TM 11-5995-208-10

OPERATOR'S MANUAL



CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-11230/G (1/4 MILE) (NSN 5995-00-133-9126), CX-11230/G (100 FOOT) (NSN 5995-00-133-9127), CX-11230A/G (1320 FOOT) (NSN 5995-01-121-6623), CX-11230AIG(100 FOOT) (NSN 5995-01-125-6781) AND CX-10734/G (NSN 5995-00-133-9125)

HEADQUARTERS, DEPARTMENT OF THE ARMY 7 NOVEMBER 1983



- DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL
- $\mathbf{2}$ if possible , turn off the electrical power
- **3** IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A ROPE OR SOME OTHER INSULATING MATERIAL
- 4 SEND FOR HELP AS SOON AS POSSIBLE
- 5 AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

WARNING

Do not lay, place, or throw field wire on or near powerlines or transformers. Dangerous high voltages exist at these structures and death or severe shock may result from contact between field wire and powerlines. Follow the five emergency steps for electrical shock. Be careful when using CX-11230/G or CX-11230A/G during storms. Lightning may pose a shock hazard.

WARNING

When you are troubleshooting, do not open any cable connection. Opening a connection can expose you to a fatal shock by high voltage.

If you find it necessary to remove or replace a component or a cable section in the system, use your order wire hookup and call the MUX equipment operators. Tell them to remove the power from the cable hookup.

WARNING

Be careful while operating rotating machinery. Death or serious injury can result from careless operation of rotating machinery.

WARNING

Keep hands away from reels, dispenser, or cable during wire laying or recovering operations from moving vehicles.

WARNING

CX-11230/G and CX-11230A/G, on reels RC-453/U or RC-453B/U, are heavy (120 pounds). Be careful when moving. Two people are required for lift of 3 feet or less. Four people are required to carry reels RC-453/U or RC-453B/U more than five steps when loaded with cable.

WARNING



WARNING

HIGH VOLTAGE

IS USED IN THE OPERATION OF THIS EQUIPMENT

DEATH ON CONTACT

MAY RESULT IF PERSONNEL FAIL TO OBSERVE SAFETY PRECAUTIONS

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Be careful not to contact high-voltage connections of 115 volt ac input connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through vital organs of the body.

<u>WARNING Do not be misled by the term "low voltage". Potentials as low as</u> 50 volts may cause death under adverse conditions.

For Artificial Respiration, refer to FM 21-11.

TECHNICAL MANUAL

NO. 11-5995-208-10

HEADQUARTERS DEPARTMENT OF THE ARMY Washington, DC, 7 November 1983

Operator's Manual

CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-11230/G (1/4 MILE) (NSN 5995-00-133-9126), CX-11230/G(100 FOOT) (NSN 5995-00-133-9127), CX-11230A/G (1320 FOOT) (NSN 5995-01-121-6623), CX-11230A/G (100 FOOT) (NSN 5995-01-125-6781) AND CX-10734/G (NSN 5995-00-133-9125)

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. A reply will be furnished to you.

Page

HOW TO US	SE THIS	MANUAL	ii
CHAPTER 1			1-1
Section	 	General Information	1-1 1-5 1-14
CHAPTER 2		OPERATING INSTRUCTIONS	2-1
Section	 	Service Upon Receipt Preventive Maintenance Checks & Services (PMCS)	2-2 2-3
	Ш	Operation Under Usual Conditions	2-9
	IV	Recovering and Transporting Twin Coax Cable Assembly	2-21

^{*}This manual supersedes TM 11-5995-208-10, dated 26 September 1978, including all changes.

CHAPTER 3		
Section I II	Troubleshooting Procedures.	3-1 3-2
APPENDIX A	REFERENCES	A-1
В	COMPONENTS OF END ITEM LIST	B-1
С	ADDITIONAL AUTHORIZATION LIST	C-1
D	EXPENDABLE SUPPLIES AND MATERIALS	D-1
INDEX	Inc	lex 1

HOW TO USE THIS MANUAL

This manual tells you how to lay and pick up Cable Assembly, Special Purpose, Electrical CX-11230(*)/G.

The front cover index will assist you in quickly locating information. Each item appearing on the front cover is boxed and identified by topic, with the page number in the manual where the information is located. The page in the manual used in conjunction with the front cover has a black box on the edge of the page. Bend the manual in half and follow the margin index to the page with the black edge marker. Entries within the table of contents that duplicate the entries on the front cover index are highlighted in boldface.

A subject index appears at the beginning of each chapter and lists, in alphabetical order, paragraphs that are included in each chapter.

When an asterisk in parentheses (*) appears immediately after the nomenclature (eg TD-206(*)/G), the data applies to all models.

While you are using this manual, remember that many special instructions must be given to you by your team chief before you start to lay or pick up cables.

Carefully follow all the CAUTIONS and WARNINGS in this manual. Failure to do so could result in damage to equipment or injury to personnel.



CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-11230/G, CX-11230A/G and CX-10734/G

CHAPTER 1

INTRODUCTION

Subject

Administrative Storage
Consolidated Index of Army Publications and Blank
Forms
Destruction of Army Electronics Materiel
Differences Between Models1-10
Equipment Characteristics, Capabilities and Features
Equipment Performance Data
Glossary
Maintenance Forms, Records and Reports
Nomenclature Cross-Reference List
Principles of Operation
Reporting Equipment Improvement Recommendations
(EIR)
Scope
•

Section I GENERAL INFORMATION

SCOPE

- Type of Manual: This manual covers operator instructions for use and maintenance of Cable Assembly, Special Purpose, Electrical CX-11230/G, CX-11230A/G and CX-10734/G.
- Purpose of Equipment: Provides transmission paths for signals in pulse code modulation (PCM) communications systems.

NOTE

Repair of these cables is done by supporting maintenance units. Your job is to make sure that the cables you know or suspect of being defective are turned in for maintenance.

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 concerning the equipment.

MAINTENANCE FORMS, RECORDS, AND REPORTS

REPORT 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 (TAMMS).

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 4430.3F.

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 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

DESTRUCTION OF ARMY ELECTRONICS MATERIEL

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

ADMINISTRATIVE STORAGE

Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage, the PMCS should be performed to ensure operational readiness. See chapter 2, section II for PMCS.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your cable equipment 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. A reply will be sent to you.

NOMENCLATURE CROSS-REFERENCE LIST

This list contains names used throughout this manual in place of official nomenclature.

