

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

6 SEP 1944

Date of writing Report... 14-8-44... 1944... When handed in at Local Office... 19... Port of Middlesbrough

No. in Survey held at Haveron Hill-on-Tees Date, First Survey 25-4-44 Last Survey 11-8-1944
Reg. Book. (Number of Visits..... 10.....)

37475 on the S/S. "EMPIRE PALADIN" Tons (Gross..... Net.....)

Built at Haveron Hill-on-Tees By whom built Furness Shipbuilding Co. Ltd Yard No. 359 When built 1944

Owners The Ministry of War Transport Port belonging to Middlesbrough

Electrical Installation fitted by Furness Shipbuilding Co. Ltd Contract No. 359 When fitted 1944

Is vessel fitted for carrying Petroleum in bulk yes Is vessel equipped with D.F. yes E.S.D. yes Gy.C. yes 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

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 on generator flat aft of L.P. Boilers

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 generator flat 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 Wray "bindanga", 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

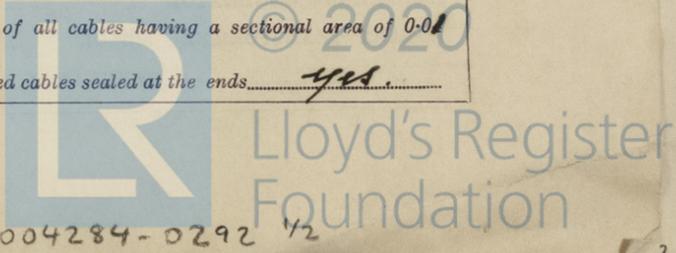
Is the construction as per Rule yes, including accessibility of parts yes, absence of fuses on the back of the board yes, individual fuses to pilot and earth lamps, voltmeters, etc., yes locking of screws and nuts yes, labelling of apparatus and fuses yes, fuses on the "dead" side of switches yes Description of Main Switchgear for each generator and arrangement of equaliser switches a double-pole single-throw quick-break knife switch and double-pole fuse: a double-pole double-throw knife switch for supplying D.G. from either generator:

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 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 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 > 6.6V are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets yes Are paper insulated and varnished cambric insulated cables sealed at the ends yes



with insulating compound Plastic compound - Duralite Sheeting 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. no. Are cables in machinery spaces, galleys, laundries, etc., lead covered. yes, or run in conduit. no. State how the cables are supported and protected. In machinery spaces, along deck gangways etc. V.C. L.C.A.B. cables clipped to metal tray fastened to the surface. In accommodation V.C. cables clipped to the surface and protected as required by metal shields

Are all lead sheaths, armouring 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 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. Battery - port emergency lanterns fitted and method of control. switches on the fittings

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. no, are they adequately ventilated. no what is the battery capacity in ampere hours. no

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. D.P.S.

"Disproportion" flameproof lighting fittings installed in cabin

and where are the controlling switches fitted. in officer's accommodation, are all fittings suitably ventilated. yes

are all fittings and accessories constructed and installed as per Rule. yes Searchlight Lamps, No. of no, whether fixed or portable. no are their fittings as per Rule. no Heating and Cooking, is the general construction as per Rule. no

are the frames effectually earthed. no, are heaters in the accommodation of the convection type. no 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. no and vertically. no 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. no

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. no Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule. no Control Gear and Resistances, are they constructed and fitted as per Rule. yes Lightning Conductors, where required are they fitted as per Rule. no 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	30	110	273	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	No. 1	30	37.083	273	296	60	V.C.	L.C.A.B.
" " EQUALISER	No. 2	30	37.083	273	296	80	V.C.	L.C.A.B.
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							
Engine room Machinery S.B.	1	7/064	50	75	180	V.C.	L.C.A.B.
Deck Fans M/E S.B.	1	7/052	42	54	120	"	"
Sub. Switchboard M/E S.B. - Main	1	37/072	90	246	650	"	"
" " " - Emergency	1	37/072	-	246	650	"	"
Star Connectors	1	19/083	-	191	230	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS - 1st Sub. Switchboard	1	7/064	23	75	160	V.C.	L.C.
NAVIGATION LIGHTS - Main	1	7/044	6	42	120	"	"
LIGHTING AND HEATING - Emergency	1	7/044	-	42	120	"	" (L.C.B. in Electronics)
Engine Room M/E DB "E"	1	7/044	25	42	180	"	L.C.A.B.
" " " " "F"	1	7/044	23	42	30	"	"
M/E Large M/E DB "C"	1	7/029	2	15	120	"	"
M/E Accommodation M/E DB "A"	1	7/052	26	57	200	"	"
" " " " "B"	1	7/052	28	57	300	"	"
Middle M/E DB "H" (off Sub. Switchboard)	1	7/044	18	42	105	"	L.C.
Deck M/E DB "J"	1	7/029	8	15	310	"	L.C.A.B.
Pump room M/E " " "							(Distribution fuses through on deck panel)
Middle M/E M/E " " "							"
Searchlights " " "							"
Officer's M/E " " "							"
Electrician's " " "	1	7/026	8	28	120	V.C.	L.C.
Up to lower pass " " "	1	7/044	16	42	40	"	"

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.			
Engine Room Vent. P. (off Main S.B.)	1	3	1	7/044	20	42	310	V.C.	L.C.A.B.
" " " " "B"	1	3	1	7/044	20	42	370	"	"
Oil Transfer Pump " " "	1	5	1	7/064	5	10	85	"	"
" " M/E " " "	1	5	1	7/064	5	10	85	"	"
Feeding Feed " " "	1	8	1	7/064	61	75	330	"	"
Acc. V. Fine Feed (off Vent. Fans S.B.)	1	3	1	7/044	21	42	210	"	L.C.
" " M/E " " "	1	3	1	7/044	21	42	130	"	"
Refrig. Com. Pump (off Main S.B.)	1	1	1	7/029	7	15	140	"	L.C.A.B.
Middle M/E Acc. V. Fan (off Sub. Switchboard)	1	3	1	7/044	21	42	145	"	L.C.

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

Electrical Engineer

Date Aug 30 1944

COMPASSES.

Minimum distance between electric generators or motors and standard compass 15'

Minimum distance between electric generators or motors and steering compass 13'

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 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.

Builder's Signature

Date

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

Plans. Are approved plans forwarded herewith Yes If not, state date of approval 28-9-43

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

Kul

18/9/44

Total Capacity of Generator (2x30) 60 Kilowatts.

The amount of Fee ...	£ 28. 10. 0.	When applied for,	14. 9. 19. 44
Specification	7. 2. 6.		
Travelling Expenses (if any) £	:	When received,	19.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

see minute on 28/9/44



© 2020

Lloyd's Register Foundation