

TECHNICAL MANUAL

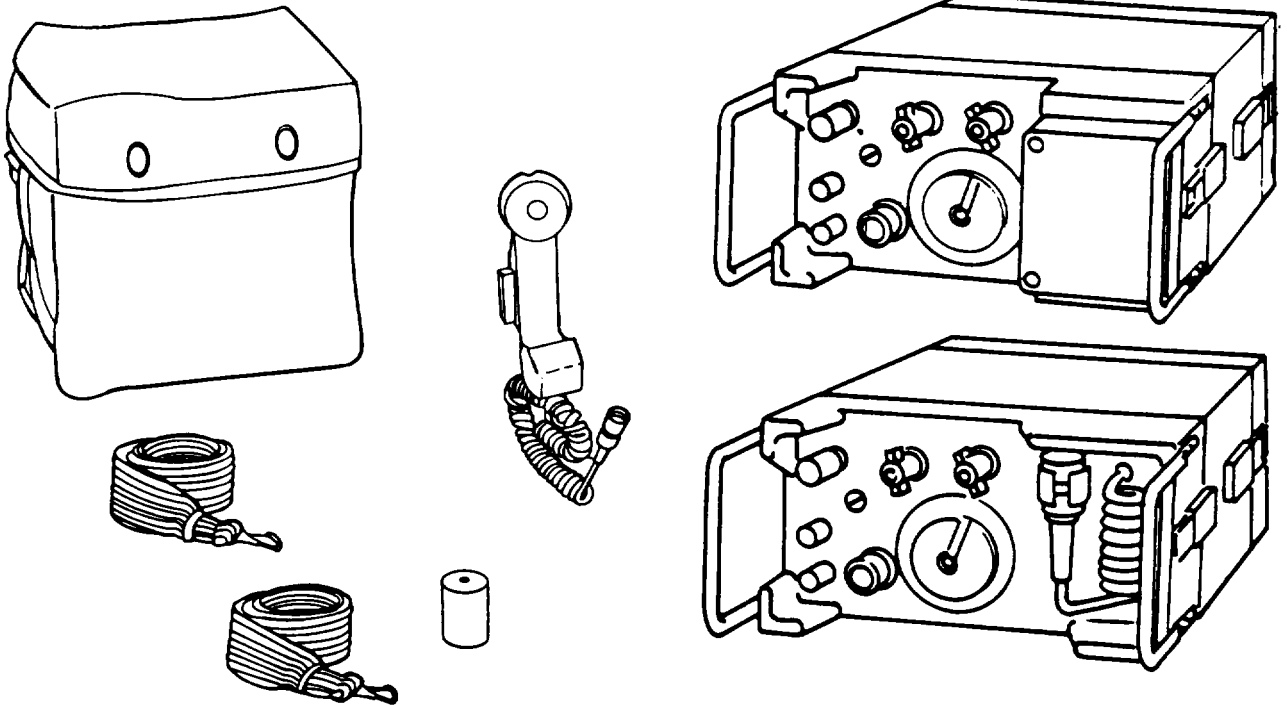
**DIRECT SUPPORT
MAINTENANCE MANUAL
FOR
CONTROL, RADIO SET
GROUPS AN/GRA-39
NSN 5820-00-889-3860
AN/GRA-39A
NSN 5820-00-082-3998
AN/GRA-39B
NSN 5820-00-949-9909
AN/GRA-39C
NSN 5820-01-196-0204**

INTRODUCTION
PAGE 1-1

PRINCIPALS OF OPERATION
PAGE 1-5

DIRECT SUPPORT
TROUBLESHOOTING
PAGE 2-2

MAINTENANCE PROCEDURES
PAGE 2-19



TECHNICAL MANUAL

No. 11-5820-477-30

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 1 July 1991

Direct Support Maintenance Manual
for
CONTROL, RADIO SET GROUPS
AN/GRA-39 NSN 5820-00-889-3860
AN/GRA-39A NSN 5820-00-082-3998
AN/GRA-39B NSN 5820-00-949-9909
AN/GRA-39C NSN 5820-01-196-0204

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: AMSEL-LC-LM-LT, Fort Monmouth, New Jersey 07703-5000. In either case, a reply will be furnished direct to you.

