

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 3 APR 1950

Date of writing Report 22nd Feb., 1950 When handed in at Local Office 28th Feb., 1950 Port of Baltimore, Maryland

No. in Survey held at Sparrows Point, Maryland Date, First Survey 8th November '49 East Survey 14th February 1950
Reg. Book. (No. of Visits 7)

on the S.S. "SAN TOME" Tons { Gross 17902 Net 11068
Built at Sparrows Point, Maryland By whom built Bethlehem Sparrows Point Shipyards, Inc. Yard No. 4471 When built 1950

Owners Afran Transport Company Port belonging to Monrovia

Installation fitted by Bethlehem Sparrows Point Shipyard, Inc. When fitted 1949 & 1950

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 A.C. Voltage of Lighting 117

Heating Power 450 D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 60

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 A.C., and level compounded under working conditions -

if not compound wound state distance between generators A.C. and from switchboard - Are the generators arranged to run in parallel Yes, are short 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 A.I.E.E. and the results found as per Rule A.I.E.E.

Position of Generators One forward of other in After Machinery Space

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 and adjacent to generators.

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 Yes, 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 disconnect links.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit All Circuits protected by Dead Front Air Circuit Breakers, Thermal Overload and Magnetic Short Circuit Protection.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule - Instruments on main switchboard Two ammeters Three voltmeters Three 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 Ground Detection Lamps and Push Button.

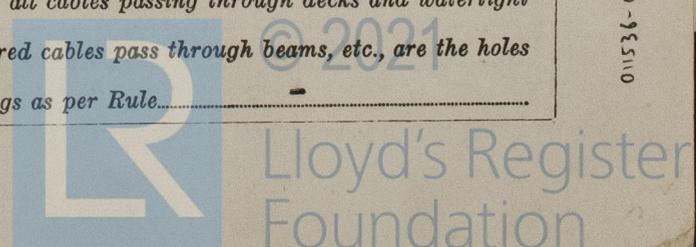
Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses Std. N.E.C., are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 825 Amps., and at what value current do the reversed power protective devices operate 2 seconds of Reverse Power

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes

Cables, are they insulated and protected as per Rule Yes, if otherwise than as per Rule are they of an Approved Type - state maximum fall of pressure between bus bars and any point under maximum load A.C., 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 No, if so, are they adequately protected - Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit No

of the "HR" type - State how the cables are supported or protected In Brass Pipe on gangways, otherwise exposed in 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 - Refrigerated chambers, are the cables and fittings as per Rule -



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule.....**Yes**..... Emergency Supply, state position
Upper Engine Room-75 K.W. Diesel

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..... **None**....., are they adequately ventilated..... **-**.....
state battery capacity in ampere hours..... **-**.....

Fittings, are all fittings on weather decks, ~~in stowholds~~ 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..... **-**.....

and where are the controlling switches fitted..... **10 ft min. clear of all gas openings** Are all fittings suitably ventilated..... **Yes**.....

Searchlight Lamps, No. of **Two**....., whether fixed or portable..... **one each**....., are they of the carbon arc or of the filament type..... **Filament**.....

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..... **none**..... 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..... **Attached**.....
Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule..... **A.I.E.E.**.....

Control Gear and Resistances, are they constructed and fitted as per Rule..... 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..... **Std. N.E.C.**..... 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..... **Yes**.....

E.S.D., if fitted state maker..... **Bludworth**..... location of transmitter..... **bet'n frs 49-50 eng and receiver**..... **Same as Transmitter**.....
room.....

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	Two	Westinghouse	400	450 AC	641	1200	Turbine	Westinghouse
Auxiliary EMERGENCY	One	Westinghouse	75	450 AC	120	1200	Diesel	Cummins
ROTARY TRANSFORMER	Two	Westinghouse	5	120 AC	41.6	1800	Motor	Westinghouse

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH IN 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.	A.I.E.E. Rule.			
MAIN GENERATOR	400	3	.7068	803 ✓	837	28	V.C.	Lead and Bronze Armoured Basket Weave
" " EQUALISER								
Auxiliary EMERGENCY GENERATOR	75	1	.1045	150 ✓	158	25	"	" " " "
ROTARY TRANSFORMER: MOTOR	7.5HP	1	.0051	10.5 ✓	22	35	"	" " " "
" " GENERATOR... ..	5	1	.0206	41.6 ✓	55.5	34	"	" " " "

