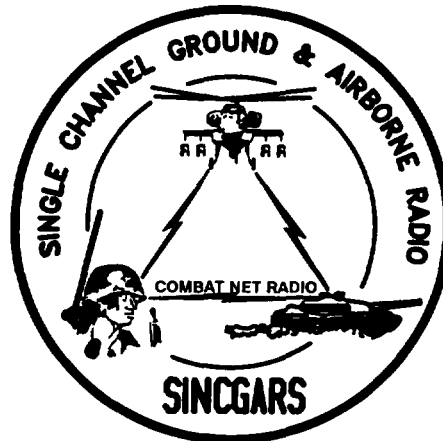


TM 11-5821-333-12

OPERATOR'S AND AVIATION UNIT MAINTENANCE MANUAL



SINGARS AIRBORNE COMBAT NET RADIO, ICOM AND NON-ICOM

NON-ICOM AIRBORNE RADIO

AN/ARC-201(V)

(NSN: N/A) (EIC: N/A)

ICOM AIRBORNE RADIO

AN/ARC-201A(V)

(NSN: N/A) (EIC: N/A)

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HEADQUARTERS, DEPARTMENT OF THE ARMY

1 SEPTEMBER 1992

	INTRODUCTION	PAGE 1-1
	CONTROLS AND INDICATORS	PAGE 2-2
	SC OPERATING PROCEDURES	PAGE 2-8
	FH OPERATING PROCEDURES	PAGE 2-11
	NCS OPERATING PROCEDURES	PAGE 3-1
	ADDITIONAL OPERATING PROCEDURES	PAGE 4-1
	OPERATION UNDER UNUSUAL CONDITIONS	PAGE 4-4
	OPERATOR MAINTENANCE	PAGE 5-1
	AVIATION UNIT MAINTENANCE	PAGE 6-1
	GLOSSARY	PAGE E-1

Technical Manual
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TABLE OF CONTENTS

OPERATOR'S AND AVIATION UNIT MAINTENANCE MANUAL NON-ICOM (AN/ARC-201(V)) (NSN:N/A) (EIC:N/A) and ICOM (AN/ARC-201A(V)) (NSN:N/A) (EIC:N/A) RADIO SETS

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	PAGE
HOW TO USE THIS MANUAL	vi
CHAPTER 1 INTRODUCTION.	1-1
1-1. Scope	1-1
Section I General Information	1-1
1-2. Maintenance Forms, Records, and Reports	1-1
1-3. Consolidated Index of Army Publications and Blank Forms	1-1
1-4. Equipment Improvement Recommendations (EIR)	1-1
1-5. Reporting Errors and Recommending Improvements	1-2
1-6. Security Classification and Marking	1-2
1-7. Destruction of Army Materiel to Prevent Enemy Use	1-2
Section II Equipment Description and Data	1-2
1-8. Capabilities and Features	1-2
1-9. Description of Major Components	1-3
1-10. Differences Between Models	1-8
1-11. Equipment Data	1-8
Section III Technical Principles of Operation	1-10
1-12. General	1-10
1-13. Single Channel Mode	1-10
1-14. Frequency Hopping Mode	1-10
1-15. FH Sync Time	1-11
1-16. Audio Signal Paths	1-11
1-17. Frequency Hopping Operation	1-12
1-18. Voice Operation with KY-58 COMSEC Equipment	1-13
1-19. Loading Operating Data	1-14
1-20. Data Operation with Data Rate Adapter	1-17
1-21. Remote Control Operation	1-18
1-22. Power Input	1-19
1-23. Homing Operation	1-19
1-24. Retransmit Operation	1-20
CHAPTER 2 OPERATOR INSTRUCTIONS	2-1
2-1. Scope	2-1
Section I Equipment Self Tests	2-1
2-2. Introduction.	2-1
2-3. RT Self-Test	2-1
2-4. RT Z-A Check	2-2
2-5. Retransmit Check	2-2
2-6. RT Load Checks	2-2
2-7. Data Rate Adapter Checks	2-2
2-8. IFM Power Amplifier	2-2
2-9. ECCM Fill Device Check	2-2

*This manual supersedes TM 11-5821-333-20, dated 15 June 1989.

