

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.

Date of writing Report Dec. 27th. 19 57 When handed in at Local Office 24/3/ 19 58 Port of Baltimore

No. in Survey held at Sparrows Pt., Md. Date, First Survey Aug. 19th. Last Survey Dec. 17th. 19 57  
Reg. Book.

(No. of Visits 14)

42454 on the S.S. "GULFQUEEN"

Tons { Gross 20466  
Net 12851

Built at Sparrows Pt., Md. By whom built Bethlehem Shipbuilding Inc. Yard No. 4553 When built 1957

Owners Black Steamships, Inc. Port belonging to Wilmington, Delaware.

Installation fitted by Bethlehem Shipbuilding, Inc. Sparrows Pt. When fitted 1957

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

Plans, have they been submitted and approved. Yes. System of Distribution & Voltage of Lighting 117  
Cooking 450 Power 450 2 Wire Single Phase for Branch Circuits.  
Heating 450 ~~D.C.~~ A.C., Lighting AC. Power AC. If A.C. state frequency 60 Cycle.Prime Movers, has the governing been found as per Rule when full load is thrown on and off. Yes. Are turbine emergency governors fitted with a trip switch. Yes. Generators, are they compound wound. - and level compounded under working conditions. -  
if not compound wound state distance between generators. - and from switchboard. - Are the generators arranged to run in parallel. Yes. Exciter  
are ~~shunt~~ field regulators provided. Yes. 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. Yes. Have certificates of test for machines under 100 kw. been supplied. Yes. and the results found as per Rule. A.I. EE. Standards.

Position of Generators. AFT Machinery Space Flat, In Flat, Midships.

is the ventilation in way of generators satisfactory. Yes. are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil. Yes. Switchboards, where are main switchboards placed Starboard Side Aft.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil. Yes. what insulation is used for the panels. Dead Front Metal Faced. 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 construction as per Rule, including locking of screws and nuts. Yes. Description of Main Switchgear for each generator and arrangement of equaliser switches. Dead front three pole air circuit breakers, with disconnected Links and Reverse Power Trips.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit. All Circuits protected by dead front 2 &amp; 3 Pole air circuit Breakers, thermal overload &amp; Magnetic short circuit protection.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. Yes. Instruments on main switchboard. Two ammeters. Two voltmeters. Two synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection. - Earth Testing, state means provided. Detection Lamps &amp; Push Buttons.

Switches, Circuit Breakers and Fuses, are they as per Rule. AI EE Standards. are the fuses an Approved Type. Yes. make of fuses. STD NEC are all fuses labelled. Yes. If circuit breakers are provided for the generators, at what overload do they operate. 1025 Amps Long Time Delay Time For GENR 5-5 Secs. 2400 AMPS Short Time Delay and at what current do the reversed current protective devices operate. AFF " 5-2 Secs.

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule. AI EE. Standards

Cables, are they insulated and protected as per Rule. A.I.EE Standards, 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% are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets. No. Pressure Type. Are all paper insulated and varnished cambric insulated cables sealed at the ends. 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 any 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. No. or of the "HR" type. No. State how the cables are supported or protected. In Conduits on walkways also on flat Bar hangers.

Are all lead sheaths, armouring and conduits effectually bonded and earthed. 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. Refrigerated chambers, are the cables and fittings as per Rule. Yes.



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position One 100KW Diesel, Starboard Side Aft boat deck. A.I.EE Standards. Navigation Lamps, are they separately wired. Yes. controlled by separate double pole switches 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. Is an alternative supply provided. Yes. Secondary Batteries, are they constructed and fitted as per Rule. - are they adequately ventilated. - state 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 any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. No if so, how are they protected. In safe locations. and where are the controlling switches fitted. Are all fittings suitably ventilated. Yes. Searchlight Lamps, No. of 2, whether fixed or portable. 1 each, are they of the carbon arc or of the filament type. Filament. Heating and Cooking, is the general construction as per Rule. Yes. A.I.EE. are the frames effectually earthed. Yes. are heaters in the accommodation of the convection type. - Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. Yes. Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment. 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 sea services been supplied and the results found as per Rule. Yes. A.I.EE Standards. 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 an Approved Cartridge Type. Yes, make of fuse. Standard, Nec. 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. A.I.EE. Bottom Shell Bottom Shell E.S.D., if fitted state maker. Raytheon location of transmitter between Frames 52-53 and receiver between Frames Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and 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	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	General Electric Co.	500 KW.	450 AC	800	1200	Turbine	General Electric Co.
EMERGENCY ROTARY TRANSFORMER	1	Elect. Machinery Mfg. Co.	100 KW.	450 AC	160	1800	Diesel	Cummins Diesel Eng. Inc.