TABLE OF CONTENTS

| | Page |
|--|------|
| | iii |
| CHAPTER 1. | |
| How to Use This Manual | iii |
| INTRODUCTION | |
| Overview | 1-1 |
| Section I. General information | 1-1 |
| Section II. Equipment Description and Data.... . | 1-2 |
| Section III. Principals of Operation | 1-5 |
| CHAPTER 2. | |
| DIRECT SUPPORT MAINTENANCE | |
| Overview | 2-1 |
| Section I. Repair Parts, Special Tools, TMDE and Support Equipment | 2-1 |
| Section II. Direct Support Troubleshooting..... . | 2-2 |
| Section III. Maintenance Procedures | 2-19 |
| APPENDIX A | |
| REFERENCES | A-1 |
| APPENDIX B | |
| EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST | B-1 |

*This manual supersedes TM 11-5820-477-35, 9 January 1963, including all changes.

LIST OF ILLUSTRATIONS

| Figure Number | Title | Page |
|---------------|---|-------|
| 1-1 | Radio Set Control Group AN/GRA-39(*),Typical | 1-0 |
| 1-2 | Major Components | 1-4 |
| 1-3 | Remote Control Unit C-2328/GRA-39, Block Diagram | 1-7 |
| 1-4 | Remote Control Units C-2328A/GRA-39, C-2328B/GRA-39 and C-2328C/GRA-39 (with Call Lamp), Block Diagram | 1-8 |
| 1-5 | Local Control Unit C-2329/GRA-39, Block Diagram | 1-14 |
| 1-6 | Local Control Units C-2329A/GRA-39, C-2329B/GRA-39 and C-2329C/GRA-39 (with Call Lamp), Block Diagram | 1-15 |
| 2-1 | Component Checks | 2-4 |
| 2-2 | Remote Control Unit C2328(*)/GRA-39 Component Location and Voltages | 2-6 |
| 2-3 | Local Control Unit C-2329(*)/GRA-39 Component Location and Voltages | 2-13 |
| 2-4 | Magneto G201 (Remote Control Unit) Replacement | 2-21 |
| 2-5 | Magneto G101 (Local Control Unit) Replacement | 2-21 |
| 2-6 | RF Filter Assembly Components,C-2328B/GRA-39 and C-2329B/GRA-39 | 2-25 |
| 2-7 | RF Filter Assembly Components,C-2328C/GRA-39 and C-2329C/GRA-39 | 2-26 |
| 2-8 | Buzzer Assembly DS101 or DS201 Replacement | 2-29 |
| 2-9 | Buzzer Adjustment (DS101 or DS201) | 2-30 |
| 2-10 | Call Lamp and Control Relay Replacement (A-, B-and C-Models) | 2-33 |
| 2-11 | Remote Control Unit Chassis Component Replacement | 2-35 |
| 2-12 | Local Control Unit Chassis Component Replacement | 2-38 |
| 2-13 | Remote Control Unit Panel Assembly Component Replacement | 2-41 |
| 2-14 | Local Control Unit Panel Assembly Component Replacement | 2-42 |
| 2-15 | Battery Cable Replacement | 2-45 |
| 2-16 | Clamping Catch Replacement. | 2-46 |
| 2-17 | TEL-REMOTE-RADIO Switch S102A of C-2329/GRA-39 and C-2329A/GRA-39, Wiring Diagram | 2-48 |
| FO-1 | Control, Radio Set C-2328/GRA-39 (Remote Control Unit), Schematic Diagram | FP-1 |
| FO-2 | Control, Radio Set C-2328A/GRA-39 (Remote Control Unit), Schematic Diagram | FP-3 |
| FO-3 | Control, Radio Set C-2328B/GRA-39 (Remote Control Unit), Schematic Diagram | FP-5 |
| FO-4 | Control, Radio Set C-2328C/GRA-39 (Remote Control Unit), Schematic Diagram | FP-7 |
| FO-5 | Control, Radio Set C-2329/GRA-39 (Local Control Unit), Schematic Diagram | FP-9 |
| FO-6 | Control, Radio Set C-2329A/GRA-39 (Local Control Unit), Schematic Diagram | FP-11 |
| FO-7 | Control, Radio Set C-2329B/GRA-39 (Local Control Unit), Schematic Diagram | FP-13 |
| FO-8 | Control, Radio Set C-2329C/GRA-39 (Local Control Unit), Schematic Diagram | FP-15 |
| FO-9 | Control, Radio Set C-2328(*)/GRA-39 (Remote Control Unit) Functional Block Diagram | FP-17 |
| FO-10 | Control, Radio Set C-2328(*)/GRA-39 (Local Central Unit) Functional Block Diagram | FP-18 |