TABLE OF CONTENTS Continued**CHAPTER 2** Continued

Section II	Description and Use of Operator's Controls, Indicators, and Connectors	2-2
	2-10. RT/RCU Controls, Indicators, and Connectors	2-2
	2-11. ECCM Fill Device Controls, Indicators, and Connectors	2-8
Section III	Single Channel Operating Procedures	2-8
	2-12. Pre-Mission Check	2-8
	2-13. Keyboard Operation	2-9
	2-14. Loading a Frequency (MAN, CUE, SC)	2-9
	2-15. Clearing a Frequency	2-10
	2-16. Loading an Offset Frequency	2-10
	2-17. Clearing an Offset Frequency	2-10
Section IV	Frequency Hopping Operating Procedures	2-11
	2-18. Operating an ECCM Fill Device	2-11
	2-19. Loading COMSEC Key	2-11
	2-20. Loading FH Data (ICOM Radio)..	2-12
	2-21. Loading FH Data (Non-ICOM Radio)	2-13
	2-22. Changing a Net ID	2-14
	2-23. Net Opening	2-14
	2-24. Receive and Store ERF	2-14
	2-25. FH Net Update	2-15
	2-26. Cue Procedure	2-16
	2-27. Late Net Entry	2-16
CHAPTER 3	NCS OPERATING PROCEDURES	3-1
	3-1. Scope	3-1
Section I	Loading Operating Data	3-1
	3-2. General NCS Operating Information	3-1
	3-3. Loading Fill Device from Another Fill Device	3-2
	3-4. Loading and Clearing FH Sync Time	3-3
Section II	Net Management	3-4
	3-5. Net Opening	3-4
	3-6. Cold Start Net Opening	3-5
	3-7. Net Update Using ERF	3-6
	3-8. Bringing Another Station into the Net	3-7
Section III	Other NCS procedures.	3-7
	3-9. Clearing a Single FH Set	3-7
	3-10. NCS Jamming and Anti-Jamming Considerations	3-8
	3-11. NCS Net Troubleshooting	3-8
CHAPTER 4	OTHER OPERATING PROCEDURES	4-1
	4-1. Scope	4-1
Section I	Additional Operating Procedures	4-1
	4-2. Retransmit	4-1
	4-3. Sending an ERF	4-2
	4-4. Operation with Data Equipment	4-2
	4-5. SC Frequency Scanning	4-3
	4-6. Homing Mode	4-4

TABLE OF CONTENTS Continued

CHAPTER 4	Continued	
Section II	Operation Under Unusual Conditions	4-4
	4-7. Cold Weather Operation	4-4
	4-8. Exposure to Nuclear Radiation	4-4
Section III	Other Operating Considerations,	4-5
	4-9. Line of Sight/Nap of the Earth Communications	4-5
	4-10. Jamming and Anti-Jamming	4-6
	4-11. Operator's Troubleshooting Checklist	4-6
CHAPTER 5	OPERATOR MAINTENANCE	5-1
	5-1. Scope	5-1
Section I	Preventive Maintenance Checks and Services (PMCS)	5-1
	5-2. Cleaning	5-1
	5-3. Safety, Care, and Handling	5-1
	5-4. Special Instructions	5-1
	5-5. PMCS Tables	5-1
CHAPTER 6	AVIATION UNIT MAINTENANCE	6-1
	6-1. Scope	6-1
Section I	Repair Parts, Special Tools, TMDE, and Support Equipment for Radios	6-1
	6-2. Common Tools and Equipment	6-1
	6-3. Special Tools, TMDE, and Support Equipment	6-1
	6-4. Repair Parts	6-1
Section II	Service of Radios Upon Receipt	6-1
	6-5. Unpacking and inspecting Equipment	6-1
	6-6. Installation instructions	6-2
Section III	Preventive Maintenance Checks and Services for Radios	6-3
	6-7. General	6-3
	6-8. Preventive Maintenance Checks and Services	6-3
	6-9. Cleaning	6-3
	6-10. Safety, Care, and Handling	6-3
	6-11. Touch-Up Painting	
Section IV	Troubleshooting Radios	6-4
	6-12. General	6-4
	6-13. Operational Check	6-4
	6-14. Explanation of Symbols	6-10
	6-15. How to Use Flowcharts,	6-10
	6-16. Troubleshooting Flowcharts	6-11
Section V	Maintenance Procedures for Radios	6-40
	6-17. General	6-40
	6-18. Inspection	6-40
	6-19. Verification of Repair	6-41
	6-20. Repair of RT-1476 and RT-1476A	6-42
	6-21. Repair of RT-1477 or RT-1477A on MT-6373 Mounting Base	6-44
	6-22. Repair of RT-1477, RT-1477A, RT-1478, and RT-1478A on MT-6374 Mounting Base	6-46