COMMON NAME	OFFICIAL NOMENCLATURE
twin coax cable assembly	Cable Assembly, Special Purpose, Electrical CX-11230(*)/G
twin coax adapter cable	Cable Assembly, Adapter CX-10734/G
unattended repeater	Restorer, Pulse Form TD-206(*)/G
attended repeater	Multiplexer TD-754/G
MUX equipment	Multiplexer TD-202/U, TD-203/U, TD-204/U
new wire grip	Preformed Wire Grip ND-0107 (used only with CX-11230A/G)
old wire grip	Preformed Wire Grip ND-0104 (used only with CX-11230/G)
old type reel	Reel, Cable RC-453/G
new type reel	Reel, Cable RC-453B/G
100-foot reel	Reel, Cable RC-435/U
manual reeling unit	Reel Unit RL-31-(*)
reeling machine	Reel Unit RL-26-(*), RL-207
telephone test set	Test Set, Telephone AN/PTM-7
connector	Connector, Plug, Electrical UG-1870(*)/U, UG-1871/U, UG-1872/U

GLOSSARY

PCM (Pulse Code Modulation). Special electronic circuits in MUX equipment that make possible the sending and receiving of many signals or channels over a cable.

Order Wire. A special circuit in MUX equipment that permits operators to talk to each other without disturbing the PCM signals.

Section II EQUIPMENT DESCRIPTION

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

TWIN COAX CABLE ASSEMBLY (CX-11230/G and CX-11230A/G)



Contains two small coaxial cables.

Carries up to 48 channels of PCM signals.

Can be laid on the ground, suspended from poles or trees, or buried. Requires an unattended repeater at the end of each mile of cable.

Carries the dc power, which is supplied by the MUX equipment, to

power the unattended repeaters.

Requires an attended repeater every 40 miles. Available in 100-foot or 1320-foot (1/4-mile) lengths.

TWIN COAX ADAPTER CABLE (CX-10734/G)



Overall length is 4 feet.

Contains the same type small coaxial cables as twin coax cable assembly.

Used to connect twin coax cable assemblies to MUX equipment, early model unattended repeaters, attended repeaters, or old type signal entrance boxes.

UNATTENDED REPEATER (TD-206(*)/G)



Must be used after every mile of twin coax cable assembly to boost the PCM signals.

Must be at least 1/2 mile of twin coax cable assembly between the unattended repeater and the MUX equipment.

After 40 miles of twin coax cable and unattended repeaters, an attended repeater must be connected.

The early model unattended repeater (TD-206/G) needs a twin coax adapter cable to allow its connection to twin coax cable assembly.

The late model unattended repeater (TD-206B/G) can be directly connected to twin coax cable assembly.

100-FOOT REEL (RC-435/U)



Lightweight cable reel used to store, transport and install 100-foot lengths of twin coax cable assembly.

Tubular construction designed to permit storing the conductors in the hub area.

May be used with manual reeling unit or the reeling machine.

OLD TYPE REEL (RC-453/G)



May be used with manual reeling unit or the reeling machine.

Steel spool-type reel used to store, transport and install 1320-foot (1/4-mile) sections of twin coax cable assemblies.

Contains a storage compartment with guard assembly and doors to hold both connectors, as well as up to 12 feet of cable.

Storage compartment protects the connectors and makes them available for testing.

NEW TYPE REEL (RC-453B/G)



Has the same features as old type reel except that storage compartment has been removed and replaced with 10 steel rods welded to outside head.

MANUAL REELING UNIT (RL-31-(*))



Lightweight manual reeling unit used to lay and pickup twin coax cable assemblies.

Can be used with either 100-foot or 1320-foot (1/4-mile) reels.

Designed to be installed on a vehicle, but can be used on the ground. Some models have two cranks and two brake units.

Can be used to transport loaded cable reels, either by liter carry

method using four people, or by wheelbarrow method using one person.

REELING MACHINE (RL-26-(*))

WARNING

Be careful while operating rotating machinery. Death or serious injury can result from careless operation of rotating machinery.



An engine-driven reeling machine used to lay and pick up twin coax cable assemblies.

Can be used with either 1/4-mile reels or 100-foot reels.

Contains two axles for two-reel operation.

Designed to be mounted on a vehicle.

DIFFERENCES BETWEEN MODELS

Cable Assembly, Special Purpose, Electrical CX-11230/G has two conductors, each covered by a plastic insulation, separate shield, and a plastic jacket. Conductors are twisted, shielded again, and covered with an outer plastic jacket. Cable is oval in shape, and terminated at each end with Connector, Plug, Electrical UG-1870/U.

DIFFERENCES BETWEEN MODELS (CONT)

Cable Assembly, Special Purpose, Electrical CX-11230A/G also has two conductors, each covered by a plastic insulation, separate shield, and a plastic jacket. However, the conductors are twisted with plastic and paper fillers, and secured with a thin, clear plastic. They are shielded again, wrapped with a thin aluminum, and covered with an outer plastic jacket. Cable is round in shape and connected at each end with Connector, Plug, Electrical UG-1870A/U.

Cable Assembly, Special Purpose, Electrical CX-10734/G has two conductors, each prepared in the same way as Cable Assembly CX-11230/G. Cable is oval in shape and terminated at one end with Connector, Plug, Electrical UG-1870/U. The other end is terminated on one conductor with Connector Assembly, Female UG-1871 /U and on the other conductor with Connector Assembly, Male UG-1872/U.

NOTE

Cable Assembly, Special Purpose, Electrical CX-10734/G is nonrepairable,

EQUIPMENT PERFORMANCE DATA

TWIN COAX CABLE ASSEMBLIES (CX-11230/G and CX-11230A/G)

- Channel Capacity: 6, 12, 24, or 48 channels.
- Insulation Quality (each coaxial cable): Can withstand up to 2500 vdc between center conductor and shield.
- Insulation Resistance (each coaxial cable): 50,000 megohms between center conductor and shield.
- Characteristic Impedance: CX-11230/G 55 to 65 ohms in frequency range of 400 kHz to 1000 kHz; 55 to 60 ohms in frequency range of 1000 kHz to 3000 kHz; CX-11230A/G to 62 ohms in frequency range of 500 kHz to 20 MHz.
- DC Resistance of Center Conductor (each coaxial cable): 22 ohms for each 1320 feet (1/4 mile) of cable when temperature is 68°F;
 2 ohms for every 100 feet of cable when temperature is 68°F.

