

TECHNICAL MANUAL

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT,
AND GENERAL SUPPORT MAINTENANCE MANUAL**

**INTERCOMMUNICATION STATIONS
LS-518A/SIC (NSN 5830-01-018-1202)**

AND

LS-519A/SIC (NSN 5830-01-020-6280)

AND

**TEST SET, INTERCOMMUNICATION
TS-3990/SIC (NSN 6625-01-126-4886)**

Reproduction for non-military use of the information or illustrations contained in this publication is not permitted. The policy for military use reproduction is established for the Army in AR 380-5, for the Navy and Marine Corp in OPNAVINST 5510.1B, and the Air Force in Air Force Regulation 205.1.

TM 11-5830-258-14

Technical Manual

No. 11-5830-258-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 28 June 1983

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT,
AND GENERAL SUPPORT MAINTENANCE MANUAL
INTERCOMMUNICATION STATIONS
LS-518A/SIC (NSN 5830-01-018-1202)
AND
LS-519A/SIC (NSN 5830-01-020-6280)
AND
TEST SET, INTERCOMMUNICATION
TS-3990/SIC (NSN 6625-01-126-4886)**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703.

In either case, a reply will be furnished direct to you.

This manual is an authentication of the manufacturer's commercial literature which, through usage, has been found to cover the data required to operate and maintain the equipment. Since the manual was not prepared in accordance with MIL-SPECS and AR 310-3, the format has not been structured to consider levels of maintenance, nor is it structured to the normal style of military publications.

TABLE OF CONTENTS

CHAPTER	PAGE	CHAPTER	PAGE
TABLE OF CONTENTS	i	3-25. Pushbutton Selector Switch Operation....	3-8
LIST OF ILLUSTRATIONS.....	iii	4 SCHEDULED MAINTENANCE	4-1
LIST OF TABLES.....	iii	4-1. Introduction	4-1
0 INTRODUCTION	0-1	4-3. Scheduled Preventive Maintenance Procedures.....	4-1
1 GENERAL INFORMATION.....	1-1	4-5. Scheduled Performance Test Instructions.....	4-1
1-1. Introduction	1-1	4-7. Malfunctions.....	4-2
1-4. Equipment Description	1-1	5 TROUBLESHOOTING.....	5-1
1-9. Reference Data	1-1	5-1. Introduction	5-1
1-11. Equipment Supplied	1-1	5-3. Troubleshooting Indexes.....	5-1
1-13. Equipment Required But Not Supplied....	1-2	5-6. Maintenance Turn-On and Test Procedure.....	5-1
1-15. Field and Factory Changes.....	1-2	5-8. General Trouble- shooting Procedures.....	5-9
2 OPERATION	2-1	5-10. Power Supply and 22 Volt Regulator	5-9
2-1. Introduction	2-1	5-12. Audio Amplifier.....	5-10
2-3. Controls and Indicators.....	2-1	5-14. Signal Circuits	5-11
2-5. Operating Procedures.....	2-1	5-19. Parallel Operation.....	5-12
2-7. Communication Between Two Master Stations.....	2-4	5-21. Handsfree Operation	5-12
2-11. Parallel Operation of Two Master Stations.....	2-4	5-24. Remote Loudspeaker Operation	5-12
2-12. Handsfree Operation of the Master Station.....	2-4	5-26. Pushbutton Selector Switch Assembly ..	5-12
2-13. Handsfree Operation with Other Type Intercommunication Station	2-5	6 CORRECTIVE MAINTENANCE	6-1
2-14. Master Station Operation with Remote Loudspeaker Stations.	2-5	6-1. Introduction	6-1
3 FUNCTIONAL DESCRIPTION	3-1	6-4. Removal.....	6-1
3-1. Introduction	3-1	6-6. Adjustments	6-1
3-3. Overall Functional Analysis.....	3-1	6-7. Pushbutton Selector Switch Assembly	6-1
3-7. Major Circuit Functional Analysis	3-1	6-11. Lubrication.....	6-1
3-10. Power Supply and 22 Volt Regulator	3-3	6-12. Parts Inspection and Rest	6-2
3-11. Audio Amplifier.....	3-3	6-13. Resistors	6-2
3-13. Signal Circuits.....	3-5	6-14. Capacitors.....	6-2
3-17. Parallel Operation.....	3-5	6-15. Diodes	6-2
3-19. Handsfree Operation	3-5	6-16. Transistors.....	6-2
3-22. Remote Loudspeaker Operation	3-8	6-17. Switches	6-2
		6-18. Relays.....	6-2
		6-19. Parts Replacement.....	6-2

TABLE OF CONTENTS (CONTD.)

