

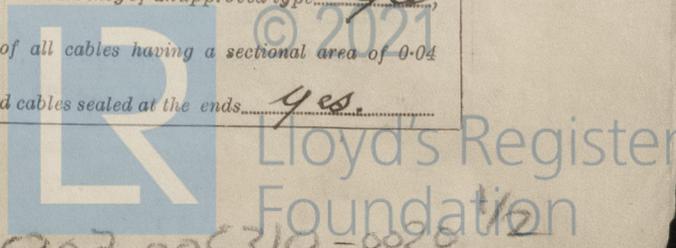
# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 9 JAN 1943

Date of writing Report 24-12-1942 When handed in at Local Office 1942 Port of Middlesbrough  
 No. in Survey held at Haveron Hill-on-Sea Date, First Survey 5-11-42 Last Survey 23-12-1942  
 Reg. Book. 26337 on the S/S. "EMPIRE GOBETT" (Number of Visits 6)  
 Tons { Gross 9811  
 Net 5779  
 Built at Haveron Hill-on-Sea By whom built Furness Shipbuilding Co. Ltd Card No. 350 When built 1942  
 Owners The Ministry of War Transport Port belonging to Middlesbrough  
 Electrical Installation fitted by Furness Shipbuilding Co. Ltd Contract No. 350 When fitted 1942  
 Is vessel fitted for carrying Petroleum in bulk Yes Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. No Sub.Sig. 74

Have plans been submitted and approved Yes System of Distribution Final wire insulated Voltage of supply for Lighting 110  
 Heating — Power 110 Direct or Alternating Current, Lighting Yes Power Yes 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  
positive Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing None fitted 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  
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 a double-pole  
single-pole 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 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 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 —, 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 Yes,  
 state maximum fall of pressure between bus bars and any point under maximum load less than  
4.2 lb. 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 floorplates 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 Centre insulated. In machinery spaces, lead covered armoured & braided cables clipped to perforated ductal tray on deck plate. Along deck runways, clipped to steel bracing. In accommodation V.C.L.C.B cables clipped to wooden grounds & protected when necessary.

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 yes, if so, how are they protected in lower deck cutwater D.S. "Diprimin" flameproof lighting fittings installed 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 none fitted, 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 none fitted.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing none fitted. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule none fitted. Control Gear and Resistances, are they constructed and fitted as per Rule yes. Lightning Conductors, where required are they fitted as per Rule none fitted. 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. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships 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 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	25	110	227	685	Single Cylinder Vertical Steam 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 ... Post ...	25	1	37/072	227	246	40	V.C.	L.C.A.B.
" " EQUALISER								
" " Main	25	1	37/072	227	246	40	"	"
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 ...							
Anti-Switchboard (Main feed)	1	37/072	39	246	712	V.C.	L.C.A.B.
" " (Emergency feed)	1	37/072	39	246	692	"	"
Aft. Lighting Ant. Board	1	19/052	24	104	116	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ... (off Ant. Switchboard)	1	7/044	—	42	116	V.C.	L.C.B.
NAVIGATION LIGHTS	1	7/044	5	42	116	"	"
LIGHTING AND HEATING ... (Auxiliary feed with D.P. D.T. Switch fuses to Max. Red.)							
Engine Room Ltg. D.B.	1	7/044	31	42	30	V.C.	L.C.A.B.
Forecastle Ltg. D.B.	1	7/044	5	42	334	"	"
Main Hatch D.B.							
Mid-Portico D.B.							
Pump Room Lighting D.B.							
Officers Ltg. D.B. (off Anti-Switchboard)	1	7/044	18	42	52	V.C.	L.C.A.B.
Engine Ltg. D.B. " aft "	1	7/044	10.5	42	100	"	L.C.A.B.
Aft. Portico D.B. " " "	1	7/029	1.6	15	98	V.I.P.	"
Emergency W/T. " " "	1	7/044	—	42	280	V.C.	"
Engine Ltg. D.B. " " "	1	7/044	12	42	16	"	"

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.			
Aft. Motor Vent Fan	1	4.75	1	7/044	32	42	132	V.C.	L.C.A.B.
Mid " " "	1	3.5	1	7/044	28	42	268	"	L.C.A.B.

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

P. J. Glover

Electrical Engineers.

Date

4/1/43

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 14 Ampères 7 feet from standard compass on the feet from steering compass.

A cable carrying 14 Ampères on the feet from standard compass 7 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 1/2 degrees on every course in the case of the standard compass, and 1/2 degrees on every course in the case of the steering compass.

FURNESS SHIPBUILDING CO. LIMITED

Builder's Signature.

Date

4/1/43

Geo. M. Robertson

Is this installation a duplicate of a previous case Yes. If so, state name of vessel S/S "Empire Dickens"

Plans. Are approved plans forwarded herewith No. If not, state date of approval D. 28-9-41; S. 26-9-41.

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 under special survey in accordance with the approved plans and the Ministry of Shipping specifications 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.

Noted  
L.H.  
12/1/43

Total Capacity of Generators (2x25) 50 Kilowatts.

The amount of Fee ... £27.10.0  
Specification 6.17.6.  
When applied for, 4/1/1943.  
Travelling Expenses (if any) £ : :  
When received, 19.....

Committee's Minute 22 JAN 1943

Assigned See Ind. No. 14394

FURNESS SHIPBUILDING CO. LIMITED

Geo. M. Robertson  
Secretary

S. D. Wood  
Surveyor to Lloyd's Register of Shipping.

5m. 4. 58. - Transfer, AND PRINTED IN ENGLAND. (The Surveyors are requested not to write below the space for Committee's Minute.)



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