

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 13th Sept 40 When handed in at Local Office 14-9-40 Port of Middlesbrough

No. in Survey held at Middlesbrough Date, First Survey 28th June Last Survey 4th Aug 1940
Reg. Book. (Number of Visits 6)

S. 87957 on the S.S. "EMPIRE ENDURANCE" ex. "ALSTER" Tons { Gross 8570
Net 5353

Built at Hamburg By whom built Deutsche Schiff-Machf. Werk Vulkan Yard No. When built 1928

Owners Ministry of Shipping Port belonging to Middlesbrough

Electrical Installation fitted by Algemeine Elektricitats Gesellschaft Contract No. When fitted 1928

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. Yes
holds + states in Register Book but not verified on ship

Have plans been submitted and approved Yes System of Distribution Knife wire - hull return Voltage of supply for Lighting 115

Heating Power 115 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

Not checked 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 and the results found as per rule 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 aft

on forward side of E.R. side

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 Marble, if of synthetic insulating material is it an Approved Type , 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 Knife pole knife

switch and knife pole cartridge type fuse

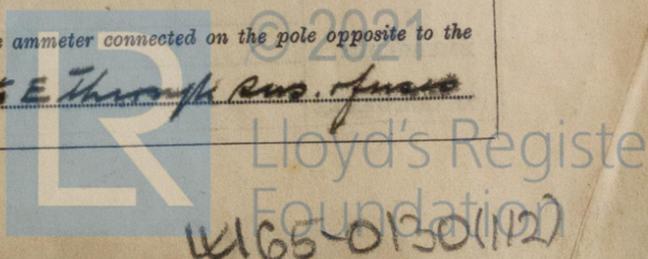
and for each outgoing circuit Knife pole double throw knife switch and knife pole

cartridge type 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 lamp connected to E through Bus of fuses



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Switches, Circuit Breakers and Fuses, are they as per Rule φ, are the fuses an approved type φ, are all fuses labelled as per Rule 7/2, are the reversed current protection devices connected on the pole opposite to the equaliser connection —, have they been tested under working conditions —. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule 7/2.

Cables, are they insulated and protected as per the appropriate Tables of the Rules φ, 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 5.2/10 are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets 7/2. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends — with insulating compound — or waterproof insulating tape —. 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 7/2, are cables laid under machines or floorplates no, if so, are they adequately protected —. Are cables in machinery spaces, galleys, laundries, etc., lead covered 7/2 or run in conduit —. State how the cables are supported and protected L.C.A. cables clipped to surface in machinery spaces and under decks; L.C. cables clipped to surface on wood points in accommodation.

Are all lead sheaths, armouring and conduits effectually bonded and earthed 7/2. 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 7/2, where unarmoured cables pass through beams, etc., are the holes effectively bushed 7/2 and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule 7/2. Emergency Supply, state position — and method of control —.

Navigation Lamps, are they separately wired 7/2 controlled by separate Single pole switches 7/2 and fuses 7/2. Are the switches and fuses in a position accessible only to the officers on watch 7/2, is an automatic indicator fitted 7/2. Secondary Batteries, are they constructed and fitted as per Rule —, are they adequately ventilated —. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof —. 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 7/2, are all fittings and accessories constructed and installed as per Rule 7/2. Searchlight Lamps, No. of One, whether fixed or portable port Run, are their fittings as per Rule —. Heating and Cooking, is the general construction as per Rule —. Motors, are all motors constructed and installed as per Rule 7/2 and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil 7/2, if situated near unprotected combustible material state minimum distance from same horizontally — and vertically —. 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 7/2. Lightning Conductors, where required are they fitted as per Rule —. 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 —. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type —. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule φ, are they suitably stored in dry situations 7/2. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 7/2.

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	115	130	400	2 wks compound steam engine		
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX LENGTH (lead plus reserve-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	2 x 15	1	95 mm ²	130	150	60 x 40	V.I.R.	L.C.A.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus reserve-feet).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS						

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus reserve-feet).	INSULATED WITH.	HOW PROTECTED.		
WIRELESS		1	16 mm ²	15	49	160	V.I.R.	L.C.A.
NAVIGATION LIGHTS		1	2.5 mm ²	7	15.5	180	V.I.R.	L.C.A.
LIGHTING AND HEATING		1	16 mm ²	15	49	135	V.I.R.	L.C.A.
Mid. Accom. + Cargo Ltg. db.		1	10 mm ²	6	38	325	V.I.R.	L.C.A.
Fore. Accom. Ltg. db.		1	10 mm ²	14	38	64	V.I.R.	L.C.A.
Eng. Accom. + Cargo Ltg. db.		1	10 mm ²	7	38	285	V.I.R.	L.C.A.
Aft Accom. + Cargo Ltg. db.		1	16 mm ²	—	49	340	V.I.R.	L.C.A.
Searchlight Feed		1	16 mm ²	13	—	—	V.I.R.	L.C.A.
Engin. + Boiler Room Ltg. db.								Disk fuses on main board.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus reserve-feet).	INSULATED WITH.	HOW PROTECTED.		
Workshop Motor	1	1.7 kw.	1	14 mm ²	16	22.5	60	V.I.R.	L.C.A.

Note φ. Fuses The fuses are of the fused cartridge type very similar to the Siemens or English White Seal type the brass being provided with guard rings to prevent the insertion of incorrect cartridges. Spares There are on board 2 spare main fuse carriers and cartridges and approximately 6 spare fuse carriers and bases for the main outd. circuits. A considerable quantity of distribution board fuse carriers and cartridges were found on the vessel.

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.

Electrical Engineers. Date.....

COMPASSES.

Minimum distance between electric generators or motors and standard compass 114 feet

Minimum distance between electric generators or motors and steering compass 105 feet

The nearest cables to the compasses are as follows:—

A cable carrying 144 Ampères on the feet from standard compass 8 feet from steering compass.

A cable carrying 144 Ampères 8 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 _____

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted _____

The maximum deviation due to electric currents was found to be _____ degrees on _____ course in the case of standard compass, and _____ degrees on _____ course in the case of the steering compass.

Builder's Signature. Date.....

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 foregoing
summary of the electrical equipment of this vessel has been
compiled from the results of a general examination of the
installation and from the details given on the plans found on
the ship and is as far as can be ascertained correct. Details
of the repairs effected are given in Mr. [Name] Report to
16891. The materials used are of good quality and the
workmanship is good and the equipment may, in my
opinion, be considered suitable for a classed vessel.
The plans of the electrical equipment are returned herewith.

Total Capacity of Generators 30 Kilowatts.

The amount of Fee ... £ 7 : 17 : 6

Travelling Expenses (if any) £ : :

When applied for,

.....19.....

When received,

26-10 19 14

[Signature]
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See Mch Rpt 16891

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



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