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	500 KW.	4	0.942	800	A.I.EE 1068	35'	V.C.	Leaded-Bronze Armour
" " EQUALISER ...								
EMERGENCY GENERATOR ...	100KW	1	0.166	160	215	25'	VC	Leaded Bronze Armour
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

#### MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.								
Main Switchboard to emergency Switchboard	1	0.1659	192.8	215	130'	VC	Leaded Bronze Armour	
" " to forward Switchboard	"	0.1045	68	163	430'	"	" " "	
Emergency Switchboard to forward Switchb.	"	0.0163	18.7	52	382'	"	" " "	
Main Switchboard to 450/117V Transf. P.B.I.	"	0.0521	73.8	106	20'	"	" " "	
Emergency Switchboard to 450/117V " "	"	0.0082	19.8	35	28'	"	" " "	
Ford Switchboard to 450/117V " "	"	0.0082	122	35	15'	"	" " "	
Main Switchboard to Galley Panel	"	0.0521	77.8	106	65'	"	" " "	
" " to Machine Shop Panel	"	0.0082	12.8	35	32'	"	" " "	
" " to After Quarters Vent Panel	"	0.0163	25.15	52	162'	"	" " "	
" " to Mach. Spaces Vent Panel	"	0.1045	78.4	163	120'	"	" " "	
Shore Line	"	0.1659	200.	215	140'	"	" " "	

#### LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Upper Deck Lighting Panel Starb.	1	0.1659	78.5	215	103'	V.C.	Leaded Bronze Armour
" " " " Port.	1	0.1659	42.60	215	56'	VC	" Basket Weave
Poop Deck Lighting Panel Starb.	1	0.1659	64.7	215	113'	"	" " "
" " " " Port.	1	0.1659	30.9	215	47'	"	" " "
Engine Room Lighting Panel	1	0.0521	49.40	106	25'	"	" " "
Boiler Room Lighting Panel	1	0.0521	32.20	106	85'	"	" " "
Steering Room Lighting Panel	1	0.013	7.13	46	73'	"	" " "
Midship Lighting Panel	1	0.0521	51.84	106	23'	"	" " "
" " Service "	1	0.0521	28.83	106	5'	"	" " "
Forecastle Lighting Panel	1	0.0329	14.78	80	190'	"	" " "
Ford Pump Room Lighting	1	0.013	6.08	46	180'	"	" " "
Radio Feeder	1	0.0051	4.55	23	70'	"	" " "
Radar Feeder	1	0.013	18.40	46	45'	"	" " "
Navigating Lights Panel	1	0.008	2.60	35	7'	"	" " "
Echo Sounding System	1	0.0032	0.78	14	25'	R	" " "
Searchlight	1	0.0051	8.70	27	65'	VC	" " "
Cargo Lights Ford.	1	0.013	10.44	42	350'	R	" " "
Cargo Lights Aft.	1	0.013	5.22	42	400'	"	" " "
Gyro Pilot	1	0.0051	3.0	23	70'	VC	" " "
Masthead Lights	1	0.003	0.52	14	175'	R	" " "
Sidelights	1	0.003	0.582	14	60'	"	" " "
Range Light	1	0.003	0.582	14	75'	"	" " "
Stern Light	1	0.003	0.52	14	510'	"	" " "
Aft. Pump Room Lighting Lower	1	0.0051	7.82	27	122'	VC	" " "
Aft. Pump Room Lighting Upper	1	0.0051	5.22	27	67'	"	" " "
Cargo Lights Midships	1	0.013	10.44	42	325'	R	" " "

