								
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							
Shemotank S.B.	1	19-083	78	118	112	V.I.R.	In Conduit.
Aft Accommodation S.B.	1	19-083	40.8	118	96	V.I.R.	In Conduit.
Midship Accommodation S.B.	1	19-083	62.7	118	210	V.I.R.	In Conduit.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS	1	7-064	20	46	220	V.I.R.	In Conduit + I.C.
NAVIGATION LIGHTS	1	7-044	1.9	31	220	V.I.R.	In Conduit + I.C.
LIGHTING AND HEATING							
Crew Lighting Aft D.B.	1	7-064	34.0	46	248	V.I.R.	In Conduit.
Engineers Accommodation Port	1	7-036	22.0	24	12	V.I.R.	In Conduit.
Engineers Accommodation Star	1	7-036	18.0	24	12	V.I.R.	In Conduit.
Aft Messhouse Cargo Stg.	1	7-036	10.2	24	194	V.I.R.	In Conduit.
Engine + Boiler Rooms Stg.	1	7-064	30	46	40	V.I.R.	In Conduit.
Fore Messhouse + Forecastle Stg.	1	7-044	19	31	205	V.I.R.	In Conduit.
Officers Lighting	1	7-044	23	31	30	V.I.R.	Lead Covered.
Midship Accom. Stg. Port	1	7-036	18	24	20	V.I.R.	Lead Covered.
Midship Accom. Stg. Star	1	7-036	22	24	20	V.I.R.	Lead Covered.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	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.			
Accom. Shemotank Fan Motor	3	3	1	7-064	26	46	326	V.I.R.	In Conduit.
Domestic Refrig. Motor	1	2 1/2	1	7-064	23	46	206	V.I.R.	In Conduit.

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.

For and on behalf of  
SHIPBUILDING CORPORATION LIMITED (THE BRAND)

*Alphar*

Electrical Engineers.

Date *28 July 1947*

GENERAL DANGERS

COMPASSES.

Minimum distance between electric generators or motors and standard compass *30* feet.

Minimum distance between electric generators or motors and steering compass *32* feet.

The nearest cables to the compasses are as follows:—

A cable carrying *0.14* Ampères *6* feet from standard compass *inside* feet from steering compass.

A cable carrying *0.14* Ampères *inside* feet from standard compass *6* 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 *Every* course in the case of the standard compass, and *Nil* degrees on *Every* course in the case of the steering compass.

*Alphar*

Builder's Signature.

Date *28 July 1947*

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 *24<sup>th</sup> February 1947*

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

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 in accordance with the Society's Rules and Regulations and the arrangements are in accordance with or equivalent to those shown on the approved plans.

The materials used are of good quality and the workmanship is satisfactory. On completion the insulation resistance of all circuits was above Rule Requirements and the generator operated on load and governing trials with satisfactory results. All the requirements of the Ministry of Transport Specification have been carried out.

The equipment, as installed, is, in my opinion, suitable for a classed vessel.

Noted. *sent 17/9/47*

Total Capacity of Generators *30* Kilowatts.

The amount of Fee ... £ *30: 0: 08* - AUG 1947

Travelling Expenses (if any) £ : : When received.

*R. Stone*

Surveyor to Lloyd's Register of Shipping.

FRI. 19 SEP 1947

Committee's Minute

Assigned *See F.E. mchly opt.*



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5m. 4.38. — Transfer. (MADE AND PRINTED IN ENGLAND.)  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

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