

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

FEB 24 1941

Received at London Office.....

Date of writing Report. 11th Feb. 1941. When handed in at Local Office. 20 FEB 1941 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 3rd Jan. Last Survey 14th Feb. 1941
Reg. Book. Suppt (Number of Visits..... 3.....)

87021 on the M.V. "ANTAR" Tons {Gross. 5222
Net. 3034

Built at Sunderland By whom built Wm. Douglass & Co. Ltd. Yard No. 668 When built 1941

Owners New Egypt & Levant Shipping Co. Ltd. Port belonging to London

Electrical Installation fitted by The Sunderland Eng. Co. Ltd. Contract No. 668 When fitted 1941

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 Double wire Voltage of supply for Lighting 110

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

has the governing been tested and found efficient when the whole 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. Engine room starboard side

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. Engine room starboard side on

aft 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. "Sindomyp" 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. Yes 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

Knife switch and double pole fuse.

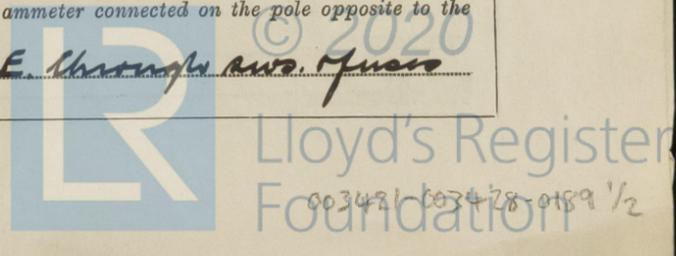
and for each outgoing circuit. Double pole double throw knife switch and double

pole fuse

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

ammeters. Two 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 coupled to E. through two 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, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. 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 Yes, state maximum fall of pressure between bus bars and any point under maximum load 4.4 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 exposed ends Yes with insulating compound Yes 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 V.I.R. cables run in pipe in stowaways and machinery spaces.

L.C. & D.C. cables clipped to surface or on tray in engine room for lighting circuits: L.C. cables clipped to wood ground or to surface in access. Are all lead sheaths, armoring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule Yes. 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 or fibre. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Yes and method of control Yes.

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 Yes, are they adequately ventilated Yes. Fittings, are all fittings on weather decks, in stowholds 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 Yes, if so, how are they protected Yes.

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

are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. 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 Yes and vertically Yes.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Yes. 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 Yes, are all fuses of the cartridge type Yes.

are they of an approved type Yes. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type Yes. 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 megger 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	15	110	136.5	340	Single expansion steam engines		
EMERGENCY	1	18	110			do in harbin refitted 9.4.8		
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 GENERATORS	2 x 15	2	19/064	136.5	166	130	V.I.R.	L.C. & D.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS						
Saloon Ltg. d.b. feed:		1	19/083	69	118	350 V.I.R. In pipe
Eng'rs. Ltg. d.b. feed:		1	7/064	38	46	150 V.I.R. In pipe
Engine Room d.b. feed:		1	19/083	59	118	120 V.I.R. In pipe
Engine Room d.b. feed:		1	7/064	46	46	60 V.I.R. In pipe

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS		1	7/064	15	46	450 V.I.R. In pipe & L.C.
NAVIGATION LIGHTS (off saloon ltg. db.)		1	7/036	4	24	150 V.I.R. L.C.
LIGHTING AND HEATING						Automatic feed with D.P.O.T. cov. from saloon d.b. fitted
Bridge Ltg. db.		1	7/036	18	24	90 V.I.R. L.C.
Battery W.T. feed		1	7/036	15	24	120 V.I.R. L.C.
Eng'rs. Ltg. db.		1	7/036	14	24	150 V.I.R. In pipe
Offrs. Ltg. db.		1	7/036	18	24	15 V.I.R. L.C.
Off. Cargo Ltg. db.		1	7/036	10	24	15 V.I.R. In pipe
Eng'rs. Ltg. db.		1	7/036	14	24	15 V.I.R. L.C.
Eng'rs. Ltg. db.		1	7/036	14	24	120 V.I.R. L.C.
Life Ltg. db.		1	7/064	18	46	570 V.I.R. In pipe
Engine Room Ltg. db.		1	7/064	29	46	120 V.I.R. In pipe

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.
Fixed Drift Pump	1	1.5	7/036	12.3	24	140	V.I.R. In pipe
Oil Separator	3	3	7/044	25.1	31	90	V.I.R. In pipe
Trimming Pump	1	1.5	7/036	13.5	24	120	V.I.R. In pipe
Crane	1	2	7/036	17	24	120	V.I.R. In pipe
Oil Separator	3	3	7/044	25.1	31	140	V.I.R. In pipe
Workshop Motor	1	2	7/036	17	24	40	V.I.R. In pipe
Oil Running Saw	1	5	7/064	41	46	140	V.I.R. In pipe
Refrig. Mtr.	1	2	7/064	17	46	350	V.I.R. In pipe

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.

W. H. Sunderland *Large ship to H.M.S.* Electrical Engineers. Date *13-2-1941*
A. J. Gandy

COMPASSES. *Note: The undermentioned deviations are those due to the electrical installation described herein only.*

Minimum distance between electric generators or motors and standard compass *120 feet*

Minimum distance between electric generators or motors and steering compass *116 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *14* Ampères *on the* feet from standard compass *7* feet from steering compass.

A cable carrying *14* Ampères *7* feet from standard compass *on the* 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.

WILLIAM DOXTOR & SONS, Limited,
E. F. Fletcher Builder's Signature. Date *19/2/41*

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

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 1939/40 Rules. The materials used and the workmanship are good. On completion the equipment was run under working conditions with satisfactory results and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a classed vessel.*

Noted
L. H.
26/2/41

Total Capacity of Generators *30* Kilowatts.

The amount of Fee ... £ *22 : 10* : *1* 9 FEB 1941
 Travelling Expenses (if any) £ : :
 When applied for, 19.....
 When received, 19.....

Santerson
 Surveyor to Lloyd's Register of Shipping.

FRI. 28 FEB 1941

Committee's Minute _____
 Assigned *See H.M.S. 33044*

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)