CHAPTER	PAGE	CHAPTER	PAGE
7 PARTS LIST	7-1	8-14. Mounting of Units	8-2
7-1. Introduction	7-1	8-15. Mounting on Bulkhead	8-2
7-3. List of Major Units.....	7-1	8-16. Mounting in Panel.....	8-2
7-5. Parts List	7-1	8-17. Terminal Tubes	8-2
7-7. Common Items List	7-1	8-18. Inspection.....	8-2
7-9. Attaching Hardware	7-1	8-20. Installation Checkout	8-2
7-11. List of Manufacturers.....	7-1	8-21. Testing of Lines	8-2
7-13. Cross Reference Index.....	7-43	8-22. Replacing Front Panel Chassis Assembly	8-2
8 INSTALLATION	8-1	8-23. Operational Checks.....	8-17
8-1. Introduction	8-1	8-24. Station Designation Strip	8-17
8-3. Tools and Test Equipment Required.....	8-1	8-26. System Variations	8-17
8-5. Site Selection and Preparation	8-1		
8-7. Unpacking and Handling.....	8-1	APPENDIX A REFERENCES.....	A-1
8-9. Power Requirements and Distribution.....	8-2		
8-11. Installation Requirements	8-2	APPENDIX B MAINTENANCE ALLOCATION	B-1
8-13. Dressing Up Ship's Cable	8-2	INDEX	Index 1

LIST OF ILLUSTRATIONS

NUMBER	TITLE	PAGE
1-1.	Intercommunication Stations Type LS-518A/SIC and Type LS-519A/SIC, Interrelationship of Units.....	1-0
2-1.	Intercommunication Station Type LS-518A/SIC Operator Control and Indicators.	2-2
2-2.	Intercommunication Station Type LS-519A/SIC Operator Controls and Indicators.	2-3
3-1.	Overall Block Diagram	3-2
3-2.	Power Supply and 22 Volt Regulator, Block Diagram.....	3-4
3-3.	Audio Amplifier, Block Diagram	3-4
3-4.	Signal Operation, Simplified Schematic.....	3-6
3-5.	Parallel Operation, Simplified Schematic.....	3-7
3-6.	Handsfree Operation, Simplified Schematic	3-9
3-7.	Remote Loudspeaker Operation, Simplified Schematic	3-10
3-8.	Pushbutton Select Switch Assembly	3-11
5-1.	Master Station and Test Fixture, Connected	5-2
5-2.	Audio Amplifier, Test Setup	5-10
5-3.	Intercommunication Stations LS-518A/SIC and LS-519A/SIC, Schematic Diagram	5-13

LIST OF ILLUSTRATIONS (CONTD.)

