

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

8 FEB 1943

Received at London Office

Date of writing Report 19th Nov. 42 When handed in at Local Office 19 Port of Portland, Maine (New York) U.S.A.

No. in Survey held at South Portland, Maine Date, First Survey 10th Sept. Last Survey 12th November 42
Reg. Book. (Number of Visits continuous)

on the s.s. "OCEAN CRUSADER" Tons { Gross 7178
Net 4280

Built at South Portland, Maine By whom built Todd-Bath Iron S.B. Corp. Yard No. 28 When built 1942

Owners British Ministry of War Transport Port belonging to

Electric Light Installation fitted by Todd-Bath Iron Shipbuilding Corp. Contract No. 28 When fitted 1942

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution 2 Wire D.C.

Pressure of supply for Lighting 110 volts, Heating none volts, Power none volts.

Direct or Alternating Current, Lighting D.C. Power X

If alternating current system, state frequency of periods per second X

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yes

Generators, do they comply with the requirements regarding temperature rise yes, are they compound wound yes

are they over compounded 5 per cent. Flat compounded, if not compound wound state distance between each generator X

Where more than one generator is fitted are they arranged to run in parallel no, is an adjustable regulating resistance fitted in

series with each shunt field yes Have certificates of test results for machines under 100 kw. been submitted and

approved yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing X

Are all terminals accessible, clearly marked, and furnished with sockets yes, are they so spaced or shielded that they cannot be accidentally earthed,

short circuited, or touched yes Are the lubricating arrangements of the generators as per Rule yes

Position of Generators Star. E. R. Lower Platform, is the ventilation

in way of the generators satisfactory yes are they clear of all inflammable material yes if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators X and 7 ft. above

are the generators protected from mechanical injury and damage from water, steam or oil yes, are their axes of rotation fore and aft yes,

Earthing, are the bedplates and frames of the generating plant efficiently earthed yes are the prime movers and their respective generators

in metallic contact yes Main Switch Boards, where placed Star. engine room lower platform.

If the generators and main switchboard are not placed in the same compartment, is each generator provided with

a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard X

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes yes, are they protected from mechanical

injury and damage from water, steam or oil yes, if situated near unprotected woodwork or other combustible material, state distance of same

horizontally from or vertically above the switchboards none near X, are they constructed wholly of durable, non-ignitable non-absorbent

materials yes, is all insulation of high dielectric strength and of permanently high insulation resistance yes

is it of an approved type yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other

non-hygroscopic insulating material, and the slab similarly insulated from its framework X, is the non-hygroscopic insulating material of an approved

type X, and is the frame effectively earthed yes Are the fittings as per Rule regarding:—spacing or shielding of live parts

yes, accessibility of all parts yes, absence of fuses on back of board yes, temperature rise of

omnibus bars X, individual fuses to voltmeter, pilot or earth lamp yes, are moving parts of switches alive in the

"off" position no are all screws and nuts securing connections effectively locked yes are any fuses fitted on the live side of

switches no Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Double pole switches and double pole fuses.

Are turbine driven generators fitted with emergency trip switch as per rule X Are cupboards or compartments containing switchboards composed of

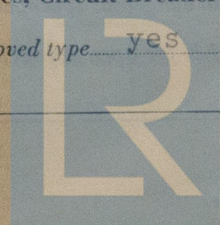
fire-resisting material or lined with approved material yes Instruments on main switchboard 2 ammeters 2 volt-

meters X synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

X Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Earth lamp and voltmeter Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type yes have the reversed



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current protection devices been tested under working conditions. ☒ Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule ☒ yes

Cables: Single, twin, concentric, or multicore. ☒ Multicore. Are the cables insulated and protected as per Tables IV, V, X or XI of the Rules ☒ yes

If the cables are insulated otherwise than as per Rule, are they of an approved type ☒ Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 2.8 volts Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets. ☒ Substantial mechanical Paper Insulated and Varnished Cambric Insulated Cables. clamps.

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound ☒ none, or waterproof insulating tape ☒ none Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage ☒ yes Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit ☒ covered.

Support and Protection of Cables, state how the cables are supported and protected Steel hangers and clips, open ducts or led through pipes or steel casings where protection is necessary.

If cables are run in wood casings, are the casings and caps secured by screws ☒ are the cap screws of brass ☒ are the cables run in separate grooves ☒ If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII ☒ yes

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements ☒ yes

Joints in Cables, state if any, and how made, insulated, and protected ☒ none

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands ☒ yes Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed ☒ state the material of which the bushes are made All cables armoured.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas ☒ are their connections made as per Rule

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule Oil lamps Emergency Supply, state position and method of control of the emergency supply and how the generator is driven ☒

Navigation Lamps, are these separately wired ☒ yes, controlled by separate switch and separate fuses ☒ yes, are the fuses double pole ☒ yes, are the switches and fuses grouped in a position accessible only to the officers on watch ☒ yes

has each navigation lamp an automatic indicator as per Rule ☒ yes Secondary Batteries, are they constructed and fitted as per Rule ☒ yes

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight ☒ yes, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected ☒ none

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected ☒ no

where are the controlling switches situated ☒ are all fittings suitably ventilated ☒ are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials ☒ yes

