

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

16 SEP 1950

Received at London Office

Completed 28th Aug., 1950
 Date of writing Report 28th Aug., 1950 When handed in at Local Office 28th Aug., 1950 Port of Halifax, N. S.

No. in Survey held at Halifax, N. S. Date, First Survey 21st June, 1948 East Survey 10th August 1950
 Reg. Book.

(Number of Visits 24)

52483 on the Steel Twin Screw Motorship "BAHIA THETIS"

Tons { Gross 3830.75
 Net 2100.49

Built at Halifax, N. S. By whom built Halifax Shipyards, Ltd. Yard No. 18 When built 1950 Completed

Owners Argentine Government Port belonging to Buenos Aires

Electric Light Installation fitted by Halifax Shipyards, Ltd. Contract No. When fitted 1950 Completed

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire, Insulated.

Pressure of supply for Lighting 225 volts, Heating & Cooking- 225 volts, Power 225 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 temperature rise Yes, are they compound wound Yes

are they over compounded 5 per cent. Level compounded, 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

Have certificates of test results for machines under 100 kw. been submitted and approved (attached hereto) Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing 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 In E.R. on bottom platform 2 - 192 K.W. port & stbd. sides, aft
 1 - 106 K.W. Stbd. side, fwd. Em. Gen. in house is the ventilation on boat dk.

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 In E.R. on middle platform, along aft bulkhead

If the generators and main switch board 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 -

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

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 - is the non-hygroscopic insulating material of an approved

type - 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 Instrument & pilot lamp fuses only, temperature rise of

omnibus bars Yes, 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

2 - I.T.E. Type KC 1200 amp. 3-Pole Circuit Breakers & 1 - I.T.E. Type KB 800 Amp. 3-Pole Circuit Breaker, Centre Pole adjusted for equalizer service. Outgoing circuits:- Westinghouse "NOFUZ" 2-Pole Circuit Breakers

and 1 - 2-Pole S.T. switch and fuses. Are turbine driven generators fitted with emergency trip switch as per rule - Are cupboards or compartments containing switchboards composed of

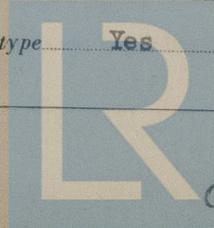
fire-resisting material or lined with approved material - Instruments on main switchboard 3 ammeters 4 volt-

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

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

Earth lamps and/or AIEEE Standards No. 45 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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Port of Halifax, N. S.

Continuation of Report No. 13, No. 6134 dated 28th August, 1950.

on the

M.V. "BAHIA THETIS" - HALIFAX SHIPYARDS LTD. HULL NO. 18

The following Certificates and Test Reports are forwarded herewith:-

- (1) Clv. Rpt. 7b:- 1 - 192 K.W. Generator, LLOYDS 6814-G.
- (2) Clv. Rpt. 7b:- 1 - 192 K.W. Generator, LLOYD'S 6815-G
- (3) Clv. Rpt. 7b:- 1 - 106 K.W. Generator, LLOYDS 6816-G.
- (4) Clv. Rpt. 10, No. C-6715: 1 - 20 K.W. Emergency Generator, LLOYDS 6855, Aug 1.49 R.S.H.
- (5) Tto. Rpt. 10:- 1 - Main Switchboard, LLOYDS 985 J.S. 22-8-49.
- (6) Mtl. Rpt. 10 & Test Report:- 1 - 10 H.P. D.C. Motor, Bilge & Ballast Pump, LLOYDS 5746, 9-8-48, D.J.A.
- (7) Mtl. Rpt. 10 & Test Report:- 1 - 20 H.P. D.C. Motor, Fire, Bilge & G.S. Pump, LLOYDS 5733, 19-8-48, W.N.
- (8) Mtl. Rpt. 10 & Test Reports:- 2 - 10 H.P. D.C. Motors, Salt Water Circulating Pumps, LLOYDS 5699, 2-6-48 D.J.A. & LLOYDS 5713, 3-6-48 W.N.
- (9) Mtl. Rpt. 10 & Test Reports: 3 - 15 H.P. D.C. Motors, Fresh Water Circulating Pumps, LLOYDS 5687, 25-5-48 D.J.A., LLOYDS 5682 & 5683, 21-5-48 W.N.
- (10) Mtl. Rpt. 10 & Test Reports:- 3 - 20 H.P. D.C. Motors, Lubricating Oil Pumps, LLOYDS 5729, 29-6-48 D.J.A., LLOYDS 5722, 22-6-48, W.N. & LLOYDS 5726, 25-6-48, W.N.
- (11) Mtl. Rpt. 10 & Test Reports:- 2 - 1/4 H.P. D.C. Motors, M.E. O.F. Transfer Pumps, LLOYDS 5695 & 5696 31-5-48 W.N.
- (12) Mtl. Rpt. 10, Rpt. 7b & Test Reports: 2 - 2 H.P. D.C. Motors, O.F. Transfer Pumps, LLOYDS 5673 29-4-48 D.J.A. & LLOYDS, 5670, 26-4-48 D.J.A.
- (13) Mtl. Rpt. 10 & Test Reports:- 2 - 1 1/2 H.P. D.C. Motors, Sanitary Pumps, LLOYDS 5795 & 5792 23-12-48 D.J.A.
- (14) Mtl. Rpt. 10 & Test Reports:- 2 - 1 H.P. D.C. Motors, Fresh Water Pumps, LLOYDS 5796 4-1-49 D.J.A. & LLOYDS 5960, 21-1-49 D.J.A.
- (15) Nwc. Rpt. 10, No. C.28675:- 1 - 31 H.P. D.C. Motor, Anchor Windlass, LLOYDS TEST NO. 18536, 16-2-49 L.R. J.C.W.
- (16) Tto. Rpt. 10 covering 10 Magnetic Starters fitted on board for services as noted. Also, please see Grk. Rpt. 10, No. C3167 (forwarded with Hfx. Rpt. 1 - No. 6134) for particulars of the two 15 H.P. pump motors of the electric hydraulic steering gear.