NUMBER	TITLE	PAGE
5-4.	Test Fixture, Schematic Diagram	5-19
5-5.	Test Fixture, Simplified Schematic, Interface with Intercommunication Station.....	5-21
6-1.	Intercommunication Station LS-518A/SIC, Wiring Diagram	6-3
6-2.	Intercommunication Station LS-519A/SIC, Wiring Diagram	6-11
6-3.	Test Fixture, Wiring Diagram.....	6-21
7-1.	Intercommunication Station Type LS-518A/SIC, Parts Location Diagram	7-11
7-2.	Circuit Card Assembly, Resistor Board (UNIT 1A1), Parts Location Diagram	7-15
7-3.	Circuit Card Assembly, Relay Board (UNIT 1A2), Parts Location Diagram.....	7-17
7-4.	Circuit Card Assembly, Power Supply and Amplifier Board (UNIT 1A3), Parts Location Diagram.....	7-21
7-5.	Switch Assembly (UNIT 1A4), Parts Location Diagram	7-23
7-6.	Terminal Board Assembly (UNIT 1A6), Parts Location Diagram	7-25
7-7.	Intercommunication Station Type LS-519A/SIC, Parts Location Diagram	7-27
7-8.	Circuit Card Assembly, Resistor Board (UNIT 1A1), Parts Location Diagram	7-31
7-9.	Switch Assembly (UNIT 1A5), Parts Location Diagram	7-33
7-10.	Test Fixture, Parts Location Diagram.....	7-37
7-11.	Circuit Card Assembly, Resistor Board, Parts Location Diagram.....	7-39
8-1.	Intercommunication Stations LS-518A/SIC and LS-519A/SIC, Bulkhead Mounting Dimensions and Centers.....	8-3
8-2.	Intercommunication Stations LS-518A/SIC and LS-519A/SIC, Recessed Panel Mounting Dimensions and Centers.....	8-5
8-3.	Intercommunication Station LS-518A/SIC (11 Units), Installation Wiring Diagram	8-7
8-4.	Intercommunication Station LS-519A/SIC (11 Units), Installation Wiring Diagram	8-11
8-5.	Installation Wiring Diagram, Master Station and LS-458/SIC	8-17
8-6.	Installation Wiring Diagram, Parallel Operation of Master Station.....	8-17
8-7.	Installation Wiring Diagram, Master Station and Remote Loudspeaker	8-18
8-8.	Installation Wiring Diagram, Master Station and LS-386/SIC	8-19

LIST OF TABLES

NUMBER	TITLE	PAGE
1-1.	Intercommunication Stations LS-518A/SIC and LS-519A/SIC, Nominal Specifications.....	1-2
1-2.	Equipment Supplied	1-3
1-3.	Equipment Required But Not Supplied	1-3
1-4.	Field Changes	1-4
1-5.	Factory Changes	1-5

LIST OF TABLES (CONTD.)

NUMBER	TITLE	PAGE
5-1.	Troubleshooting Index	5-3
5-2.	Relays and Lamp Indexes	5-3
5-3.	Protective Device Index	5-4
5-4.	Maintenance Turn-On and Test Procedure	5-4
5-5.	Typical Voltages, Power Supply and 22 Volt Regulator Circuits	5-10
5-6.	Typical Voltages, Audio Amplifier Circuits	5-11
7-1.	Intercommunication Station LS-518A/SIC, List of Major Components.....	7-2
7-2.	Intercommunication Station LS-519A/SIC, List of Major Components.....	7-2
7-3.	Intercommunication Station Type LS-518A/SIC, Parts List	7-3
7-4.	Intercommunication Station Type LS-519A/SIC, Parts List	7-26
7-5.	Intercommunication Stations Type LS-518A/SIC and LS-519A/SIC, Test Fixture, Parts List.....	7-32
7-6.	List of Common Items	7-40
7-7.	List of Attaching Hardware.....	7-40
7-8.	List of Manufacturers.....	7-41
7-9.	Cross Reference Index	7-44
8-1.	Tools and Test Equipment Required.....	8-1

CHAPTER 0

INTRODUCTION

This manual contains information and instructions for on-site operation and maintenance of Intercommunication Stations LS-518A/SIC and LS-519A/SIC. The information identifies useful forms and publications, describes the sets, and lists significant performance and configuration data. The manual also contains appendixes of reference information.

0-2. Consolidated Index of Army Publications and Blank Forms.

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

0-3. Maintenance Forms, Records, and Reports

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System (Army).

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73/AFR 400-54/ MCO 4430.3E.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33B/AFR 75-18/ MCO P4610.19C/DLAR 4500.15.

0-4. Reporting Equipment Improvement Recommendations (EIR)

If your LS-518A/SIC or LS-519A/SIC needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

0-5. Administrative Storage

For procedures, forms and records, and inspections required during administrative storage of this equipment, refer to preventive maintenance schedule in TM2 740-90-1, Administrative Storage of Equipment.