TABLE OF CONTENTS Continued

CHAPTER 6 Continued

Section V Maintenance Procedures for Radios Continued

6-23. Repair of C-11466 or C-11466A Radio Set Control	6-48
6-24. Repair of CV-3885 Data Rate Adapter	6-49
6-25. Repair of CY-8515 Battery Box	6-50
6-26. Replacement of ANVIS Filtere and Bezel	6-52
6-27. Placing in service	6-53

Section VI Service, Maintenance, and Troubleshooting ECCM Fill Device 6-54

6-28. Preliminary Servicing and Adjustments for ECCM Fill Device	6-54
6-29. PMCS for Fill Device	6-54
6-30. Troubleshooting Procedures	6-54
6-31. Troubleshooting Flowchart	6-54
6-32. Operational Check	6-55
6-33. Maintenance Procedure	6-55

Section VII Preparation for Storage or Shipment 6-58

6-34. General	6-58
6-35. Special Procedures	6-58
6-36. Administrative Storage	6-58
6-37. Intermediate Storage	6-59

APPENDIX A REFERENCES A-1

Section I Reference Publications A-1

A-1. Scope	A-1
A-2. Forms	A-1
A-3. Field Manual	A-1
A-4. Technical Manual	A-1
A-5. Miscellaneous Publications	A-1

Section II Julian Calendar and Time Zone Chart A-2

Section III Airborne Operator Roadmap Tasks A-4

APPENDIX B MAINTENANCE ALLOCATION CHART B-1

Section I Introduction B-1

B-1. General	B-1
B-2. Use of the Maintenance Allocation Chart(MAC)	B-2
B-3. Maintenance Functions.	B-3
B-4. Explanation of Columns in the MAC, Sections II and V.... .	B-4

Section II Maintenance Allocation Chart for AN/ARC-201(V) and AN/ARC-201A(V) B-5

Section III Tool and Test Equipment Requirements for AN/ARC-201(V) and AN/ARC-201A(V) B-16

Section IV AN/ARC-201(V) and AN/ARC-201A(v) Remarks B-18

APPENDIX C N/A

TABLE OF CONTENTS Continued

APPENDIX D ADDITIONAL AUTHORIZATION LIST D-1

 Section I Introduction D-1

 D-1 . Scope D-1

 D-2. General D-1

 D-3. Explanation of Listing D-1

 Section II Additional Authorization List D-1

APPENDIX E REFERENCE DATA E-1

 Section I Glossary E-1

 Section II Abbreviations E-2

 Section III Nomenclature Cross-Reference List E-3

ALPHABETICAL INDEX I-1

HOW TO USE YOUR MANUAL

LOCATING INFORMATION

COVER. Information that you will use most often is boxed on the front cover. The boxed information found on the front cover is thumb-indexed with edge marks so that you may quickly refer to that information.

TABLE OF CONTENTS. Refer to the Table of Contents to find out where information can be found. The Table of Contents lists each chapter title, section heading, and main subject item. Under each chapter title, section headings are listed. Under each section heading, main subjects are listed.

INDEX. Refer to the index at the back of this manual to locate specific subjects. The information is broken down by subject matter and is listed alphabetically. Look for the subject you need to know about; then turn to the paragraph listed.

GLOSSARY. Refer to the glossary in Appendix E in the back of this manual to find the meaning of an unfamiliar term.

ABBREVIATIONS. Refer to the list of abbreviations in Appendix E in the back of this manual to find the term associated with an unfamiliar abbreviation.

NOMENCLATURE CROSS-REFERENCE LIST. Refer to the nomenclature cross-reference list in Appendix E in the back of this manual to find common names and official nomenclature.

OPERATIONAL NOTES

OPERATOR PROCEDURES. A roadmap and functional flow charts are provided in Appendix A which offer operator graphic aids that may be helpful in learning and recalling basic operator tasks.

PROCEDURE INSTRUCTIONS. Procedures can be found under the appropriate heading. Refer to the index to find a procedure quickly. Most procedures have instructions that are lettered a, b, c, and so on. Always begin with step a: then do the rest of the steps in order.