LIST OF TABLES

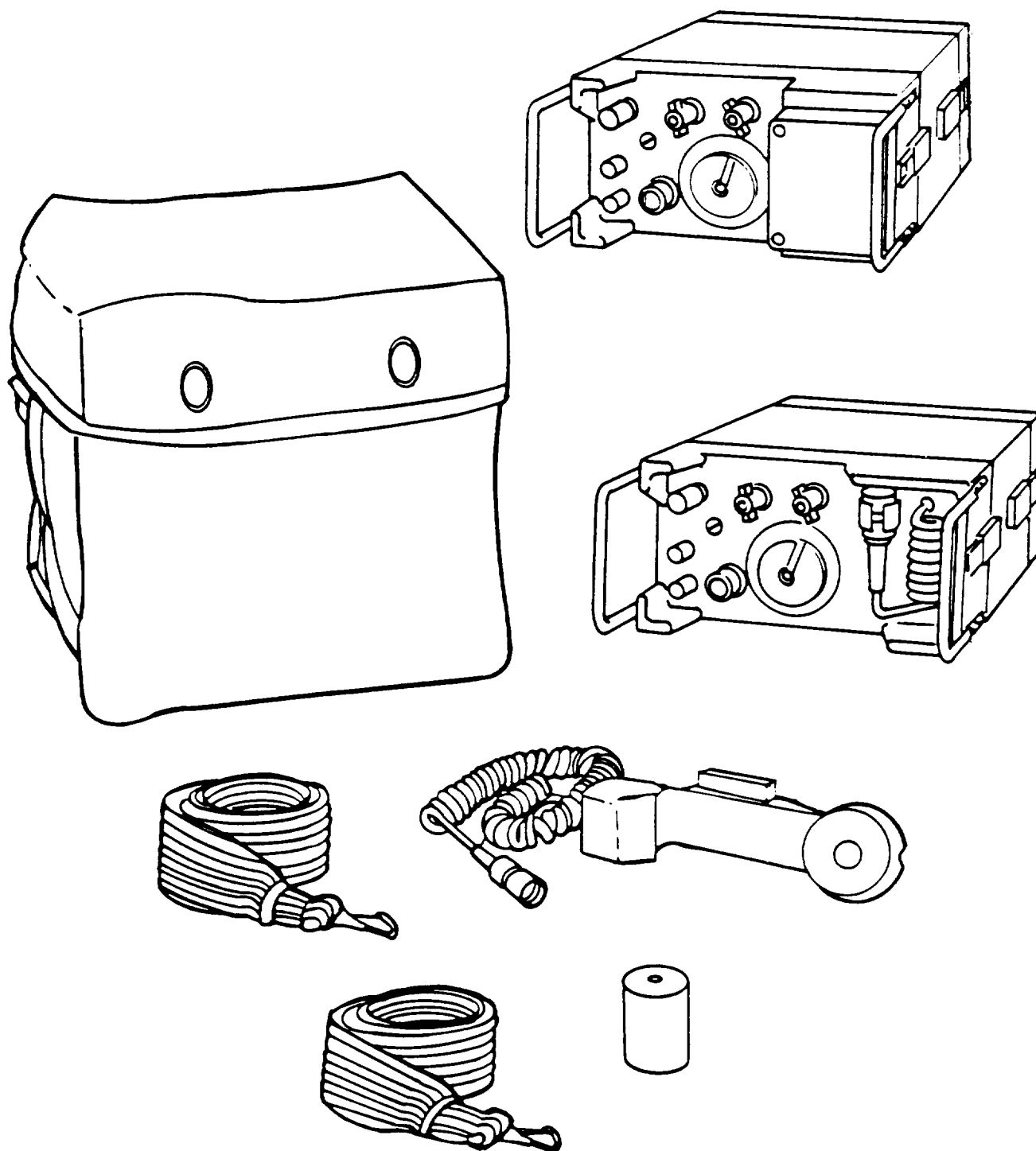
| Table Number | Title | Page |
|-----------------|--|------|
| 2-1 | Remote Control Unit Dc Resistance. | 2-3 |
| 2-2 | Local Control Unit Dc Resistance | 2-5 |
| 2-3 | Troubleshooting, Remote Control Unit | 2-9 |
| 2-4 | Troubleshooting, Local Control Unit | 2-15 |