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Main Circulating Pump	1	125	1	0.1659	175	215	116'	VC Leaded Bronze Armour
Forced Draught Fan Port.	1	75	1	0.1045	87	163	135'	" Basket Weave
" " " Starb.	1	75	1	0.1045	87	163	130'	" " "
Air Compressor (Ships Service)	1	30	1	0.0329	322	80	105'	" " "
Fuel Oil Transfer Pump	1	30	1	0.0329	398	80	115'	" " "
Lub Oil Service Pump Ford.	1	25	1	0.0163	318	52	165'	" " "
" " " " Aft.	1	25	1	0.0163	318	52	52'	" " "
Main Condensate Pump, In' Bd.	1	30	1	0.0329	372	80	104'	" " "
" " " Out' Bd.	1	30	1	0.0329	37.2	80	107'	" " "
Fuel Oil Service Pump Ford.	1	20	1	0.0163	253	52	95'	" " "
" " " " Aft.	1	20	1	0.0163	253	52	100'	" " "
Bilge & Ballast Pump	1	5	1	0.0051	106	23	46'	" " "
Aux. Condenser Circ. Pump Ford.	1	15	1	0.0082	24.2	35	40'	" " "
" " " " Aft.	1	15	1	0.0082	24.2	35	45'	" " "
Sanitary Pump	1	75	1	0.0051	9.8	23	100'	" " "
Turning Gear	1	75	1	0.0051	10.4	23	53'	" " "
Salt Water Service PP. In' Bd.	1	20	1	0.0163	25.8	52	95'	" " "
" " " " Out' Bd.	1	20	1	0.0163	25.8	52	90'	" " "
Steering Gear Feeder Port	1	35.25	1	0.0329	49.6	80	85'	" " "
" " " Starb.	1	35.25	1	0.0329	49.6	80	85'	" " "
Steering Gear Pump Port	1	30	1	0.0329	40.5	80	30'	" " "
" " " Starb.	1	30	1	0.0329	40.5	80	35'	" " "
Air Compressor (Control)	2	5	1	0.0051	7.	23	100'	" " "
Aux. Condensate PP. Ford.	1	15	1	0.0082	24.2	35	52'	" " "
" " " Aft.	1	15	1	0.0082	24.2	35	55'	" " "



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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.

*[Signature]*  
BETHLEHEM-SPARROWS POINT  
SHIPYARD, INC.  
SPARROWS POINT, MD.

Electrical Contractors.

Date

#### COMPASSES.

Have the compasses been adjusted under working conditions. Yes.

*[Signature]*  
BETHLEHEM-SPARROWS POINT  
SHIPYARD, INC.  
SPARROWS POINT, MD.

Builder's Signature.

Date

Have the foregoing descriptions and schedules been verified and found correct. Yes.

Is this installation a duplicate of a previous case. Yes. If so, state name of vessel. SS. "GULFKING"

Plans. Are approved plans forwarded herewith. No. If not, state date of approval. April 26th. 1957

Certificates. Are certificates of test for motors engaged on essential sea 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 this vessel has been installed under special survey in accordance with the Society's Rules and Secretary's Letters.

All fittings, cables & electrical units have been fitted in accordance with the above rules and to the Standards & Regulations of the A.I.E.E.

The Materials & workmanship throughout are good. On completion of installation the entire electrical system was tested under working conditions and found satisfactory.

The turbine governors were tested for overspeed & low pressure on cut out, the breakers were tested for overload & reverse current & all found satisfactory. The generators were paralleled & Load sharing proved satisfactory, and in accordance with the Rules.

Spare Gear in accordance with Rule requirements.

In our opinion the electrical installation is eligible to be classed.

Approved Plans retained for Hulls 4554 & 4555.

Total Capacity of Generators. 2 at 500 KW. 1 at 100 KW. Kilowatts.

The amount of Fee ... \$664.00

When applied for,

Mar. 25, 1958

Travelling Expenses (if any) \$40.00

When received,

19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*[Signature]*



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