

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

NOV 5 1938

Received at London Office

Date of writing Report 4th October 1938 When handed in at Local Office 4th October 1938 Port of Baltimore, Maryland

No. in Survey held at Baltimore, Maryland Date, First Survey 29th April, 1938 Last Survey 14th September 1938
Reg. Book. 74127 on the "ESSO BALTIMORE" (Hull #4308) Tons { Gross 7949
Net 4711

Built at Sparrows Point, Maryland By whom built Bethlehem Shipbuilding Co. Yard No. 4308 When built 1937-8

Owners Standard Oil Company of New Jersey Port belonging to Wilmington, Delaware

Electric Light Installation fitted by Bethlehem Shipbuilding Co., Sparrows Point, Maryland Contract No. 4308 When fitted 1938

System of Distribution Two wire, two conductor
Pressure of supply for Lighting 110 volts, Heating None volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct current Power Direct current

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

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 rating Yes, are they compound wound Yes

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

Where more than one generator is fitted are they arranged to run in parallel Yes, is an adjustable regulating resistance fitted in series with each shunt field Yes

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 26' 0" Flat, Starboard Side, Between Frame #25 and Frame #41

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 - and -, 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 26' 0" Flat, Starboard Side, Between Frame #35 and Frame #40

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 same compartment

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 - and -

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, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework None used

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, proportion of omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches Each generator is provided with trip free, overload reverse current type two pole circuit breakers, and three pole knife switch. Equalizer is connected through the center blade of the three pole switch. Outgoing circuits are provided with either trip-free circuit breakers or fused knife switches according to load.

Instruments on main switchboard Four ammeters Four voltmeters None synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Ground-Detector lamps are fitted on each system (Power and Lighting).

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

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 Twin are the cables insulated and protected as per Tables IV or V of the Rules Five

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 1 1/2 volts

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes excepting resistor leads which are fitted with solderless lugs.

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound ---

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

Support and Protection of Cables, state how the cables are supported and protected All cables are leaded and armored and are supported by means of mild steel insul straps.

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 armored and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII Yes

Refrigerated Chambers, if lights are fitted, 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 Yes state the material of which the bushes are made chemically pure lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas None, are their connections made as per Rule ---

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule Yes

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven Emergency lighting in engine room only. Connected through switch to generator leads directly.

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 (Radio batteries - No others used).

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 - pump rooms are illuminated by through bulkhead type fixtures, how are the cables led Entirely outside the pump rooms.

where are the controlling switches situated On deck.

Searchlight Lamps, No. of One (incandescent) whether fixed or portable Fixed, are their fittings as per Rule ---

Are Lamps, other than searchlight lamps, No. of None, are their live parts insulated from the frame or case ---, are their fittings as per Rule ---

Motors, are their working parts readily accessible Yes, are the coils self-contained and readily removable for replacement Yes, are the brushes, brush holders, terminals and lubricating arrangements as per Rule Yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material Yes, are they protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes, 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 None and ---

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule None fitted

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 Yes

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office None supplied

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	300	240	1250	1200	Geared turbine	-	-
AUXILIARY								
EMERGENCY								
Motor Gen.								
ROTARY TRANSFORMER	2	20	120	165	1750	230 V. 30HP Motor		

M.B.:— The main generators paralleled & adjusted to normal voltage with light load. Emergency governor of one machine tripped & set left to its own device and the system observed with full vacuum maintained on the turbine and the reverse current protection elements found to function perfectly operating on the main switch and isolating the particular unit.

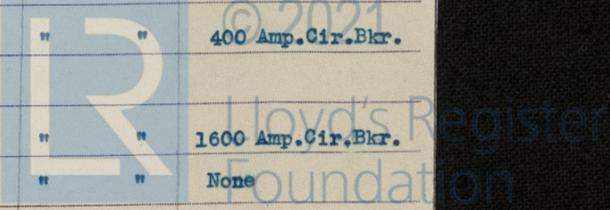
LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
2	MAIN GENERATOR	2	198860	61	.057"	165	50' 0"	Var. cam.	Cir. Brkr.
	EQUALISER CONNECTIONS	1	125050	61	.045	85	25' 0"	" "	None
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION								
	Eng. & Boiler Space	2	75850	37	.045"	75	150' 0"	Var. Cam.	
	Midship & For'd	2	125050	61	.045"	70	500' 0"	" "	
	Pump Rooms	2	9030	7	.036"	10	80' 0"	" "	
	After Qrtrs.	2	75850	37	.045"	60	120' 0"	" "	enck
	Running Lts.	2	9030	7	.036"	2.5	500' 0"	" "	
	Cargo Circuit	2	49020	19	.050"	15	500' 0"	" "	
	Gyro Compass	2	59940	37	.040"	20	500' 0"	" "	
	Fathometer	2	11340	7	.040"	9	500' 0"	" "	
	WIRELESS	See 240 Volt System							
	SEARCHLIGHT	2	9030	7	.036			Var. Cam.	
	MASTHEAD LIGHT	2	4494	7	.025			" "	
	SIDE LIGHTS	2	4494	7	.025			" "	
	COMPASS LIGHTS	2	4494	7	.025			" "	
	POOP LIGHTS	See After Quarters							
	CARGO LIGHTS	See Cargo Circuit							
	ARC LAMPS	None							
	HEATERS	None							