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

DESCRIPTION.							
Main Switchboard to Forward Switchboard	1	.1045	57.6 ✓	158	425	V.C.	Lead and Bronze Armoured Basket Weave
Main Switchboard to Emergency Switchboard	1	.1045	31.6 ✓	158	20	"	" " " "
Emergency Switchboard to For'd Switchboard	1	.0206	12.9 ✓	55.5	410	"	" " " "
Machine Shop Panel	1	.0130	23.4 ✓	41	20	"	" " " "
Boiler Room Panel	1	.0051	1.72 ✓	22	75	"	" " " "
Machinery Space Vent Panel	1	.0521	59.0 ✓	99	120	"	" " " "
After Quarters Vent Panel	1	.0130	16.9 ✓	41	45	"	" " " "
Galley Power Panel	1	.0521	73.3 ✓	99	105	"	" " " "

S.S. "SAN TOME"

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Conductors		Maximum Current in Amperes in the A.I.B.H.	Circuit Rule	One Way Length	Insul- ation	Protective Covering	
			No. in Parallel	Sec. Area sq. ins						
Priming Pump-Inbd.	1	1½	1	.0051	2.2 ✓	22	150	V.C.	Lead and Bronze Armoured Basket Weave	
Priming Pump Outbd.	1	1½	1	.0051	1.0 ✓	22	80	"	" " "	
Steering Gear Motor-Port	1	50	1	.0521	58.1 ✓	99	135	"	" " "	
Steering Gear Motor-Std	1	50	1	.0521	58.1 ✓	99	95	"	" " "	
Shaper	1	7½	1	.0051	10.0 ✓	22	35	"	" " "	
Lathe	1	5	1	.0051	7.5 ✓	22	30	"	" " "	
Grinder	1	3	1	.0051	4.5 ✓	22	35	"	" " "	
Drill Press	1	1	1	.0051	1.4 ✓	22	35	"	" " "	



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Foundation

Portable Water Pump	1	2	1	.0051	2.3 ✓	22	50	"	" " "
Inbd Oil Purifier	1	1½	1	.0051	2.3 ✓	22	55	"	" " "

9270
0226

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

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		One Way APPROX. LENGTH IN FEET.	INSULATION.	PROTECTIVE COVERING.	
	No. in Parallel per Pole.	Sectional Area Sq. Ins.	In the Circuit.	A. I. E. E. Rule.			Lead	and Bronze Armoured Basket Weave
Upper Deck Lighting	1	.1045	52.4	158	135	V.C.	Lead and Bronze Armoured Basket Weave	
Poop Deck Lighting	1	.0521	44.2	99	115	"	" " " "	
Engine Room Lighting	1	.0521	45.7	99	15	"	" " " "	
Midship Lighting	1	.0521	55.1	99	25	"	" " " "	
Boiler Room Lighting	1	.0521	30.0	99	105	"	" " " "	
Midship Emergency Lighting	1	.0206	23.0	55.5	45	"	" " " "	
After Quarter Lighting	1	.0130	11.7	41	75	"	" " " "	
Engine Room Emergency Lighting	1	.0051	13.0	22	15	"	" " " "	
Boiler Room Emergency Lighting	1	.0051	8.4	22	100	"	" " " "	
Radar Feed	1	.0051	3.0	22	55	"	" " " "	
Navigating Light Panel	1	.0082	2.6	30	45	"	" " " "	
Radar Feeder	1	.0130	12.0	41	40	"	" " " "	
Fathometer (Echo Sounding)	1	.0051	3.5	22	25	"	" " " "	
Searchlight	1	.0051	8.7	22	50	"	" " " "	
Masthead Light	1	.0032	0.52	11.5	175	"	" " " "	
Sidelights	1	.0032	0.52	11.5	45	"	" " " "	
Cargo Lights - Forward	1	.0082	5.2	30	205	"	" " " "	
Pump Room - Aft	1	.0130	5.2	41	200	"	" " " "	
Portlights	1	.0206	6.7	55.5	210	"	" " " "	