Heating and Cooking Appliances, are they constructed and fitted as per Rule ☒ are air heaters constructed and fitted as per Rule ☒ yes

Searchlight Lamps, No. of ☒ none, whether fixed or portable ☒ are their fittings as per Rule ☒ yes

Arc Lamps, other than searchlight lamps, No. of ☒ are their live parts insulated from the frame or case ☒ are their fittings as per Rule ☒ yes

Motors, are their working parts readily accessible ☒ are the coils self-contained and readily removable for replacement ☒ yes

are the brushes, brush holders, terminals and lubricating arrangements as per Rule ☒ are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material ☒ are they protected from mechanical injury and damage from water, steam or oil ☒ are their axes of rotation fore and aft ☒ if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type ☒

if not of this type, state distance of the combustible material horizontally or vertically above the motors ☒ and ☒

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing ☒ Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule ☒ Lightning Conductors, where lightning conductors are required, are these fitted as per Rule ☒ Ships carrying Oil having a Flash Point less than 150°F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings ☒ are all fuses of the filled cartridge type ☒ are they of an approved type ☒

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office ☒

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule ☒ yes

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	2	15 each	110	136	450	Steam engine	X	X	
AUXILIARY ...	X								
EMERGENCY ...	X								
	X								
ROTARY TRANSFORMER	X								
	X								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
		Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.				
MAIN GENERATOR	1	.1318	19	.094	136	139	40'	V.I.R.	L.C.A.	
EQUALISER CONNECTIONS	X									
AUXILIARY GENERATOR ...	X									
EMERGENCY GENERATOR...	X									
ROTARY TRANSFORMER	X									
MOTOR GENERATOR...	X									
ENGINE ROOM } ... L1	1	.0206	7	.061	29.38	45	80'	V.I.R.	L.C.A.	
BOILER ROOM }										
AUXILIARY SWITCHBOARDS	DG 1	.1318	19	.094	98	138	20'	V.I.R.	L.C.A.	
& Aft. Dk. House L2	1	.0521	7	.097	19.26	74	430'	V.I.R.	L.C.A.	
Stores Floodlights	1	.0521	7	.097	24.15	74	450'	V.I.R.	L.C.A.	
ate. For'd L3	1	.0521	7	.097	24.15	74	450'	V.I.R.	L.C.A.	
Officers Quarters L4A	1	.0329	7	.077	29.19	53	290'	V.I.R.	L.C.A.	
Bridge Dk. Etc. L4B	1	.0130	7	.048	10.53	33	80'	V.I.R.	L.C.A.	
Engineer Quarters L5	1	.0329	7	.077	28.86	53	170'	V.I.R.	L.C.A.	
ACCOMMODATION										
Paint Rm. & Flood...	1	.0329	7	.077	18.51	53	300'	V.I.R.	L.C.A.	
lights Aft. L6	1	.0329	7	.077	18.51	53	300'	V.I.R.	L.C.A.	
Emergency W.T. Feeder	1	.0130	7	.048	-----	33	170'	V.I.R.	L.C.A.	
Fathometer Feeder S	1	.0130	7	.048	10.00	33	260	V.I.R.	L.C.A.	
WIRELESS										
SEARCHLIGHT										
MASTHEAD LIGHT										
SIDE LIGHTS										
COMPASS LIGHTS										
POOP LIGHTS										
CARGO LIGHTS										
ARC LAMPS										
HEATERS										

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
		No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS...										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR ...										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT... ..										
STEERING GEAR—										
(a) MOTOR GENERATOR ...										
(b) MAIN MOTOR										
WORKSHOP MOTOR... ..										
VENTILATING FANS Eng. Rm.	1	1.	.0082	7	.038	8	28	200	V.I.R.	L.C.A.
Domestic Refrigerator	1	1.	.0082	7	.038	18.63	28	300	V.I.R.	L.C.A.

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

L. B. Pinkham
TODD-BATH IRON SHIPBUILDING CORP.

Electrical Engineers.

Date 27/11/42

COMPASSES.

Distance between electric generators or motors and standard compass 10 feet (Wireless transformer)

Distance between electric generators or motors and steering compass 6 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 2.15 Ampères 10 feet from standard compass 6 feet from steering compass.

A cable carrying .43 Ampères 3 feet from standard compass 3 feet from steering compass.

A cable carrying .43 Ampères 3 feet from standard compass 3 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

The maximum deviation due to electric currents was found to be 4 degrees on West course in the case of the standard

compass, and 4 degrees on East course in the case of the steering compass.

L. B. Pinkham
TODD-BATH IRON SHIPBUILDING CORP.

Builder's Signature.

Date 27/11/42

Is this installation a duplicate of a previous case yes If so, state name of vessel "OCEAN LIBERTY", "FREEDOM", ETC.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Electrical Installation of this vessel has been fitted in accordance with the Rules and approved plans. The materials and workmanship are good and the whole has been tested as required by the Rules with good results.

Total Capacity of Generators 30 Kilowatts.

The amount of Fee ... \$ 65.16 : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

R. Rodgers
Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK JAN 6 - 1943

Assigned Elec. light.



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Foundation