

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 9 JAN 1942

Date of writing Report... 3<sup>rd</sup> Dec 1941... When handed in at Local Office... 29.12.1941... Port of... Glasgow

No. in Survey held at... Glasgow & Greenock... Date, First Survey... 29.7.41... Last Survey... 21<sup>st</sup> November 1941  
Reg. Book. (Number of Visits... 5)

36324 on the M.V. "EMPIRE PICT" Tons {Gross... Net...}

Built at... Glasgow... By whom built... Blythswood S.B.C. Ltd. Yard No. 64... When built... 1941

Owners... His Majesty represented by The Minister of War Transport... Port belonging to... Glasgow

Electrical Installation fitted by... W. Muir Gifford & Co. Ltd. Contract No. 64... When fitted... 1941

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

Have plans been submitted and approved... System of Distribution... in wire... Voltage of supply for Lighting... 110

Heating... Power... Direct or Alternating Current, Lighting... Power... If Alternating Current state frequency... Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off... Are turbine emergency governors fitted with a

trip switch as per Rule... Generators, are they compound wound... are they level compounded under working conditions...

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... are shunt field regulators provided... Is the compound winding connected to the negative or positive pole

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... and the results found as per rule... Are the lubricating arrangements and the construction

of the generators as per rule... Position of Generators... in engine room

is the ventilation in way of generators satisfactory... are they clear of inflammable material... 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... are the bedplates and frames earthed... and the prime movers and generators in metallic

contact... Switchboards, where are main switchboards placed... near generators

are they in accessible positions, free from inflammable gases and acid fumes... are they protected from mechanical injury and damage from water, steam

and oil... if situated near unprotected combustible material state distance from same horizontally... and vertically... what insulation

material is used for the panels... if of synthetic insulating material is it an Approved Type... if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule... Is the frame effectually earthed...

Is the construction as per Rule... including accessibility of parts... absence of fuses on the back of the board... individual fuses

to pilot and earth lamps, voltmeters, etc... locking of screws and nuts... labelling of apparatus and fuses... fuses on the "dead"

side of switches... Description of Main Switchgear for each generator and arrangement of equaliser switches...

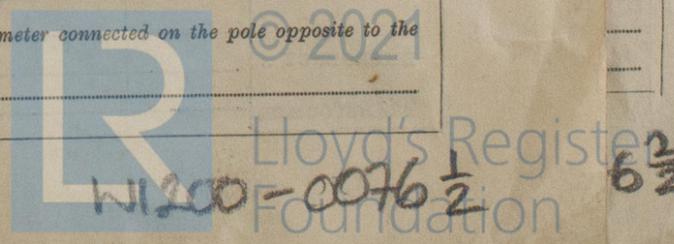
D.P. CB with 4/ and fuses 129.

and for each outgoing circuit... D.P. 4/0. Switch and fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Instruments on main switchboard... 2

ammeters... 2... 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 Y, are the fuses an approved type Y, are all fuses labelled as per Rule Y, are the reversed current protection devices connected on the pole opposite to the equaliser connection Y, have they been tested under working conditions Y. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Y. Cables, are they insulated and protected as per the appropriate Tables of the Rules Y, if otherwise than as per Rule are they of an approved type Y, state maximum fall of pressure between bus bars and any point under maximum load 5.2106, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Y. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Y with insulating compound Y or waterproof insulating tape Y. 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 Y, are cables laid under machines or floorplates Y, if so, are they adequately protected Y. Are cables in machinery spaces, galleys, laundries, etc., lead covered Y or run in conduit Y. State how the cables are supported and protected Main L.C.A. in galvanised steel pipe on deck, wiring in Machinery spaces L.C.A.B. clipped

Are all lead sheaths, armouring and conduits effectually bonded and earthed Y. Refrigerated chambers, are the cables and fittings as per Rule Y. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Y, where unarmoured cables pass through beams, etc., are the holes effectually bushed Y and with what material lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Y. Emergency Supply, state position Y and method of control Y.