TM 11-5995-208-10

EQUIPMENT PERFORMANCE DATA (CONT)

DC Resistance of the Shield (each coaxial cable): 7.5 ohms for each 1320 feet (1/4 mile) of cable when temperature is 68°F; 0.9 ohms for 100 feet of cable when temperature is 68°F.

- Signal Attenuation: CX-11230/G 8.5 db per mile at 100 kHz; 38 db per mile at 2000 kHz; CX-11230A/G (for each 1320 feet or 1/4 mile) 2db at 20 kHz; 9.5 db at 2300 kHz, and 32.0 db at 200 MHz.
- Tensile Strength of Cable: CX-11230/G 600 pounds; CX-11230A/G 1200 pounds.
- Tensile Strength of Cable-to-Connector Junction: CX-11230/G 400 pounds; CX-11230A/G 350 pounds.

Weight: 8 pounds for 100-foot length and 77 pounds for 1/4-mile length.

Span and Minimum Sag Specification:

WARNING

Be sure you know what the minimum clearance is before you hang your cable. Your supervisor will give you specific clearance heights before you start on your cable laying mission.

Do not put cable connectors in the span.

EQUIPMENT PERFORMANCE DATA (CONT)



NOTE

If the span distance falls between two of the below span figures, use the higher minimum sag. (For example, a span of 162 feet should have a minimum sag of 48 inches.)

If the span is greater than 200 feet, use a messenger cable, following the techniques described in FM 24-20.

Length of Span

Minimum Sag

 100 feet
 16 inches

 125 feet
 24 inches

 150 feet
 36 inches

 175 feet
 48 inches

 200 feet
 72 inches

EQUIPMENT PERFORMANCE DATA (CONT)

TWIN COAX ADAPTER CABLE (CX-10734/G)

Tensile Strength of Cable: 600 pounds.

- Tensile Strength of Junction Between Cable and Connector (UG-1870/U): 400 pounds.
- Tensile Strength of Junction Between Cable and Connectors UG-1871/U and . UG-1872/U: 45 pounds.

Channel Capacity: 6, 12, 24, or 48 channels.

Characteristic Impedance: 55 to 65 ohms in frequency range of 400 kHz to 1000 kHz; 55 to 60 ohms in frequency range of 1000 kHz to 3000 kHz.

Signal Attenuation: 8.5 db per mile at 100 kHz; 38 db per mile at 2000 kHz.

Section III TECHNICAL PRINCIPLES OF OPERATION

PRINCIPLES OF OPERATION

Typical applications of the twin coax cable assembly and twin coax adapter cable are shown in the following cabling diagrams. The applications shown are not the only options available. Other applications are available depending on your unit mission. Follow the requirements for the individual equipments you are operating with.

NOTE

The first cabling diagram depicts the use of twin coax cable assembly and twin coax adapter cable with a late model unattended repeater. The second cabling diagram depicts these cables with an early model unattended repeater.

PRINCIPLES OF OPERATION (CONT)



A=TWIN COAX ADAPTER CABLE CX-10734/G B=TWIN COAX CABLE CX-11230(*)/G C=LATE MODEL UNATTENDED REPEATER TD-206 B/G TM 11-5995-208-10

PRINCIPLES OF OPERATION (CONT)



A= TWIN COAX ADAPTER CABLE CX-10734/G B= TWIN COAX CABLE CX-11230(*)/G C= LATE MODEL UNATTENDED REPEATER TD-206B/G

CHAPTER 2

OPERATING INSTRUCTIONS

Subject	Page
Aerial Installation of Twin Coax Cable Assembly.	2-17
Burying Twin Coax Cable Assembly.	2-20
Connecting Early and Late Model Unattended	
Repeaters	2-14
Connecting Twin Coax Cable to a Shelter.	2-13
Connecting Sections of Twin Coax Cable Assembly	2-12
Driving and Laying Twin Coax Cable Assembly	2-11
Installation Instructions	2-9
Installing Twin Coax Cable Assembly through Culverts	2-19
Preventive Maintenance Checks and Services (General)	2-3
Preventive Maintenance Checks and Services	2-6
Recovering and Transporting Twin Coax Cable Assembly	2 24
	2-21
Recovering Twin Coax Cable Assembly Using Manual	2-24
	2-24
Recovering Twin Coax Cable Assembly Using Reeling	2-22
	2-4
Starting Instructions for Louing Twin Coox Coble	
Assembly with a Vehicle	2-10
Transporting Loaded Cable Reels Using Litter Carry	
Method	2-25
Transporting Loaded Cable Reels Using Wheelbarrow	
Method	2-27
Unpacking	2-2

Section I SERVICE UPON RECEIPT

UNPACKING



After unpacking, check the reel for damage such as broken or crushed sections, dents or scratches, or a damaged hub.

Do all routine checks and services, and the (B) before PMCS items on page 2-6.

Do a dynamic test.

NOTE

Your organization should have a standard procedure for checking the quality of newly received cables.

This procedure should include a dynamic test with the cable connected in a working PCM circuit with the MUX equipment.

Section II PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

To be sure that your cables will be able to support your mission, you must do scheduled Preventive Maintenance Checks and Services (PMCS).

Before you start your cable laying mission, do your (B) PMCS to make sure your cables are ready to go.

After cables are picked up and returned, do your (A) PMCS. This will help you keep your cables in top shape.

If the equipment fails to operate, refer to operator's troubleshooting in this manual.

NOTE

All faults and corrective actions will be noted on DA Form 2404, Equipment Inspection and Maintenance Worksheet (see below). The item number recorded in column "a" of this form must correspond to the item number in the PMCS chart on page 2-6. Refer to TM 38-750 for instruction on use of this form for preventive maintenance services.

		EQ	UIPMENT	INSPECTION	AND MA	NTENANCE	WORKSHEET		<u>, , , , , , , , , , , , , , , , , , , </u>
1. ORGANI	ZATION	se of this form.	see TM 38 75	0, the propone	2. NC	MENCLATUR	E AND MODEL	tan for Logitics.	
J. REGIST	RATION/SE	RIAL/NSN	4a, MILES	b. HOURS	C. ROUNDS	d HOT STARTS	5. DATE	6. TYP	EINSPECTION
7.				APPL	CABLE REFE	RENCE			
TM NUMBE	B		TM	DATE	TMIN	UMBER		TM DA	TE
8a SIGNAT	URE (Perso)	tis) performing	inspection) B	6. TIME	90, SIGNATL	IRE (Maintena	nce Supervisor)	95. TIME	10,MANHOURS REQUIRED
TM ITEM S NO. a	TATUS	DEFICIENC	IES AND SHO	DRTCOMING	5	co	RRECTIVE ACTI	ON	INITIAL WHÊN CORRECTED
1. TUSE	PMCS	outer cut	jack	et ic		\sim			

ROUTINE CHECKS AND SERVICES

The following routine checks and services are not listed in your PMCS table. These checks and services should be done anytime you see that they must be done.