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.									
Main Cond. Circulating Pump	1	125	1	.1659	155	217	155	"	"	"	"
Forced Draft Blower-Port	1	83	1	.1659	100	217	120	"	"	"	"
Forced Draft Blower-Std	1	83	1	.1659	100	217	100	"	"	"	"
Fire & General Service Pump	1	50	1	.0521	59.5	99	75	"	"	"	"
Fuel Oil & Transfer Pump	1	30	1	.0521	40.4	99	165	"	"	"	"
Lube Oil Service Pump-Fwd	1	25	1	.0206	32.2	55.5	45	"	"	"	"
Lube Oil Service Pump-Aft	1	25	1	.0206	32.2	55.5	40	"	"	"	"
Ship Service Air Compressor	1	25	1	.0206	31.3	55.5	130	"	"	"	"
Main Cond. Condens. Pump-Inbd.	1	20	1	.0130	25.1	41	140	"	"	"	"
Main Cond. Condens. Pump-Outbd.	1	20	1	.0130	25.1	41	145	"	"	"	"
Atmos. Exh. Cond. Cir. Pump	1	20	1	.0130	25.1	41	135	"	"	"	"
Water Service Pump - Fwd.	1	15	1	.0130	19.2	41	120	"	"	"	"
Water Service Pump - Aft	1	15	1	.0130	19.2	41	125	"	"	"	"
Fuel Oil Service Pump-Inbd.	1	15	1	.0130	19.3	41	175	"	"	"	"
Fuel Oil Service Pump-Outbd.	1	15	1	.0130	19.3	41	170	"	"	"	"
Bilge & Ballast Pump	1	15	1	.0130	19.2	41	155	"	"	"	"
Aux. Cond. Cir. Pump - Fwd.	1	10	1	.0051	12.5	22	60	"	"	"	"
Aux. Cond. Cir. Pump - Aft	1	10	1	.0051	12.5	22	55	"	"	"	"
Aux. Cond. Condensate Pump-Fwd	1	10	1	.0051	13.0	22	55	"	"	"	"
Aux. Cond. Condensate Pump-Aft	1	10	1	.0051	13.0	22	60	"	"	"	"
Cond. & Drain Transfer Pump Inbd	1	7½	1	.0051	10.5	22	130	"	"	"	"
Cond. & Drain Transfer Pump Outd	1	7½	1	.0051	10.5	22	130	"	"	"	"
Sanitary Pump	1	7½	1	.0051	10.5	22	120	"	"	"	"
Ship Ser. Refrig. Comp. - Inbd.	1	7½	1	.0051	10.0	22	45	"	"	"	"
Ship Ser. Refrig. Comp. - Outd	1	7½	1	.0051	10.0	22	60	"	"	"	"
Turning Gear	1	7½	1	.0051	10.0	22	70	"	"	"	"
Comb. Control Air Compressor	1	5	1	.0051	6.9	22	135	"	"	"	"
Distiller Cond. Pump - Fwd	1	3	1	.0051	4.0	22	75	"	"	"	"
Distiller Cond. Pump - Aft	1	3	1	.0051	4.0	22	65	"	"	"	"
Brine Overboard Disch. Pump Fwd	1	3	1	.0051	4.0	22	70	"	"	"	"
Brine Overboard Disch. Pump Aft	1	3	1	.0051	4.1	22	70	"	"	"	"
Fresh Water Pump - Fwd	1	3	1	.0051	4.1	22	60	"	"	"	"
Fresh Water Pump - Aft	1	3	1	.0051	3.0	22	50	"	"	"	"
Portable Water Pump	1	2	1	.0051	2.3	22	50	"	"	"	"
Lube Oil Purifier - Fwd	1	1½	1	.0051	2.3	22	55	"	"	"	"
Lube Oil Purifier - Aft	1	1½	1	.0051	2.3	22	60	"	"	"	"

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.

J. H. Hange

Electrical Contractors.

Date 3rd March, 1950

BETHLEHEM-SPARROWS POINT
 SHIPYARD, INC.
 SPARROWS POINT, MD.

COMPASSES.

Have the compasses been adjusted under working conditions. Yes

J. H. Hange

Builder's Signature.

Date 3rd March, 1950

BETHLEHEM-SPARROWS POINT
 SHIPYARD, INC.
 SPARROWS POINT, MD.

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 S.S. "JAHRA", "BURGAN", "CORO".

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

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 built under Special Survey in accordance with the Rules and Regulations of this Society. The electrical units with all fittings, appliances, cables and fastenings have been installed on board the vessel in compliance with the Rules.

The material and workmanship throughout are good. Upon completion the entire electrical system was examined under full load working conditions with satisfactory results.

The engine speed governors, over speed, reverse current and over current trips were satisfactorily tested and when generators were paralleled the load sharing was found satisfactory and in accordance with Section 21 of the Rules for Electrical Equipment. All circuits were satisfactorily megger tested.

The spare gear conforms to the Requirements of Section 22.

In my opinion the Electrical Equipment is eligible to be classed and recorded.

Copies of generator and motor test certificates attached hereto.

PLANS FORWARDED HEREWITH:-

One Line Diagram	Main Generator Distribution Switchboard
Upper Deck - Aft	Emergency Distribution Switchboard
Feeder List	Emergency Switchboard Wire Diagram
Single Line Diagram (Main, Fwd., Emergency Switchboards).	

Noted and 24/4/50.

Total Capacity of Generators 875 Kilowatts.

The amount of Fee ... £	:	When applied for,
Arranged Fee \$200.00	:	9 March 19 50
Travelling Expenses (if any) \$30.00	:	When received,
	:	- 19

C. H. Haman
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK MAR 15 1950

Assigned *ble. light*

2m.9.46.—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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