

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 24 JAN 1942

Date of writing Report 15-1-42 When handed in at Local Office 22/1/42 Port of West Hartlepool
 No. in Survey held at West Hartlepool Date, First Survey 8-12-41 Last Survey 13-1-1942
 Reg. Book. 36385 on the S/S. "EMPIRE PILGRIM" Tons { Gross 2861.06 Net 1711.36
 Built at West Hartlepool By whom built Wm. Gray & Co. Ltd Yard No. 1126 When built 1942
 Owners The Ministry of War Transport. Port belonging to West Hartlepool
 Electrical Installation fitted by Wm. Gray & Co. Ltd Contract No. 1126 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
 negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing 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 floor level starboard side, outboard
 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 engine room starboard side, outboard
 above 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 "Sundawood" 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 porcelain fuse.
 and for each outgoing circuit a double-pole, single throw, quick break knife switch, and
 double-pole porcelain fuse.
 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard one
 ammeters one 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 coupled 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,
 state maximum fall of pressure between bus bars and any point under maximum load 4.4V, 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 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 _____ or run in conduit Yes State how the cables are supported and protected In machinery spaces, overheads, galleys etc. V.I.R. mounted cables run under st. & secured to conduit fastened to the surface. In accommodation deck lead covered cables run on 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 Some fitted, 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, weather proof 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 Some 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 Some fitted

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Some fitted Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Some fitted Control Gear and Resistances, are they constructed and fitted as per Rule Yes Lightning Conductors, where required are they fitted as per Rule Some 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				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	12.5	110	113.5	850	Single Cylinder		
de housing	1	12.5	110	113.5	850	Steam Engine		
EMERGENCY						Single Cylinder		
ROTARY TRANSFORMER						Steam Engine		

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	12.5	1	19/083	113.5	118	28	V.I.R.	H.V. Screened Conduit
de housing	12.5	1	19/083	64	118	40	V.I.R.	H.V. Screened Conduit
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	1	7/026					
Midship Lighting D.B. (Below Deck)	1	7/026	10	46	24	V.I.R.	H.V. Screened Conduit
Scargo D.B.	1	7/026	13	31	80	"	"
Below Deck D.B.	1	7/026	15	46	420	"	"

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	7/026	10	46	274	V.I.R.	H.V. Screened Conduit
NAVIGATION LIGHTS	1	7/026	5	31	306	"	"
LIGHTING AND HEATING	(Alternative feed from Below Deck to Deck Circuits)						
Eng. & Boiler Space D.B.	1	7/026	12	31	40	V.I.R.	H.V. Screened Conduit
Forward Accommodation D.B.	1	7/026	10	46	80	"	"
H.V. Cable Feed	1	19/083	64	118	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	1.5	1	7/026	13.6	31	110	V.I.R.	H.V. Screened Conduit
Water Motor Circulating Pump	1	7.5	1	3/036	4.3	10	60	"	"

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.

FOR WILLIAM GRAY & CO. LIMITED

Wm. S. Simpson
GENERAL MANAGER

Electrical Engineers.

Date 20-1-42

COMPASSES.

Minimum distance between electric generators or motors and standard compass 186 ft

Minimum distance between electric generators or motors and steering compass 192 ft

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.

FOR WILLIAM GRAY & CO. LIMITED

Wm. S. Simpson
GENERAL MANAGER

Builder's Signature.

Date 20-1-42

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

Plans. Are approved plans forwarded herewith No. If not, state date of approval D. 22-11-40, S. 8-4-41.

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 and 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 full working conditions 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
JH
27/1/42

Total Capacity of Generators 12 1/2 (+12 1/2 D.G.) Kilowatts.

The amount of Fee ... £ 16-5-0 When applied for, 19...
Travelling Expenses (if any) £ : : When received, 19...

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

Committee's Minute ERL 30 JAN 1942

Assigned See fe machy etc

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