If you find what you consider a routine check and service in the PMCS table, it was listed because other operators reported it as an important and critical procedure.

CLEANING OUTER PLASTIC JACKET ON CABLES

CAUTION

Do not use solvents. They can damage equipment.

Use clear water and a clean rag to remove mud and dirt, or use soapy water and then rinse with clear water to remove oil or grease.

CAPPING CONNECTOR UG-1870(*)/U



Always cap the connector when it is not in use (including in storage). Always mate the caps when in use.

ROUTINE CHECKS AND SERVICES (CONT)

CONNECTORS UG-1871/U AND UG-1872/U



Always mate the connectors to each other when not in use (including in storage).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES

CAUTION

Perform the following checks, but do not try to make any repairs or adjustments. Refer problem cables to your maintenance support unit.

EQUIPMENT IS NOT READY/AVAILABLE ITEM TO BE INSPECTED ITEM INTERVAL IF: PROCEDURE NO. В А Μ • • Cracks reach any 1 Connector UG-1870/U and UG-1870A/U on All Cables: element or hole. Check for cracks in the main body insulator (1). Any insulator is Check for cracks in the cracked. front male insulator (2) or front female insulator (3).



UG-1870/U





UG-1870/U

B-BEFORE A-AFTER M-MONTHLY

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (CONT)

B-BEFORE A-AFTER M-MONTHLY

ITEM NO.	<u>INT</u> B	INTERVAL B A M		ITEM TO BE INSPECTED PROCEDURE	EQUIPMENT IS NOT READY/AVAILABLE IF:
	•	•		Check for missing or bent male or female contacts (3).	Contacts are missing or bent.
				Check for missing or im- properly sealed non- metallic washer (4) on the face of the female body assembly.	Washer is missing or improperly sealed.





3.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (CONT)



Section III OPERATION UNDER USUAL CONDITIONS

INSTALLATION INSTRUCTIONS

Twin coax cable assembly should be unreeled from a very slow moving truck, but if the terrain or tactical situation will not permit moving the truck, then you must unreel the cable by hand.

Twin coax cable assembly can be laid using the reeling machine or the manual reeling machine.

Your cable route, testing procedures and safety information, including minimum clearance, will be given to you by your team chief.

STARTING INSTRUCTIONS FOR LAYING TWIN COAX CABLE ASSEMBLY WITH A VEHICLE

WARNING

Keep hands away from reels, dispenser, and cable during wire laying or recovering operations from moving vehicles.

When using a vehicle for installation of twin coax cable assembly, make sure you have set up a STOP, GO and SLOWDOWN set of signals between the crew and the driver.

STARTING INSTRUCTIONS FOR LAYING TWIN COAX CABLE ASSEMBLY WITH A VEHICLE (CONT)



Before moving the vehicle, make sure the reels (1) are mounted on the reeling unit (2). Refer to TM 11-362 for instructions on loading reels on the reeling unit.



CAUTION

Never anchor the cable without using a wire grip to take the strain off the connectors. Ensure that proper grip is used to prevent damage to connectors. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.

2-10

STARTING INSTRUCTIONS FOR LAYING TWIN COAX CABLE ASSEMBLY WITH A VEHICLE (CONT)

At the beginning and end of a cable run, leave enough slack for local requirements, and always anchor the cable (3) to a tree or stake using a wire grip (4).

DRIVING AND LAYING TWIN COAX CABLE ASSEMBLY

CAUTION

Twin coax cable assembly becomes stiffer as the weather becomes colder. In cold weather, do not try to lay cable with the same speed you used in the summer. The lower the temperature, the slower the speed.

NOTE

Maximum truck speed for a new cable laying crew should be the speed of a fast walk, about 4 miles per hour.

1. Accelerate slowly, and drive along the selected route.

WARNING

Always use gloves when handling wire during pay out to protect hands from injury.

CAUTION

When unreeling the cable by hand, install the proper wire grip, about 18 inches from the connector, and use it to pull the cable off the reel. Do not pull the cable by its connector.

Never place twin coax cable assembly where tracked vehicles may cross it. Make sure the cable assembly is placed off the road.

2. Pay out the twin coax cable assembly.

CONNECTING SECTIONS OF TWIN COAX CABLE

CAUTION

Never anchor the cable without using a wire grip to take the strain off the connectors. Ensure that proper grip is used to prevent damage to connectors. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.



NOTE

If possible, leave some slack before making a connection.

1. Connect the two connectors (1).

NOTE

Before connecting another section of twin coax cable assembly, test the section you have already laid. Your supervisor should have specific instructions on how to ring back on the cable section you laid and what equipment to use.

- 2. Interlock two wire grips (2).
- 3. Wrap one of the wire grips on each cable section, about 18 inches away from the connector.
- 4. Mate the caps (3).
CONNECTING TWIN COAX CABLE TO A SHELTER



NOTE

If the shelter has an old type signal entrance box (1), you must use a twin coax adapter cable (2) in order to make a connection.

If you have a new type signal entrance box on the shelter, you do not need a twin coax adapter cable. The twin coax cable assembly will connect directly to the new type signal entrance box.

- 1. Connect the twin coax adapter cable (2) to the shelter's signal entrance box (1).
- 2. Connect twin coax cable (3) to adapter cable (2).
- 3. Mate the connector caps (4).

CAUTION

Never anchor the cable without using a wire grip to take the strain off the connectors. Ensure that proper grip is used to prevent damage to connectors. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.

4. Install wire grips (5) to assemblage tiedown rings (6), leaving a drip loop (7) in the twin coax cable (3) and twin coax adapter cable (2) connection.

CONNECTING EARLY AND LATE MODEL UNATTENDED REPEATERS

WARNING

Before connecting or disconnecting any unattended repeater, make sure that the MUX equipment operators have not applied power to the cable system.

CAUTION

Keep unattended repeaters high, dry, and secure. Do not place them in a spot where rain or flooding will cover them with water.

