

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office. 15 SEP 1942

Date of writing Report. 18-8-1942 When handed in at Local Office. Port of Middlesbrough

No. in Survey held at Heaton-Hill-on-Tees Date, First Survey. 27-5-42 Last Survey. 21-8-1942
(Number of Visits) 1

Reg. Book. 73302 on the S/S "EMPIRE LYTTON" Tons { Gross.....
Net.....

Built at Heaton-Hill-on-Tees By whom built Furness Shipbuilding Co. Yard No. 363 When built 1942

Owners. The Ministry of War Transport Port belonging to Middlesbrough

Electrical Installation fitted by Furness Shipbuilding Co. Ltd Contract No. 343 When fitted 1942

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

Have plans been submitted and approved Yes System of Distribution Sub-Wire insulated Voltage of supply for Lighting 110

Heating — Power 110 Direct or Alternating Current Lighting Yes Power of Yes Alternating Current state periodically Prime Movers

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

trip switch as per Rule Yes 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 plant field regulators provided Yes Is the compound winding connected to the negative or positive pole

position Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing No 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 on raised platform aft of

Main engine, 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 raised platform adjacent to main

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 "Insulite" Yes, 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 effectively 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

double-throw quick-break knife switch and double-pole cartridge type

fuse.

and for each outgoing circuit a double-pole, double throw, quick break knife switch and double

pole cartridge type fuse.

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

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 connected to E. ground bars & 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 —, 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 —, 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

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with insulating compound. — 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 floor plates. No, if so, are they adequately protected. — Are cables in machinery spaces, galleys, laundries, etc., lead covered. yes or run in conduit. — State how the cables are supported and protected. All main cables V.C. insulated. In Machinery spaces lead covered and shielded cables clipped to perforated metal tray or bus bars, along bulkheads, etc., clipped to steel troughing, in alternative V.C. L.C.B. cables clipped to wooden boards & protected as necessary. Take outgoing circuits to lighting V.I.T. insulated. 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 effectively 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. yes, if so, how are they protected. In lower deck combustible, or so, "Dustproof" pumproom lighting fittings - cast iron and where are the controlling switches fitted. outside dangerous spaces, are all fittings suitably ventilated. yes, are all fittings and accessories constructed and installed as per Rule. yes. Searchlight Lamps, No. of one pair, 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 stalled 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. none fitted ave motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. none fitted. Have certificates of test for motors under 0 BHP intended for essential services been supplied and the results found as per Rule. — Control Gear and Resistances, are they constructed and ed as per Rule. yes. 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. yes, are all fuses of the cartridge type. yes e they of an approved type. yes. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ps. yes. Are the cables lead covered as per Rule. yes. Spare Gear, if the vessel is for open sea service have spares been provided as per e. yes, are they suitably stored in dry situations. yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested l found satisfactory. yes.

PARTICULARS OF GENERATING PLANT.

GENERATOR CABLE

MOTOR CABLES

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.

FURNESS SHIPBUILDING CO. LIMITED
MACHALESHAW, FARNWICH, LANCASHIRE, ENGLAND
Sole Agents for the Electric Light & Power Co., Ltd., Electrical Engineers. Date 4/9/42

COMPASSES.

Minimum distance between electric generators or motors and standard compass 280'

Minimum distance between electric generators or motors and steering compass 276'

The nearest cables to the compasses are as follows:-

A cable carrying 114 Ampères 7 feet from standard compass on the feet from steering compass.

A cable carrying 115 Ampères 7 feet from standard compass 7 feet from steering compass.

A cable carrying 115 Ampères 7 feet from standard compass 7 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power 4/9/42

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted 4/9/42

The maximum deviation due to electric currents was found to be 7° degrees on course in the case of the standard compass and 7° degrees on course in the case of the steering compass.

FURNESS SHIPBUILDING CO. LIMITED Builder's Signature. Date 4/9/42

Is this installation a duplicate of a previous case 4/9/42 If so, state name of vessel 3/3 "Empire Wikens"

Plans. Are approved plans forwarded herewith No. If not, state date of approval D. 22-9-41. S. 26-9-41

Certificates. Are certificates of test for meters engaged on essential services and generators forwarded herewith 7/9/42

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 Ministry of Shipping Specification and amendments thereto. The materials used are of good quality and design and the workmanship is good. On completion the equipment was operated under load with satisfactory results and the insulation resistance of each circuit was measured and found good. This equipment is in my opinion suitable for a classed vessel.

(The Surveyor is requested not to write on or below the space for Committee's Minute.)
MADE AND PRINTED IN ENGLAND.
Form 4.20 - Transfer.

Total Capacity of Generators (2x25) 50 Kilowatts.

£ 27 10. 0
Specification £ 6. 17. 6
When applied for, 11/9/1942
When received, 15/9/1942
Travelling Expenses (if any) £ : : 10.....

37. 07. 227 226 400 11. 6. 15.
P. D. Ward
Surveyor to Lloyd's Register of Shipping.

TUE. 22 SEP 1942

Committee's Minute

Assigned

See Adm. 28. 17323

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