

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 14 SEP 1942

Date of writing Report 21-8-1942 When handed in at Local Office 11/9/1942 Port of West Hartlepool

No. in Survey held at West Hartlepool Date, First Survey 1-9-42 Last Survey 20-8-1942
Reg. Book. 73132 on the S/S. "EMPIRE CLARION" (Number of Visits 5)

Tons { Gross 1031.21
Net 4915.74

Built at West Hartlepool By whom built Wm. Gray & Co. Yard No. 1133 When built 1942

Owners The Ministry of War Transport. Port belonging to West Hartlepool

Electrical Installation fitted by Wm. Gray & Co. Contract No. 1133 When fitted 1942

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

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 starboard side, floor level

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, on bulkhead above generator

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 "Sindango" 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. Clamper

switch fitted for supplying this load from D.G. generator

and for each outgoing circuit a double-pole single-throw 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 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. Mains and 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 2.44V, 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 _____ or run in conduit yes State how the cables are supported and protected all cables V.I.R. insulated. In machinery spaces, between decks, galleys, forecabin etc. cables run in H. S. Armored Conduit fixed to the surface. In accommodation lead covered cables clipped to the surface and protected where necessary.

Are all lead sheaths, armoring 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 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 _____ Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing _____ Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule _____ Control Gear and Resistances, are they constructed and fitted 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 _____, 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	15	110	136.3	850	Single Cylinder Steam Engines		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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	2.	19/064	136.3	166	36	V.I.R.	H. S. Armored Conduit
" " EQUALISE								
" " No. 2	15	2.	19/064	136.3	166	34	"	" " "
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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 ...							
Saloon Area D.B.	1	7/064	11+4	46	35+27	V.I.R.	H. S. Armored Conduit
Deck D.B.	1	7/064	28	46	81	"	" " "

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	13	46	384	V.I.R.	H. S. Armored Conduit
NAVIGATION LIGHTS	1	7/064	10	46	447	"	" " "
LIGHTING AND HEATING	(See D.P.D.T. fitted in Captain's Deck House)						
Engine Room D.B.	1	7/064	13.5	46	81	V.I.R.	H. S. Armored Conduit
Deck Area D.B.	1	7/064	11.5	46	342	V.I.R.	" " "
Machinery Space D.B.	1	7/064	15	31	60	"	" " "
Emergency W/T. Fict.	1	7/064	-	31	96	"	" " "
Temporary Warm. Lft. (off Eng. Room)	1	7/064	8	46	40	"	" " "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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 Mtr.	1	2 1/2	1	7/044	22	31	321	V.I.R.	H. S. Armored Conduit

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.

J. S. Simpson Electrical Engineers. Date *24th August 1942*
 GENERAL MANAGER

COMPASSES.

Minimum distance between electric generators or motors and standard compass *146'*
 Minimum distance between electric generators or motors and steering compass *139'*

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 *steer* course in the case of the standard compass, and *nil* degrees on *steer* course in the case of the steering compass.

J. S. Simpson Builder's Signature. Date *24th August 1942*

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

Plans. Are approved plans forwarded herewith *no*. If not, state date of approval *6-11-41*

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. Upon completion the equipment was operated on 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. S.
17/9/42.

Total Capacity of Generators *(2x15) 30* Kilowatts.

The amount of Fee ...	£ <i>22.-</i> : <i>10.0</i>	When applied for,	<i>11/9/1942</i>
<i>Specification</i>	<i>5. 12.6</i>	When received,	<i>19.....</i>
Travelling Expenses (if any) £	:		

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

Committee's Minute *FRI 18 SEP 1942*
 Assigned *See Hpl. J.E. 18330*

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.)