0-6. Destruction of Army Materiel to Prevent Enemy Use

Destruction of Army materiel to prevent enemy use shall be as prescribed in TM 750-244-2.

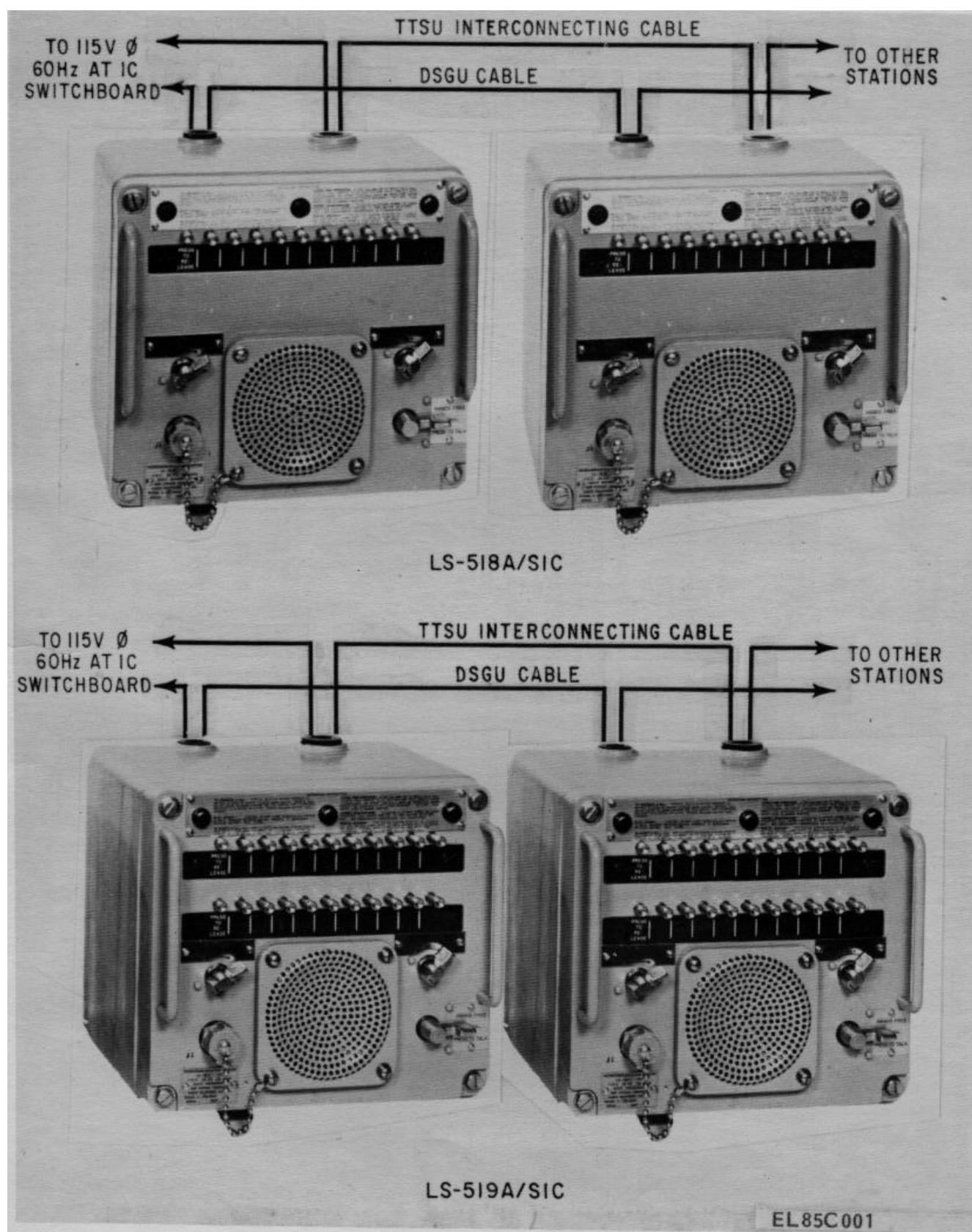


Figure 1-1. Intercommunication Stations Type LS-518A/SIC and Type LS-519A/SIC, Interrelationship of Units.