Navigation Lamps, are they separately wired Y controlled by separate double pole switches Y and fuses Y. Are the switches and fuses in a position accessible only to the officers on watch Y, is an automatic indicator fitted Y. Secondary Batteries, are they constructed and fitted as per Rule Y, are they adequately ventilated Y. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Y. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present Y, if so, how are they protected Flameproof fittings installed in accordance with rule requirements in Pump rooms, and where are the controlling switches fitted in accommodation, are all fittings suitably ventilated Y, are all fittings and accessories constructed and installed as per Rule Y. Searchlight Lamps, No. of 1, whether fixed or portable portable, are their fittings as per Rule Y. Heating and Cooking, is the general construction as per Rule Y, are the frames effectually earthed Y, are heaters in the accommodation of the convection type Y. Motors, are all motors constructed and installed as per Rule Y and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Y, if situated near unprotected combustible material state minimum distance from same horizontally Y and vertically Y. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Y. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Y. Control Gear and Resistances, are they constructed and fitted as per Rule Y. Lighting Conductors, where required are they fitted as per Rule Y. 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 Y, are all fuses of the cartridge type Y are they of an approved type Y. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type Y. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Y, are they suitably stored in dry situations Y. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory Y.

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	20	110.	182	600.	Steam engine.		
	1	20	110	182	600	P.C. engine.	oil, above 150° F.	
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	20.	1	37/0.83.	182.	184	80.	Rubber.	L.C.A.B.
" " EQUALISER								
SHOLE. CONNECTION.		1	27/0.72.		152.	90.		
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.		
AUX. SWITCHBOARDS AND SECTION BOARDS								
ENGINE ROOM. S.B. LIGHTING.		1	7/0.64	43	46	61.	Rubber.	L.C.A.B.
" " S.B. POWER.		1	7/0.52	62	64	90		
AFT. ACCOMMODATION. S.B.		1	19/0.52	40	64	150		
SUB-SWITCHBOARD. (MID-ACCOMM.)		1	27/0.72	120	152	600.		

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.		
WIRELESS		1	7/0.64	20	46	660.	Rubber.	L.C.A.B.
NAVIGATION LIGHTS		1	7/0.52	15	37	660		
LIGHTING AND HEATING								
SUB-SWITCHBOARD.								
WIRELESS. (ALTM. SUPPLY)		1	7/0.64	20	46	35		
SECTION. S.B. (BRIDGE DECK)		1	7/0.64	44	46	5		
DB L11		1	7/0.64	5	24	18		
L12		1	7/0.86	16	24	18		
L13		1	7/0.29	45	15	18		
L20.		1	7/0.64					
NAVIGATION. ALT. SUPPLY.		1	7/0.86	15	24	105		
10" SEARCH LIGHT.		1	7/0.64	182	31	105		

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.		
WORKSHOP MOTOR.	1	3	1	7/0.64	27	31	99.	Rubber.	L.C.A.B.
OIL PURIFIER.	1	2	1	7/0.86	16	24	40		
THERMOTANC. VENT FAN. ER	1	3	1	7/0.64	27	31	90		
" " MID.	1	3.	1	7/0.64	27	31	90		

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 & ON BEHALF OF  
 W. MUIR GOODFELLOW & COY LTD

Electrical Engineers.

Date 9/12/41

*W. Muir Goodfellow & Co. Ltd*

COMPASSES.

Minimum distance between electric generators or motors and standard compass 45 feet

Minimum distance between electric generators or motors and steering compass 35 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères led m/s feet from standard compass led m/s feet from steering compass.

A cable carrying 15 Ampères 16 feet from standard compass 10 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 P.

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted P.

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.

BLYTHWOOD SHIPBUILDING CO. LTD.

Builder's Signature.

Date 20.12.41

*John Stewart*

Is this installation a duplicate of a previous case P. If so, state name of vessel M.V. "EMPIRE JET"

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of the vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The material and workmanship are good.

Noted  
 J.P.  
 2/1/42

Gib  
 29/12/41

Total Capacity of Generators 40 Kilowatts.

The amount of Fee ...	£ 25 :	:	When applied for,
			9.12.41
Travelling Expenses (if any) £ :	:	:	When received,
			.....19.....

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

Committee's Minute GLASGOW 30 DEC 1941

Assigned see P.C. Rpt.