

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office MAY - 1 1941

Date of writing Report 3rd April 1941 When handed in at Local Office 26.4.41 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 12th March Last Survey 31st March 1941
Reg. Book. (Number of Visits 7)

88011 on the M.V. "EMPIRE GAT" Tons { Gross 871
Net

Built at Glasgow By whom built A. & J. Inglis Ltd Yard No. 1088P When built 1941

Owners His Majesty represented by THE MINISTER OF SHIPPING Port belonging to Glasgow

Electrical Installation fitted by Telford Grier Mackay & Co Ltd Contract No. 1088P 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 Yes System of Distribution Fan wire Voltage of supply for Lighting 220

Heating - Power 220 Direct or Alternating Current, Lighting D.C. Power D.C. 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 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 Yes, 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

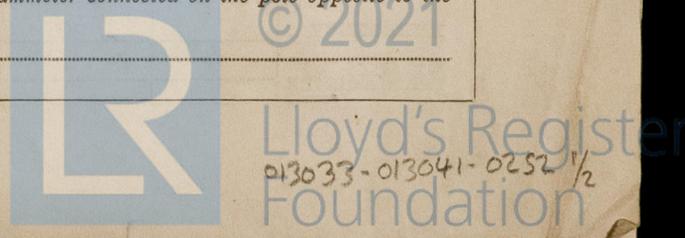
are they in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam and oil Yes, if situated near unprotected combustible material state distance from same horizontally - and vertically -, what insulation material is used for the panels Sindano, 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 D.P. Switch and fuses

and for each outgoing circuit DP C/P Switch and fuses, breakers, capstan & windlass DP 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 Yes, are the fuses an approved type Yes, are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. 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 Yes, state maximum fall of pressure between bus bars and any point under maximum load 2.5 Volts L.T.G. 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 exposed ends Yes with insulating compound Yes 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 Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected Mains. V.R. in galvanised steel pipe. Machinery space L.C. clipped. Accommodation L.C. clipped.

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 Yes and method of control Yes.

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 Yes, are they adequately ventilated Yes. 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 Yes.

and where are the controlling switches fitted Yes, are all fittings suitably ventilated Yes. are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of Yes, whether fixed or portable Yes, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes. are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. 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 Yes and vertically Yes.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. 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 Yes. 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. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type 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 megger 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	50	220	227	500	OIL ENGINE.	oil	above 150° F
Auxiliary	1	16	220	73	1000			
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. approx. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	50	1	37/103	227	240	48	Rubber.	L.C.
" " EQUALISER								
Auxiliary	16	1	19/064	73	83	120	Rubber.	L.C.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS						

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	HOW PROTECTED.
WIRELESS		1	7/044	12	31	270 Rubber. IN CONDUIT
NAVIGATION LIGHTS		1	7/029	3	15	288
LIGHTING AND HEATING						
MIDSHIPS FOR L.T.G.		1	7/029	6	15	228
AFT. L.T.G.		1	7/029	5	15	84
ENGINE ROOM.		1	7/029	3	15	18 L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	HOW PROTECTED.
WINDLASS	1	1	19/064	79	83	378 Rubber.	IN CONDUIT.
STEERING GEAR	1	1	7/044	25	31	132	"
OIL TRANSFER	1	1	7/029	8	15	96	" L.C.
BALLAST PUMP.	1	1	19/052	50	64	144	" L.C.
G.S. PUMP.	1	1	7/064	31	46	120	" 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.

P. Norman Ferguson
 DIRECTOR

Electrical Engineers. Date 21-4-41

COMPASSES.

Minimum distance between electric generators or motors and standard compass.....

Minimum distance between electric generators or motors and steering compass..... 10 feet

The nearest cables to the compasses are as follows:—

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

A cable carrying 3 Ampères feet from standard compass 8 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 degrees on course in the case of the

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

W. S. Milne Manager Builder's Signature. Date 21-4-41

Is this installation a duplicate of a previous case..... If so, state name of vessel.....

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 full working conditions and found satisfactory. The materials
 and workmanship are good. All the requirements of the approved
 plans and M.O.S. specification have been carried out.*

*Noted
 J. G. Fiddal
 26/4/41*

*206
 26/4/41*

Total Capacity of Generators..... 66 Kilowatts.

The amount of Fee	£ <u>29: 2: 0</u>	When applied for, <u>22.4.1941</u>
M.O.S. specification <u>7.5.6</u>		
Travelling Expenses (if any) £	<u>—</u>	When received, <u>19</u>

J. G. Fiddal
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 29 APR 1941

Assigned..... See J.C. Report.

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minutes.)