After every 1 mile of twin coax cable assembly, an unattended repeater must be installed to boost the PCM signals. There must be at least 1/2 mile of twin coax cable assembly between one unattended repeater and the next unattended repeater on the MUX equipment.

The following operating procedures address both early and late model unattended repeaters. For more information on each, see page 1-6.

EARLY MODEL

The early model unattended repeater needs two twin coax adapter cables for connection to twin coax cable assembly.

CONNECTING EARLY AND LATE MODEL UNATTENDED REPEATERS (CONT)



1. Install twin coax adapter cable (1) to twin coax cable assembly (2).

2. Install early model unattended repeater (3) to twin coax adapter cable.

CONNECTING EARLY AND LATE MODEL UNATTENDED REPEATERS (CONT)



CAUTION

Never anchor the cable without using a wire grip to take the strain off the connectors. Ensure that proper grip is used to prevent damage to connectors. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.

- 3. Install two interlocked wire grips (4) without running the cable through the drive hook (5).
- 4. Mate the caps (6) of the connectors.

LATE MODEL



CONNECTING EARLY AND LATE MODEL UNATTENDED REPEATERS (CONT)

NOTE

The late model unattended repeaters have UG-1870(*)/U connectors for direct connection to twin coax cable assembly. You do not have to use twin coax adapter cables.

1. Install late model unattended repeater (1) to twin coax cable assembly (2).

CAUTION

Never anchor the cable without using a wire grip to take the strain off the connectors. Ensure that proper grip is used to prevent damage to connectors. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.

- 2. Install wire grips where needed.
- 3. Mate the caps (3).

AERIAL INSTALLATION OF TWIN COAX CABLE ASSEMBLY

Twin coax cable assemblies may be hung from poles, towers, or trees in order to cross roads or heavily travelled areas.

AERIAL INSTALLATION OF TWIN COAX CABLE ASSEMBLY (CONT)



WARNING

Be sure that you know the minimum clearance and sag distances before you hang cable. Your team chief should give you specific clearance heights before you start your cable laying mission.

Do not hang twin coax cable assemblies over or near power lines or generators. Dangerous high voltages exist at these structures and death or severe shock may result from contact between cable assembly and power lines.

Never put a cable connector or a twin coax adapter in a span.

1. Install aerial cable (1).

CAUTION

Never anchor the cable without using a wire grip to take the strain off the connectors. Ensure that proper grip is used to prevent damage to connectors. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.

NOTE

You should use wire grips to install twin coax cable assembly in the aerial cable hookup without running the cable through the drive hook (2).

2. Install wire grips (3).

INSTALLING TWIN COAX CABLE ASSEMBLY THROUGH CULVERTS

Passing twin coax cable assembly through a culvert is a quick way to get across a road.



1. Install twin coax cable assembly through culvert.

CAUTION

Never anchor the cable without using a wire grip to take the strain off the connectors. Ensure that proper grip is used to prevent damage to connectors. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.

- 2. Install wire grips (1) to secure the twin coax cable assembly at each end of the culvert.
- 3. Anchor the wire grips to a stake, tree or stump (2).
- 4. Tag (3) the cable lines at the base of the support on both sides of the crossing between the grips.
- 5. Wrap sufficient tape (4) around the twin coax cable assembly, where it contacts the culvert.

INSTALLING TWIN COAX CABLE ASSEMBLY THROUGH CULVERTS (CONT)

NOTE

Protective wrappings of tape around the twin coax cable assembly (where it contacts the culverts) prevents rubbing and bending damage.

BURYING TWIN COAX CABLE ASSEMBLY

Twin coax cable assembly may be buried to help protect it from damage.



- 1. Dig a trench (1) 6 to 12 inches deep across the road, and extend the trench at least 2 feet beyond each side of the road.
- 2. Lay the twin coax cable assembly (2) loosely in the trench.

CAUTION

Never anchor the cable without using a wire grip to take the strain off the connector. Ensure that proper grip is used to prevent damage to connector. Use grip ND-0107 for CX-11230A/G cable assembly, and grip ND-0104 for CX-11230/G cable assembly.

- 3. Using wire grips (3), secure twin coax cable assembly at each side of the road to an anchor (4).
- 4. Fill the trench carefully.
- 5. Tag cable lines (5) at the base of the support on both sides of the crossing between the wire grips.

BURYING TWIN COAX CABLE ASSEMBLY (CONT)

NOTE

Follow any special instructions from your team chief. You may even have instructions to put up a CABLE CROSSING sign to warn vehicles to be careful.

Section IV RECOVERING AND TRANSPORTING TWIN COAX CABLE ASSEMBLY

GENERAL

Lower an aerial hookup before you start recovery.

Recover on the same reels you will use to store or install the next time out.



As each section of twin coax cable assembly is disconnected from another section, be sure to place the cap assembly on the connector. But if a cap assembly is missing, use a temporary cover (cloth, tape, or plastic) and clearly mark the reel for maintenance action.

GENERAL (CONT)

Remove all unattended repeaters, twin coax adapter cables, and wire grips as the cable is being picked up. You must do a visual inspection of the cable during recovery so you will be able to spot any damage or excessive wear. Clearly mark all items you notice as being damaged or suspect of being damaged.



When recovering 1/4-mile sections, make sure that you have approximately 12 feet of cable for placement in the reel storage compartment.

While recovering the cable, make sure no connectors are dragged across the ground. It may be necessary to assign one crew to keep connectors off the ground.

RECOVERING TWIN COAX CABLE ASSEMBLY USING REELING MACHINE

The reeling machine is designed to recover cable from a truck, but may be used on the ground. Complete instructions for operating the reeling machine are given in TM 11-362.

RECOVERING TWIN COAX CABLE ASSEMBLY USING REELING MACHINE (CONT)



1. Set up a STOP, GO, and SLOW DOWN set of signals between the crew and the driver, before moving the vehicle.

WARNING

The operator of the reeling machine must be very watchful of the incoming connector. Death or serious injury could result from carelessness.

CAUTION

Twin coax cable assembly becomes stiffer as the weather becomes colder. In cold weather, do not try to pick up cable with the same speed you used in the summer. The lower the temperature, the slower the speed.

With throttle fully open, reels will recover cable at a rate of approximately 5 1/2 miles per hour. However, cable should never be recovered at speeds exceeding 4 miles per hour. Speed can be adjusted by using the throttle.

