

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office. NOV 1945

Date of writing Report. 15<sup>th</sup> Oct 1945 When handed in at Local Office. 27.10.45 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 27 Aug 1945 Last Survey 11<sup>th</sup> Oct 1945  
Reg. Book. 37435 on the M. V. "EMPIRE FITZROY" (Number of Visits. 9) Tons Gross 890

Built at Glasgow By whom built A. & J. Inglis Ltd. Yard No. 1301 P When built 1945

Owners Ministry of War Transport Port belonging to Glasgow

Electrical Installation fitted by W. Muir Goodfellows & Co. Ltd. Contract No. 1301 P When fitted 1945

Is vessel fitted for carrying Petroleum in bulk Yes Is vessel equipped with D.F. — E.S.D. — Gy.C. — Sub.Sig. —

Have plans been submitted and approved Yes System of Distribution Two wire Voltage of supply for Lighting 110

Heating 110 Power 110 Direct or Alternating Current, Lighting D.C Power D.C. 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 — 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 in 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 near 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 Sindamp, 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 Double pole switches

and fuses

and for each outgoing circuit Double pole switches and fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule — Instruments on main switchboard 3

ammeters 3 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 earth lamps

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

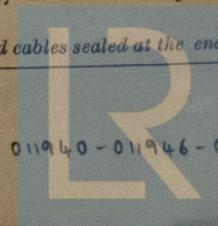
protection devices connected on the pole opposite to the equaliser connection —, have they been tested under working conditions, and at what current

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 W.E.,

state maximum fall of pressure between bus bars and any point under maximum load 5 volts, 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



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 Main Pyrotek machinery space Pyrotek and L.C.A.B accommodation L.C. cables clipped to tray

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 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 —. 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 Flameproof fittings installed in pump room in accordance with rule requirements

and where are the controlling switches fitted in accommodation, 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 Yes

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 Yes. 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 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	1	25	110	227	1100	I.C. engine	oil	above 150° F
	1	18	110	164	1000	I.C. engine	"	"
	1	6 1/2	110	59	1000	I.C. engine	"	"
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	25	1	.3	227	385	180	V.C.	L.C.A.B
" " EQUALISEE	18	1	.15	164	246	14	Pyrotek	Cable
	6 1/2	1	.06	59	135	180	"	"
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							
AFT ACCOMMODATION SECTION BOX	1	.03	49	87	72	Pyrotek	CABLE

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	.03	10	87	330	Pyrotek	Cable
NAVIGATION LIGHTS	1	.01	2	42	390	"	"
LIGHTING AND HEATING							
ENGINE ROOM LIGHTING	1	.007	11	28	45	Pyrotek	Cable
MIDSHIP ACCOM. LIGHTING	1	.0225	29	75	270	"	"
AFT. ACCOM. LIGHTING	1	.0225	22	46	180	Rubber	L.C.
ENGINE ROOM D.B. (PUMPS)	1	.06	65	135	480	Pyrotek	Cable
ENGINE ROOM D.B. (POWER)	1	.03	59	87	36	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
REFRIG.	1	1	.0145	11	57	450	Pyrotek	Cable.
WINDLASS	1	18	.15	150	246	450	"	"
FAN MOTORS AFT D.B.	4	-	.08	24	87	180	"	"
STEERING GEAR	1	5	.03	42	87	150	"	"
CAPSTAN	1	14	.1	115	191	150	"	"
BILGE PUMP MOTOR	1	6 1/4	.04	55	104	192	"	"
F.W. PUMP MOTOR	1	2	.03	18	87	30	"	"
BALLAST PUMP	1	5 1/2	.03	47	87	36	"	"

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 AND ON BEHALF OF W. MUIR, GOODFELLOW AND COMPANY LIMITED.

W. Muir  
 DIRECTOR.

Electrical Engineers.

Date 19th OCTOBER 1945

COMPASSES.

Minimum distance between electric generators or motors and standard compass 100 feet

Minimum distance between electric generators or motors and steering compass 90 feet

The nearest cables to the compasses are as follows:-

A cable carrying .2 Ampères led into ~~feet~~ from standard compass led into ~~feet~~ from steering compass.

A cable carrying 6 Ampères 6 feet from standard compass 6 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 any course in the case of the

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

W. J. Milne  
 Director

Builder's Signature

Date 22 Oct 1945

Is this installation a duplicate of a previous case Yes If so, state name of vessel "EMPIRE CAMPDEN"

Plans. Are approved plans forwarded herewith No If not, state date of approval 12-4-45

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 fitted on board under special survey, tested under working conditions and found satisfactory. All the requirements of the approved plans and Ministry of War Transport specification have been carried out. The materials and workmanship are good.

Total Capacity of Generators 49½ Kilowatts.

The amount of Fee ... £ 27-7-6 When applied for, 23-10-45  
 SPEC. £ 6-17-0  
 Travelling Expenses (if any) £ : : When received, .....

J. C. Wright  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 30 OCT 1945  
 Assigned Transmit to London

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