List of Approved Plans, forwarded (under separate cover):

- | | |
|--|--|
| (1) No. B16-E11 Gen. Arrgt. of Switchboard. | (7) No. 16-E5 Arrgt. of Emergency Supply for Lighting, Steering Motors & Bilge Pump. |
| (2) No. SB-123805 - Main Switchboard. | |
| (3) No. A16-E7 Gen. Arrgt. of Power Distribution Circuits. | (8) No. 16-EB Gen. Arrgt. of Navigation Lighting. |
| (4) No. D16-E12 Arrgt. of Supplies to Steering Motors. | (9) No. A16-E10 Cabin Call-up Annunciator System. |
| (5) No. 16-E6 Proposed Lighting Arrgts. | (10) No. 16-E2 Alarm Gong Wiring Diagram. |
| (6) SB.123833 Wiring Diagram for Main Switchboard. | |

A copy of Drwg. No. 16-E52 is also forwarded, showing wiring arrangement of additional Sanitary Pump and Two (2) additional Fresh Water Pumps as fitted. (Not shown on approved plan).

A copy of the Electrical Spare Gear List is also forwarded herewith.

Geo. Reddie
SURVEYOR TO LLOYD'S REGISTER.

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current protection devices been tested under working conditions ☒ Yes

construction, protection, insulation, material, and position of these as per rule ☒ Yes

Cables: Single, twin, concentric, or multicore. ☒ Single & are the cables insulated and protected as per Table No. 45

If the cables are insulated otherwise than as per Rule, are they of an approved type ☒ Yes

any point of the installation under maximum load ☒ 2 volts

area of 0.04 square inch and above provided with soldering sockets ☒ Yes

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 ☒ Yes, or waterproof insulating tape ☒ Yes

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 ☒ On perforated sheet steel trays, secured by suitable metal clips.

If cables are run in wood casings, are the casings and caps secured by screws ☒ Yes, are the cap screws of brass ☒ Yes, are the cables run in separate grooves ☒ 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 ☒ Yes, state the material of which the bushes are made ☒ Lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas ☒ Yes

are their connections made as per Rule ☒ Yes

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 generator and switchboard in house on boat deck. Emergency circuits connected direct to change-over switch in Emergency Generator Room. Generator driven by heavy oil engine, with battery or manual starting.

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 ☒ In tween decks and holds; W.T. fittings with strong metal guards.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected ☒ In magazine; flame proof fittings with strong metal guards (G.E.C. F16511, Buxton Test Cert. No. FLP739), how are the cables led L.C. steel wire braided cables, run in conduit.

where are the controlling switches situated ☒ G.E.C. S516 switch on 2nd Dk. alleyway, outside magazine.

are all fittings suitably ventilated ☒ Yes, 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 ☒ Yes, are air heaters constructed and fitted as per Rule ☒ Yes

Searchlight Lamps, No. of 1-12" signalling projector ☒ 1-12" signalling projector, whether fixed or portable ☒ Fixed, are their fittings as per Rule ☒ Yes

Arc Lamps, other than searchlight lamps, No. of ☒ 0, are their live parts insulated from the frame or case ☒ Yes, are their fittings as per Rule ☒ Yes

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 ☒ Yes

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

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing ☒ Yes

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 ☒ Yes

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 ☒ Not applicable

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

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

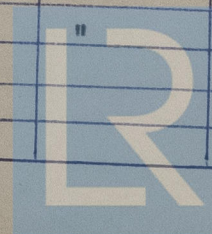
(See List forwarded herewith)