2. Open throttle (1) to reeling machine to begin recovery.

RECOVERING TWIN COAX CABLE ASSEMBLY USING REELING MACHINE (CONT)

NOTE

Ordinarily, the recovery of cable is accomplished by using the engine to drive the reel shafts. But in case of engine failure, or if conditions do not warrant the use of the engine, cable maybe recovered by turning the reel shafts with the crank assembly that is furnished.

RECOVERING TWIN COAX CABLE ASSEMBLY USING MANUAL REELING UNIT

The manual reeling unit is a lightweight unit designed to be used from a truck to recover cable, but may be used on the ground. Complete instructions for operating the manual reeling unit are given in TM 11-362.



1. Set up a STOP, GO, and SLOW DOWN set of signals between the crew and the driver, before moving the vehicle.

RECOVERING TWIN COAX CABLE ASSEMBLY USING MANUAL REELING UNIT (CONT)

WARNING

The operator of the reeling machine must be very watchful of the incoming connector. He must also be careful in operating the unit as a whole. Death or serious injury could result from carelessness.

CAUTION

Twin coax cable assembly becomes stiffer as the weather becomes colder. In cold weather, do not try to pick up cable with the same speed you used in the summer. The lower the temperature, the slower the speed.

2. Turn the crank assembly (1) of the reeling unit (2) to begin recovery.

TRANSPORTING LOADED CABLE REELS USING LITTER CARRY METHOD

PRELIMINARY PROCEDURE: Assemble reeling unit for litter carry. See TM 11-362.

WARNING

CX-11230/G and CX-11230A/G on reels RC-453/U or RC-453B/U, are heavy (120 pounds). Be careful when moving. Two people are required for lift of 3 feet or less. Four people are required to carry reels RC-453/U or RC-453B/U more than five steps when loaded with cable.

TRANSPORTING LOADED CABLE REELS USING LITTER CARRY METHOD (CONT)



- 1. Place the loaded reel (1) on the ground with the sides upright.
- 2. Move the frame (2) over the reel and rest the frame on the ground.
- 3. Slip the axle (3) through the reel.
- 4. Open the bearing caps (4) by pulling upward on the bearing latches (5).
- 5. Raise the frame (2) so that the bearing blocks (6) engages the round bearing surfaces of the axle (3).
- 6. Close the bearing caps (4) and latch the bearing latches (5).
- 7. Mount the crank (7) on one end of the axle (3).
- 8. Strike the crank (7) with the palm of the hand to seat the crank firmly on the axle (3).
- 9. Each person grabs a frame leg (8), lifts, and walks forward carefully.

TRANSPORTING LOADED CABLE REELS USING WHEELBARROW METHOD

If the ground is smooth, a loaded cable reel can be transported wheelbarrow fashion as shown below. Complete instructions are given in TM 11-362.



- 1. Fold up the frame (1) and attach it to the reel (2).
- 2. Slip the axle (3) through the reel (2).
- 3. Open the bearing caps (4) by pulling upward on the bearing latches (5).
- 4. Raise the frame so that the bearing block (6) engages the round bearing surfaces of the axle.
- 5. Close the bearing caps (4) and latch the bearing latches (5).

2-27/(2-28 blank)

CHAPTER 3

OPERATOR MAINTENANCE

Subject	Page
Maintenance Procedure (General)	3-2
Troubleshooting Procedures (General)	3-1

Section I TROUBLESHOOTING PROCEDURES

GENERAL



WARNING

When you are troubleshooting, do not open any cable connection. Opening a connection can expose you to a fatal shock by high voltage. But if you find it necessary to remove or replace a component or a piece of cable in the system, use your order wire hookup and call MUX equipment operators, Tell them to remove the power from the cable hookup.

Troubleshooting the twin coax cable assembly is limited to testing a PCM cable hookup of twin coax cable assemblies, twin coax adapter cables, and unattended repeaters. Troubleshooting is performed using the telephone test set. Instructions in TM 11-6625-648-12 will tell you how to use the telephone test set to:

Locate faults in a PCM cable system.

TM 11-5995-208-10

GENERAL (CONT)

- Determine the location of an open or short circuit in the twin coax cable assembly, up to 1 mile away from where you connected the telephone test set.
- Localize the trouble in an unattended repeater to one of the two circuit paths.
- Provide order wire communications between the operator of the telephone test set and the MUX equipment operators.

NOTE

If you locate trouble in the twin coax cable assembly, refer to a higher level of maintenance for corrective action.

Section II MAINTENANCE PROCEDURES

GENERAL

Maintenance procedures for the twin coax cable assembly are limited to capping and mating the connectors, cleaning them, and performing the PMCS procedures located in chapter 2, section II.

APPENDIX A

REFERENCES

A-1. SCOPE.

This appendix lists all forms, field manuals, technical manuals and miscellaneous publications referenced in this manual.

A-2. FORMS.

Consolidated Index of Army Publications and Blank Forms	DA PAM 310-1
A-3. FIELD MANUALS.	
Field Wire and Field Cable Techniques	FM 24-20
A-4. TECHNICAL MANUALS.	
Operator's Manual: Reel Unit RL-26-E and Engine-Driven Cable Reeling Machine, RL-200/G (TO 31W1-3RL26-31)	TM 11-360A-10
Organizational Maintenance Manual: Reel Unit RL-26-E and Engine-Driven Cable Reeling Machine RL-200/G (TO 36C13-3-2-32)	TM 11-360A-20
Reel Units RL-31, RL-31-B, RL-31-C, RL-31-D and RL-31-E	TM 11-362
Operator's and Organizational Maintenance Manual: Multiplexers TD-202/U (NSN 5805-00-884-2176), TD-203/U (NSN 5805-00-884-2177), TD-204/U (NSN 5805-00-900-8200), TD-352/U (NSN 5805- 00-900-8199), and TD-353/U (NSN 5805- 00-985-9153), Restorers, Pulse Form TD-206/G (NSN 5805-00-868-8078), and TD-206B/G (NSN 5805-01-020-2251), and Converters, Telephone, Signal CV-1548/G (NSN 5805-00-069-8795), and CV-1548A/G (NSN 5805-00-069-8795).	TM 11-5805-367-12
Operator's and Organizational Maintenance Manual: Multiplexer, TD-754/G (NSN 5805-00-930-8078)	TM 11-5805-383-12

TM 11-5995-208-10

A-4. TECHNICAL MANUALS. (CONT)

