

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 17-7-1942 When handed in at Local Office..... Port of Middlesbrough

No. in Survey held at Haverthwaite Hill-on-Sea Date, First Survey 27-5-42 Last Survey 15-7-1942
Reg. Book. 36491 on the S/S "EMPIRE GUIDON" (Number of Visits.....)

Built at Haverthwaite Hill-on-Sea By whom built Furness Shipbuilding Co. Ltd Yard No. 346 When built 1942
Owners The Ministry of War Transport Port belonging to Middlesbrough

Electrical Installation fitted by Furness Shipbuilding Co. Ltd Contract No. 346 When fitted 1942

Is vessel fitted for carrying Petroleum in bulk No 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 Two 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 None fitted

Positive 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 on raised platform starboard side of 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 on raised platform starboard side of engine room

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 "Sindamyp", 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 quick break knife switch and double pole fuse. D.P.C.O. switch fitted between generator bus bars and main outgoing bus bars.

and for each outgoing circuit a double pole 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 4.4 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 None fitted



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. 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. In machinery spaces lead covered armoured & braided cables clipped to perforated metal tray fastened to the surface. In main decks, H.R. Braided cables run in conduit. In accommodation H.R. B. cables clipped to the surface and protected where 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 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. 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. Not fitted

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. Not fitted Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule. Not fitted Control Gear and Resistances, are they constructed and fitted as per Rule. Yes Lightning Conductors, where required are they fitted as per Rule. Not 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. _____, 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			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.			Fuel Used.	Flash Point of Fuel.
MAIN	2	15	110	136.5	550	Single 4 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 No. 1	15	1	37.072	136.5	152	40	V.I.R.	H.R.B. in trough
" " EQUALISE	15	1	37.072	136.5	152	44	"	"
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							
Off accommodation S.B.	1	7/064	10	46	410	V.I.R.	H.R.B.
Engine Room D.B.	1	7/044	22.2	31	35	V.I.R.	L.C.A. & B.
Charge Lighting D.B.	1	7/044	16	31	130	V.I.R.	H.R.B.
Engine Room Accommodation	1	7/044	10	31	130	V.I.R.	"
Off accommodation D.B.	1	7/064	18	46	380	V.I.R.	"

LIGHTING AND HEATING, ETC., 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.			
WIRELESS	1	7/064	15	46	470	V.I.R.	H.R.B.
NAVIGATION LIGHTS	1	7/044	6	31	464	"	"
LIGHTING AND HEATING	(Alternative Feed from Officers Accommodation D.B.)						
E.S.D. Supply	1	7/086	6	24	260	"	"
Emergency W/T Supply	1	7/044	-	31	150	"	"
Charging Board Supply	1	7/029	9	15	30	"	"

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.			
Refrigerating Motor	1	2.5	1	7/086	22.2	24	450	V.I.R.	H.R.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.

Q. S. Glover per can. Electrical Engineers. Date 4-8-1942

COMPASSES.

Minimum distance between electric generators or motors and standard compass 192'
 Minimum distance between electric generators or motors and steering compass 198'

The nearest cables to the compasses are as follows:—

A cable carrying 1/4 Ampères 7 feet from standard compass on the ~~feet from~~ steering compass.
 A cable carrying 1/4 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 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.

J. J. Gorman Director Builder's Signature. Date 5/8/42

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

Plans. Are approved plans forwarded herewith no. If not, state date of approval D and S 18-11-41

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 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.

*Noted
 J. J. Gorman
 18/8/42*

Total Capacity of Generators (2x15) 30 Kilowatts.

The amount of Fee ...	£ 22 : 10 : 0.	When applied for,	12/8/42
<i>Specification</i>	£ 5 : 12 : 6		
Travelling Expenses (if any) £	:	When received,	19

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

Committee's Minute TUE 18 AUG 1942
 Assigned See Indh FE 17307

5m. 4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minutes.)