MOTOR CONDUCTORS. 240 Volt System

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
P 1	Port Cargo Pump	1	1,565,910	3 wires	.064"	930	340'	Varn. Cambrie	1000 Amp. Cir. Bkr.
P 2	Stbd " "	1	1,565,910	3 wires	.064"	930	400'	" "	1000 Amp. Cir. Bkr.
P 3	Cargo Stripping	1	657,860	127	.072"	338	360'	" "	400 Amp. Cir. Bkr.
P 4	Main Circulating	1	157,380	61	.050"	188	160'	" "	200 Amp. Fuse
P 5	For'd M.G. Motor	1	98,820	61	.040"	110	180'	" "	150 Amp. Fuse
P 6	After M.G. Motor	1	98,820	61	.040"	110	180'	" "	150 Amp. Fuse
P 7	For'd F.D. Blower	1	22,820	7	.057"	38	230'	" "	40 Amp. Fuse
P 8	After F.D. Blower	1	22,820	7	.057"	38	250'	" "	40 Amp. Fuse
P 9	Aux. Cond. Circ.	1	22,820	7	.057"	38	140'	" "	40 Amp. Fuse
P 10	Turbine Turning	1	38,950	19	.045"	46	130'	" "	60 Amp. Fuse
P 11	Main Condensate #1	1	59,940	37	.040"	74	170'	" "	75 Amp. Fuse
P 12	Main Condensate #2	1	59,940	37	.040"	74	170'	" "	75 Amp. Fuse
P 13	Lub. Oil Service	1	22,820	7	.057"	38	180'	" "	40 Amp. Fuse
P 14	Spare								
P 15	Workshop	3	22,820	7	.057"	38	180'	" "	40 Amp. Fuse
P 16	Gen. Service	1	22,820	7	.057"	38	130'	" "	40 Amp. Fuse
P 17	Refrig. Comp.	1	11,340	7	.040"	19	210'	" "	25 Amp. Fuse
P 18	Fuel Oil Service #1	1	9,030	7	.036"	14	220'	" "	20 Amp. Fuse
P 19	Fuel Oil Service #2	1	9,030	7	.036"	14	220'	" "	20 Amp. Fuse
P 20	Sanitary Pump	1	11,340	7	.040"	14	110'	" "	20 Amp. Fuse
P 21	Air Compressor	1	9,030	7	.036"	12	180'	" "	20 Amp. Fuse
P 23	Gyro Pilot Motor	1	11,340	7	.040"	12	220'	" "	20 Amp. Fuse
P 24	L.O. Purifier	1	4,494	7	.025"	8	220'	" "	10 Amp. Fuse
P 25	Pump Room Vent	1	4,494	7	.025"	8	120'	" "	10 Amp. Fuse
P 26	Gland Exhauster	1	4,494	7	.025"	4	150'	" "	10 Amp. Fuse
P 27	Crews Qrtrs. Vent	6	11,340	7	.040"	16	280'	" "	25 Amp. Fuse
P 28	Fresh Water Pump	1	4,494	7	.025"	2	200'	" "	10 Amp. Fuse
P 29	Wash Water Pump	1	4,494	7	.025"	2	240'	" "	10 Amp. Fuse
P 30	Radio Feeder	-	30,780	19	.040"	12	540'	" "	20 Amp. Fuse
P 32	Galley Range	-	30,780	19	.040"	40	100'	" "	40 Amp. Fuse
P 34	Shore Line	-	521,970	127	.064"	400	100'	" "	400 Amp. Cir. Bkr.
	Main Gen. Arm		2,087,880	4 wires	.064	1300	100'	" "	1600 Amp. Cir. Bkr.
	Main Gen. Equal		1,043,940	2 wires	.064	650	50'	" "	None
	Main Gen. Sh.		18,060	7	.050	-	100'	" "	None

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All Conductors are of annealed copper ^{equal} conforming to British Standard Specification No. 7.

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

The foregoing is a correct description.

Same as Below Electrical Engineers. Date Same as Below.

COMPASSES.

Distance between electric generators or motors and standard compass 18' 0" to Master Gyro Compass

Distance between electric generators or motors and steering compass 320' 0" " " " "

The nearest cables to the compasses are as follows:—

A cable carrying .125 Amperes 0' 6" feet from standard compass 0' 6" feet from steering compass (Binnacle Lts. 15W).

A cable carrying .42 Amperes 4' 6" feet from standard compass 3' 4" feet from steering compass. (Wheel house Lt. 50W)

A cable carrying .01 Amperes 4' 0" feet from standard compass 4' 6" feet from steering compass. (Engine R.P.M. indicator)

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 None degrees on course in the case of the standard compass, and None degrees on course in the case of the steering compass.

D. D. Thomas, Bethlehem Shipbuilding Corp., Ltd., Builder's Signature. Date 14th Sept., 1938. Sparrows Point Plant.

Is this installation a duplicate of a previous case No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. The electric generating machinery of this vessel

has not been built under Special Survey but has been examined and complies with the Society's rules and the workmanship and material are good. The generating units and fittings, stated to have been tested and certified at the manufacturers' works by the Surveyors to the American Bureau of Shipping.

The generators and all electrical equipment, cables and conduit have been installed in compliance with the rules of this Society, the material used and workmanship throughout is of good quality and having been thoroughly tested out under full working conditions is eligible in my opinion to be classed and duly recorded.

Noted L.J. 10/11/38

Total Capacity of Generators 600 Kilowatts.

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

C. J. N. Astu Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK OCT 26 1938

Assigned Elec. light JWB

1m. 126. Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minutes.)



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