Organizational, Direct Support, and General Support Maintenance Manual for Cable Assembly, Special Purpose, Electrical CX-11230/G and Cable Assembly, CX-10734/G, Including Repair Parts and Special Tools List	TM 11-5995-208-24&P
Organizational, Direct Support, and General Support Maintenance Manual for Cable Assembly, Special Purpose, Electrical CX-11230A/G (1320 feet) (NSN 5995-01-121-6623) and CX- 11230A/G (100 feet) (NSN 5995-01- 125-6781), Including Repair Parts and Special Tools List	TM 11-5995-208-24&P-1
Operator and Organizational Mainte- nance Manual: Test Set Telephone AN/PTM-7	TM 11-6625-648-12
The Army Maintenance Management System (TAMMS)	TM 38-750
Administrative Storage of Equipment	TM 740-90-1
Procedures for Destruction of Elec- tronics Materiel to Prevent Enemy Use	TM 750-244-2
A-5. MISCELLANEOUS PUBLICATIONS.	
Preservation, Packaging, Packing and	

Equipment used by the Army	38-100
Field Instructions for Painting and Preserving Electronics Command Equip- ment Including Camouflage Pattern Painting of Electrical Equipment Shelters	43-0118

APPENDIX B

COMPONENTS OF END ITEM LIST AND BASIC ISSUE ITEMS LISTS

Section I INTRODUCTION

B-1. SCOPE.

This appendix lists components of end item and basic issue items for Twin Coax Cable Assemblies CX-11230/G and CX-11230A/G and Twin Coax Adapter Cable CX-10734/G to help you inventory items required for safe and efficient operation.

B-2. GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are a part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III. Basic Issue Items. These are the minimum essential items required to place Twin Coax Cable Assemblies CX-11230/G and CX-11230A/G and Twin Coax Adapter Cable CX-10734/G in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with Twin Coax Cable Assemblies CX-11230/G and CX-11230A/G and Twin Coax Adapter Cable CX-10734/G during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

B-3. EXPLANATION OF COLUMNS.

The following provides an explanation of columns found in the tabular listings:

a. Column 1, Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.

b. Column 2, National Stock Number. Indicates the national stock number assigned to the item. The national stock numbers in section III will be used for requisitioning basic issue items.

B-3. EXPLANATION OF COLUMNS - CONTINUED

c. Column 3, Description. Indicates the federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number. If item needed differs for different lengths of this equipment, the length is shown under the "Usable On" heading in this column. These codes are identified as:

Code	Usable On	Code	Usable On
FH7	CX-11230A/G (1320 ft)	FH5	CX-11230/G (1320 ft)
FH6	CX11230A/G (100 ft)	FH4	CX-11230/G (100 ft)

d. Column 4, Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (eg, ea, in., pr).

e. Column 5, Quantity Required (Qty Reqd). Indicates the quantity of the item authorized to be with/on the equipment.



Section II COMPONENTS OF END ITEM LIST

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPT FSCM AND PART NUMBER	ION USABLE ON CODE	(4) U/M	(5) QTY REQD
1	8130-00-964-9014	Reel, Cable (80063) RC-453/G	FH7, FH5	еа	1
2	8130-00-656-1090	Reel, Cable (80063) RC-435/U	FH6, FH4	ea	1
3		Reel, Cable (80063) RC-453B/G	FH7, FH5	ea	1
4		Cable (80063) WD-37/U	FH7, FH6, FH5, FH4	ea	1
5		Cable (80063) WD-37A/U	FH7, FH6, FH5, FH4	ea	1
6	5935-00-179-4688	Connector, Plug, Elec- trical (80063) UG-1870/U	FH5, FH4	ea	1
7		Connector, Plug, Elec- trical (80063) UG-1870A/U	FH7, FH6	ea	1

Section III BASIC ISSUE ITEMS

(None)

B-3/(B-4 blank)

APPENDIX C

ADDITIONAL AUTHORIZATION LIST

Section I INTRODUCTION

C-1. SCOPE.

This appendix lists additional items you are authorized for the support of the Twin Coax Cable Assemblies CX-11230/G and CX-11230A/G and Twin Coax Adapter Cable CX-10734/G.

C-2. GENERAL.

This list identifies items that do not have to accompany the Twin Coax Cable Assemblies CX-11230/G and CX-11230A/G and Twin Coax Adapter Cable CX-10734/G, and that do not have to be turned in with it. These items are all authorized to you by CTA 50-970.

C-3. EXPLANATION OF LISTING.

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

(1)	(2) DESCRIPTION		(3)	(4)
NATIONAL STOCK NUMBER	FSCM AND PART NUMBER	USABLE ON CODE	U/M	QTY AUTH
5975-00-400-2630	Clamp, Electrical Conductor, Strain (04025) ND-0104		ea	12
	Clamp, Electrical Cond Strain (04025) ND-010	uctor,)7	ea	12

Section II ADDITIONAL AUTHORIZATION LIST

C-1/(C-2 blank)

APPENDIX D

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I INTRODUCTION

D-1. SCOPE.

This appendix lists expendable supplies and materials you will need to operate and maintain Twin Coax Cable Assemblies CX-11230/G and CX-11230A/G and Twin Coax Adapter Cable CX-10734/G. These items are authorized to you by CTA 50-970, Expendable Items (except medical, class V, repair parts, and heraldic items).

D-2. EXPLANATION OF COLUMNS.

a. Column 1, Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (eg, "use cleaning compound, item 5, appendix D").

b. Column 2, Level. This column identifies the lowest level of maintenance that requires the listed item.

- C Operator/Crew
- O Organizational Maintenance
- F Direct Support Maintenance
- H General Support Maintenance

c. Column 3, National Stock Number. This is the national stock number assigned to the item; use it to request or requisition the item.

d. Column 4, Description. Indicates the federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Stock Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. Column 5, Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (eg, ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	⁽³⁾ NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	С	7930-00-282-9699	Detergent, GP, Liq, ws, MIL-D-16791 (81349) 1 gallon can	gal
2	С	8305-00-267-3015	Cleaning Cloth	yd

Page

INDEX

Α

Additional authorization list C - 1 Administrative storage 1 - 2 Aerial installation of twin coax cable assembly 2 - 17

В

Basic issue items	B-3
Burying twin coax cable assembly	2-20

С

Cable assembly with a vehicle	2-10
Capping connector UG-1870(*)/U	2-4
Cleaning outer plastic jacket on cables	2-4
Components of end item list	B-2
Connecting early and late model unattended repeaters	2 - 1 4
early model	2 - 1 4
late model	2-16
Connecting sections of twin coax cable assembly	2-12
Connecting twin coax cable to a shelter	2-13
Consolidated index of army publications and blank	
forms	1 - 1