OPERATING DISPLAYS. Examples of display data are shown throughout your manual. The letters you see on equipment displays **must** match the examples shown. In most examples, numbers are represented by "X"s. However, the numbers (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) you see on your equipment displays may differ from the examples. If equipment displays do not match the examples shown, make sure you have done the procedure correctly.

WARNING PAGES are at the beginning of this manual. You should learn the warnings before doing maintenance on the equipment. Always follow appropriate safety procedures and precautions.

CHAPTER 1 INTRODUCTION

		PAGE
SECTION I.	General Information	1-1
II.	Equipment Description and Data	1-2
III.	Technical Principles of Operation	1-10

1-1. SCOPE.

This chapter provides a general introduction to the SINCGARS airborne Non-ICOM and ICOM operator's and unit maintenance manual. This manual is intended to be used by Operators, NCS personnel, and AVUM Maintainers. SINCGARS is designed for secure voice and data communication and is the only anti-jam radio that is part of a total system. SINCGARS is capable of two modes of operation: single channel and frequency hopping. The radio sets handle both voice and data communications. The introduction includes information about how to report errors, equipment problems, suggested improvements, and security information. It also contains a section that describes equipment capabilities and features, characteristics, performance, weights, and measurements as well as illustrations and text that show and describe major components. The technical principles of operation are detailed descriptions of operational functions of SINCGARS, and are provided only for information. For simplified operator's information, refer to Chapter 2. The manual gives information for the operation and maintenance of the Non-ICOM radio (AN/ARC-201 (V)) and ICOM radio (AN/ARC-201A(V)). Where radio controls differ between the ICOM and Non-ICOM radios, the ICOM control will be shown first, followed by the Non-ICOM control in parenthesis; i.e.; " SYNC" (" L. E. "). The manual also provides information about ECCM fill device, various mounts, data rate adapter, and RT/RCU's.

Section I. GENERAL INFORMATION

Subject	Para	Page
Consolidated Index of Army Publications and Blank Forms	1-3	1-1
Destruction of Army Materiel to Prevent Enemy Use	1-7	1-2
Equipment Improvement Recommendations (EIR)	1-4	1-1
Maintenance Forms, Records, and Reports	1-2	1-1
Reporting Errors and Recommending Improvements	1-5	1-2
Security Classification and Marking	1-6	1-2

1-2. 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 DA PAM 738-750 as contained in Maintenance Management Update.

b. Reporting of Item and Packaging Discrepancies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.

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

1-3. 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.

1-4. EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your series of radio sets 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 the design. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ED-PH, Fort Monmouth, NJ 07703-5007. We'll send you a reply.

1-5. 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, U.S. Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, NJ 07703-5007. In either case, a reply will be furnished direct to you.

1-6. SECURITY CLASSIFICATION AND MARKING.

(Not Applicable.)

1-7. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Destruction of Army electronics C-E to prevent enemy use shall be in accordance with TM 750-244-2.

Section II. EQUIPMENT DESCRIPTION AND DATA

Subject	Para	Page
Capabilities and Features	1-8	1-2
Description of Major Components	1-9	1-3
Differences Between Models	1-10	1-8
Equipment Data	1-11	1-8

1-8. CAPABILITIES AND FEATURES.

The Non-ICOM and ICOM radio components may be arranged in a variety of configurations for VHF-FM communications of an aircraft or ground based systems to provide:

- Single channel and frequency hopping operation in VHF band (30-87.975 MHz),
- Eight single channel and six frequency hopping PRESET channels,
- CUE channel for contact of frequency hopping net by non-member,
- Quick, silent electronic tuning,
- Visual electronic displays: provide for quick checks and prompts during operation,
- Self test,
- Voice, FSK data, and digital data communication,
- Provisions for control of optional IFM power amplifier,
- Secure communications using KY-58 COMSEC equipment.

The Non-ICOM radio will operate with the following aircraft communications system equipment:

- KY-58 COMSEC equipment
- Z-AHP remote control unit
- Z-AHQ interface adapter
- ID-1351A or ID-2403 (or equivalent) indicator
- C-1611/ARC, C-6533/ARC, C-10414(V)/ARC, or C-11746(V)/ARC intercom equipment
- AM-7189A/ARC power amplifier
- CP-1516/ASQ airborne target handover system
- VHF-FM (30-88 MHz) communication and homing antennas