Area

Here

Ventilation Panel GG	1	.3	37	.103	160.7	240	180	R.I.	L.C., Armoured
" " GG1	1	.06	19	.064	44.5	83	132	"	"
" " GG2	1	.0521	7	.097	58.4	75	120	"	" Steel wire braided.
" " GG3	1	.0521	7	.097	57.8	75	420	"	"
E.R. Power Panel HH	1	.3	37	.103	191.5	240	130	"	" Armoured
" " HH1	1	.0521	7	.097	38.5	75	12	"	" Steel wire braided.
Dom. Refrig. " O	1	.1	19	.083	57.4	118	140	"	" Armoured
" " O1	1	.03	19	.044	9.4	53	10	"	"
E.R. Power " U	1	.3	37	.103	201	240	120	"	"
" " U1	1	.0828	19	.074	68	102	14	"	" Steel wire Braided
Shore Supply Box FF	1	.15	37	.072	max. 150	152	104	"	" Armoured.
LIGHTING PANELS									
Lwr. Dk. Lighting D	1	.0145	7	.052	33	37	64	R.I.	L.C., Armoured.
" " D1	1	.0145	7	.052	21	37	425	"	"
Crew's Accom. " E	1	.0145	7	.052	11	37	240	"	"
Boat Deck " F	1	.0145	7	.052	25	37	156	"	"
" " F1	1	.0145	7	.052	11.7	37	90	"	"
Upper Deck " L	1	.03	19	.044	48	53	82	"	"
" " L1	1	.007	7	.036	14	24	30	"	"
" " L2	1	.007	7	.036	12	24	55	"	"
" " L3	1	.007	7	.036	8	24	75	"	"
" " L4	1	.007	7	.036	14	24	200	"	"
Prom Deck " P	1	.03	19	.044	36.4	53	90	"	"
" " P1	1	.007	7	.036	9	24	100	"	"
" " P2	1	.007	7	.036	9.8	24	100	"	"
" " P3	1	.007	7	.036	9.1	24	160	"	"
" " P4	1	.007	7	.036	8.5	24	308	"	"
Final Sub-Circuits Accommodation Lighting	1	.002	7	.0192	2.5	5	max. 150	"	" Flame proof braided.
Cargo & Machy. space Lighting & exposed positions.	1	.003	7	.0234	2.5	10	max. 260	"	" Armoured.

Hfx. Rpt. 13 - No. 6134 - M.V. "BAHIA THETIS"



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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	Two	192	225	835	720	8 Cyl. Heavy Oil Engine	Diesel Oil	Above 150° F.	
AUXILIARY	One	106	225	471	720	5 Cyl. " " "	" "	" "	
EMERGENCY	One	20	230	87	1450	3 Cyl. " " "	" "	" "	
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING

MOTOR CONDUCTORS.

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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.

R. J. McLean

HALIFAX SHIPYARDS, LTD.
General Manager

Electrical Engineers.

Date AUG 31 1950

COMPASSES.

Distance between electric generators or motors and standard compass Radio Motor Alternator 20 ft.; Vent. Fans 30 ft.

Distance between electric generators or motors and steering compass " " " 22 ft.; " " 32 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 10 feet from standard compass 8 feet from steering compass.

A cable carrying 0.5 Ampères 10 feet from standard compass 8 feet from steering compass.

A cable carrying - Ampères - feet from standard compass - 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 Yes

The maximum deviation due to electric currents was found to be Nil degrees on - course in the case of the standard compass, and - degrees on HALIFAX SHIPYARDS, LTD. course in the case of the steering compass.

R. J. McLean

General Manager

Builder's Signature.

Date AUG 31 1950

Is this installation a duplicate of a previous case Yes

If so, state name of vessel.

M.V. "BAHIA AGUIRRE"- Hfx. Rpt. 13- No. 6110

M.V. "BAHIA BUEN SUCESO" " " " No. 6117

General Remarks (State quality of workmanship, opinions as to class, &c. The Electrical Equipment of this vessel has been made, tested and installed on board in accordance with or equivalent to the Approved Plans and the Society's Rules, and/or AIEE Standards No. 45 Specification.

The materials and workmanship are good, and the installation has been tested out under full working conditions and found in good order. It is therefore recommended for the favourable consideration of the Committee that the Electrical Equipment of this vessel, in conjunction with the Main Machinery, is eligible, in my opinion, to be classed * LMC 8,50.

NOTE: For list of Lloyd's and Makers Test Certificates, also Approved Plans, forwarded herewith, please see Continuation Sheet 9a, attached hereto.

Noted *SW* 28/9/50.

Total Capacity of Generators 510 Kilowatts.

The amount of Fee ... \$437.00

When applied for, 31st Aug. 1950

Travelling Expenses (if any) \$ 22.00

When received, 19

Geo. Reddie
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 29 SEP 1950

Assigned *See minute on L.C. Rpt.*