

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 SEP 1943

Received at London Office.....

Date of writing Report..... 15-9-43..... When handed in at Local Office..... 23/9/43..... Port of..... Belfast

No. in Survey held at..... Belfast..... Date, First Survey..... 13 May 1943..... Last Survey..... 16 Sept. 1943
Reg. Book..... (Number of Visits..... 17.....)

on the..... M.V. "EMPIRE INDUSTRY"..... Tons {Gross.....
Net.....

Built at..... Belfast..... By whom built..... Harland & Wolff Ltd..... Yard No..... 1159..... When built..... 1943

Owners..... M.O.W.T..... Port belonging to.....

Electrical Installation fitted by..... Harland & Wolff Ltd..... Contract No..... 1159..... When fitted..... 1943

Is vessel fitted for carrying Petroleum in bulk..... Yes..... Is vessel equipped with D.F..... Yes..... E.S.D..... Yes..... Gy.C..... No..... Sub.Sig..... 6

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

Heating..... 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..... None..... 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..... On Starboard side of Motor 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..... On Platform, starboard side of Motor Room

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..... Sundry..... 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..... 300 Amp Double Pole

Change over switch with 250 amp Fuse on each pole

and for each outgoing circuit..... Double pole switch and Double pole fuses.

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

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..... Two earth lamps with two way and off switch

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..... No..... 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..... 5.64..... 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

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. Yes, if so, are they adequately protected. Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered. No Copper Covered. State how the cables are supported and protected. Pipelines cable, copper covered, run in steel channel on starboard side of Gangway. Duplicate circuit, copper covered cable, run in Mild Steel Channel, on Port side of Gangway. The run protected with 3/8" M.S. Dupl. Iron

over: Machinery spaces, copper covered throughout, on plating. Branch wiring in copper covered cable: D/G in lead covered, and L.S.A.B. cables, specially clipped to Admiralty Inspection. Protected at Bellards, and stores with 1/8" steel plate.

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 effectually bushed. Yes and with what material. Steel 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. Yes, if so, how are they protected. in

Magnifying fittings are Admiralty Pat 7007A: Pump Room Fittings. Flame proof type in steel boxes welded to the Pump Room bulkhead, with access from outside to Pump Room. (Magnifying switches are outside the Magnifying) and where are the controlling switches fitted. Switch Panel in M.S. Accommodation Pump Room, 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 freed 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. No. 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. 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. No Copper Covered. 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	2	25	110	228	600	SINGLE CYL STEAM 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	0.20"	228	296	72	MINERAL INSULATED	COPPER COVERED
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

1 CORE

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 ...							
SECTION BOX No 2. MOTOR ROOM SMALL MOTORS	1	0.10	100	191	100	MINERAL INSULATED	COPPER COVERED
Do No 3. ENGINE ROOM LOTS & ACCOMM. AFT	1	0.06	101	135	90	Do	Do Do
MIDSHIPS MASTERBOARD	1	0.20	113	296	500	Do	Do Do
D/G CIRCUIT.	1	0.15	132	152	25	RUBBER	L.S.A.B

1 CORE

Do

Do

Do

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS & NAVIGATION (SECTION BOX No 1)	1	0.1	27	191	650	MINERAL INSULATED COPPER COVERED
NAVIGATION LIGHTS						
LIGHTING AND HEATING						
DIST BOX No 1. LIGHTS NAVIGATION	1	0.0225	35	60	120	Do Do Do
Do No 2 Do ACCOMMODATION	1	0.0045	8	15	60	Do Do Do
Do No 3 Do ENIG th ACCOMMODATION	1	0.0145	39	45	10	Do Do Do
Do No 4 PORTABLE CONNECTIONS FORD	1	0.0145	14	45	15	Do Do Do
Do No 5 LIGHTING FORECASTLE	1	0.0145	4	45	360	Do Do Do
Do No 6 PORTABLE CONNECTIONS AFT	1	0.0070	10	25	55	Do Do Do
Do No 7 LIGHTING ACCOMMODATION AFT	1	0.0100	22	35	200	Do Do Do
Do No 8 Do Do Do	1	0.0225	26	60	90	Do Do Do
Do No 9 Do MOTOR RM HIGH	1	0.0070	13	25	180	Do Do Do
Do No 10 Do Do	1	0.0045	8	15	10	Do Do Do
Do No 11 Do Do	1	0.0045	5	15	180	Do Do Do
Do No 12 Do Do	1	0.0070	5	25	70	Do Do Do
Do No 13 Do Do	1	0.0045	7	15	180	Do Do Do
Do No 14 Do Do	1	0.0045	7	15	50	Do Do Do

1 CORE

2 CORE

Do

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
			In the Circuit.	Rule.			
TURNING MOTOR	1	10.0	1	0.0400	80.0	104	90 MINERAL INSULATED COPPER COVERED
WORKSHOP MOTOR	1	3.0	1	0.0100	26.0	35	190 Do Do Do
FUEL OIL PURIFIER	1	3.0	1	0.0225	26.0	60	30 Do Do Do
LUB OIL PURIFIER	1	2.5	1	0.0145	21.3	45	40 Do Do Do
SUPPLY FAN No 1 ACCOMM. MIDSHIPS	1	4.0	1	0.0225	35.0	60	70 Do Do Do
Do No 2 ACCOMM. AFT.	1	4.0	1	0.0225	35.0	60	230 Do Do Do
FUEL OIL PUMP (Stand By)	1	1.75	1	0.0100	15.9	35	50 Do Do Do

1 CORE

2.3 Do

Do

Do

Do

Do

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 to the maker's works as specified in the Rules.
 The foregoing is a correct description.



Electrical Engineers. Date 16.9.43.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 50 ft
 Minimum distance between electric generators or motors and steering compass 45 ft

The nearest cables to the compasses are as follows:—

A cable carrying 0.13 Ampères ON feet from standard compass 8 feet from steering compass.
 A cable carrying 0.12 Ampères 8 feet from standard compass ON feet from steering compass.
 A cable carrying 24 Ampères 8 feet from standard compass 10 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power Yes and calibrated with D/G on and off.

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.



Builder's Signature. Date 16-9-43.

Is this installation a duplicate of a previous case Yes. State name of vessel Carpine Boudard

Plans. Are approved plans forwarded herewith Yes. If not, state date of approval -

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 the vessel has been installed under special survey and in accordance with the approved plans and specification. The installation has been tested under full working conditions and found satisfactory. The materials and workmanship are good.

Noted
L.H.
29/9/43.

Total Capacity of Generators 50 Kilowatts.

The amount of Fee ... £ 27 : 10 : 0 When applied for, 24/9/1943
Specification + 25% 6 : 17 : 6
 Travelling Expenses (if any) £ 22 : 18 : 4 When received, 19
On Belfast 11.9.25
On Liverpool

W. H. Shaw
 Surveyor to Lloyd's Register of Shipping.

TUES. 5 OCT 1943

Committee's Minute
 Assigned See minute on J.E. Rpt.

5m.4.33.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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