HOW TO USE THIS MANUAL

This manual is designed to help you keep your control, radio set in good operating condition. The front cover index is provided for quick reference to important information. There is also an index located in the final pages for use in locating specific items of information.

Warning pages are located in the front of this manual. You should learn the warnings before performing any maintenance on the equipment.

Paragraphs in this manual are numbered by chapter and order of appearance within a chapter. A subject index appears at the beginning of each chapter listing sections that are included in that chapter. A more specific subject index is located at the beginning of each section to help you find the exact paragraph you are looking for.



4859-019

Figure 1-1. Radio Set Control Group AN/GRA-39(*), Typical.

CHAPTER 1

INTRODUCTION

| | Page |
|--|------|
| Section I. General Information | I-1 |
| Section II. Equipment Description and Data | 1-2 |
| Section III. Principles of Operation | 1-5 |

OVERVIEW

The general information, description and principles of operation contained in this chapter provide data for direct support personnel to use and maintain Radio Set Control Groups AN/GRA-39, AN/GRA-39A, AN/GRA-39B and AN/GRA-39C. This chapter lists reporting procedures, equipment improvement recommendations and storage procedures. Equipment description and data include particular model differences. Principles of operation explains functioning of each model.

Section I GENERAL INFORMATION

| Para. | | Page |
|-------|---|------|
| 1-1 | scope | 1-1 |
| 1-2 | Consolidated Index of Army Publications and Blank Forms | 1-1 |
| 1-3 | Maintenance Forms, Records and Reports | 1-2 |
| 1-4 | Reporting Equipment Improvement Recommendations (EIR) | 1-2 |
| 1-5 | Administrative Storage | 1-2 |
| 1-6 | Destruction of Army Electronics Material | 1-2 |

1-1. Scope

This manual covers direct support (DS) maintenance of Radio Set Control Group AN/GRA-39, AN/GRA-39A, AN/G RA-39B and AN/G RA-39C (figure 1 -1). It includes instructions and data relevant to direct support maintenance for troubleshooting, component replacement and, where applicable, component adjustment. Where information applies to all models covered by this manual, the equipment shall be referred to as AN/GRA-39(*). Where information applies to all component local control units, the equipment shall be referred to as C-2329(*)/GRA-39. Where information applies to all component remote control units, the equipment shall be referred to as C-2328(*)/GRA-39.

1-2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA PAM 25-30 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.