D

Destruction of army electronics materiel	1 - 2
Differences between models	1-10
Driving and laying twin coax cable assembly	2-11

Е

Early model	-14
Equipment characteristics, capabilities and features	- 5
manual reeling unit (RL-31-(*))	- 9
new type reel (RC-453B/G) 1	- 8
old type reel (RC-453/G)	- 8
reeling machine (RL-26-(*)) 1	-10
twin coax adapter cable (CX-10734/G)	- 6
twin coax cable assembly (CX-11230/G	
and CX-11230A/G)	- 5
unattended repeater (TD-206(*)/G) 1	- 6
100-foot reel (RC-435/U)	- 7
Equipment description	- 5

INDEX (CONT)

E (CONT)

E (CONT)	Page
Equipment performance data twin coax adapter cable (CX-10734/G) twin coax cable assemblies (CX-11230/G	1-11 1-14
and CX-11230A/G) Expendable supplies and materials list Explanation of columns	1-11 D-1 B-1
F	
Field manuals	A-1
G	
Glossary	1 - 4 1 - 1
Н	
How to use this manual	ii
I	
Installation instructions	2-9 2-19 1-1
L	
Late model	2-16
М	
Maintenance forms, records and reports	1-2 1-2 1-2 1-2 3-2
Manual reeling unit (RL-31-(*))	1-9

Ν

New type reel (RC-453B/G)	1-8
Nomenclature cross-reference list	1-3

Miscellaneous publications A-2

INDEX (CONT)

0

0	Page
Old type reel (RC-453/G)	1 - 8
Operating instructions	2 - 1
Operation under usual conditions	2 - 9
Operator maintenance	3 - 1

Ρ

Preventive maintenance checks and services	2 - 6
Preventive maintenance checks and services (PMCS)	
(General)	2-3
Principles of Operation	1-14

R

Recovering and transporting twin coax cable assembly	2-21
Recovering twin coax cable assembly using manual	
reeling unit	2-24
Recovering twin coax cable assembly using reeling	
machine	2-22
Reeling machine (RL-26-(*))	1-10
Reel (RC-435/U), 100-feet	1-7
References	A-1
Report of maintenance and unsatisfactory equipment	1-2
Report of packaging and handling deficiencies	1-2
Reporting equipment improvement recommendations (EIR)	1-2
Routine checks and services.	2-4
capping connector UG-1870(*)/U	2-4
cleaning outer plastic jacket on cables	2-4

S

Scope	1-1
Service upon receipt	2-2
Starting instructions for laying twin coax cable	
assembly with a vehicle	2-9

т

Technical manuals	A-1 1-14
Transporting loaded cable reels using litter carry method	2-25

TM 11-5995-208-10

INDEX (CONT)

T (CONT)

	Page
Transporting loaded cable reels using wheelbarrow	•
method	2-27
Troubleshooting procedures	3-1
Twin coax cable adapter cable (CX-10734/G)	1-6
Turn coax adapter cable (CX-10734/G)	1-4
Turn coax cable assembly (CX-11230/G	
and CX-11230A/G)	1-5
Twin coax cable assemblies (CX-11230/G	
and CX-11230A/G)	1-11
,	

U

Unattended repeater (TD-206(*)/G)	1-6
Unpacking	2-2

Index 4

_/	\sim		F	RECOMM	ENDED CHAN	GES TO	DEQUIPMENT TECHNICAL PUBLICATIONS
7	r	\backslash			SOMET	DING	WRING WITH THIS PUBLICATION?
$\left(\right)$		`)				FROM	· (PRINT YOUR UNIT'S COMPLETE ADDRESS)
THEN. JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT FOILD TAND DROP I							Your Mailing Address
DATE SENT Date you fill out this form							
PUBLICATION NUMBER PUBLICATION DATE PUBLICATION TITLE CABLE ASSEMBLY,							
TM 11	-5995-2	08-10			June 83		SPECIAL PURPOSE, ELECTRICAL
BE EXAC	T. PIN-	POINT WH	ERE IT IS	IN THIS	SPACE TELL		
NO	GRAPH	NO	NO				
i				The ol	d manual, wh	ich th	is TM supersedes, is dated
				27 Sep	tember 1978	; n ot	26 September 1978.
							.E
							PL.
						^ ^	<i>U</i> .
					G	P	•
PRINTED	PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER SIGN HERE					ERE	
DA.	onn. 21	28-2	P	REVIOUS	EDITIONS	P	S IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR
.			-			- F	ECOMMENDATION MAKE A GARBON COPY OF THIS



<u> </u>	RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS				
7 5 2	SOMETHING WRONG WITH THIS PUBLICATION?				
THEN DOPE FORM OUT. IN TH	JOT DOWN THE BOUT IT ON THIS CAREFULL' TEAR IT DOLD IT AND DROP IT MAIL'				
	PUBLICATION DATE PUBLICATION TITLE CABLE ASSEMBLY.				
TM 11-5995-208-10	7 NOV 83 SPECIAL PURPOSE, ELECTRICAL				
BE EXACT PIN-POINT WHERE IT	IN THIS SPACE TELL WHAT IS WRONG				
PAGE PARA. FIGURE TABL NO GRAPH NO NO	AND WHAT SHOULD BE DONE ABOUT IT:				
PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER SIGN HERE					
DA 1 JUL 79 2028-2	PREVIOUS EDITIONS ARE OBSOLETE. RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS				



I
	~		1	RECOM	ENDED CHA	NGES T		
7	51	$\overline{)}$			SOME	PHONE	WRONG	WITH THIS PUBLICATION?
	Ì		THEN DOPE AL FORM, C	JOT DO SOUT IT AREFUL	WN THE ON THIS LY TEAR IT	FROM	: (PRINT YOUR U	NIT'S COMPLETE ADDRESS)
$\left(\right)$	N'	λ	OUT. FO. IN THE	LD IT AI MAIL	ND DROP IT	DATE	SENT	
FUBLIC	ATION NU	MBER			PUBLICATIO		PUBLICATION TI	TLE CABLE ASSEMBLY
TM 11-5995-208-10				7 Nov	83	SPECIAL PU	RPOSE, ELECTRICAL	
BE EXAC	T PIN	POINT WH	ERE IT IS	IN THIS	SPACE TEL		S WRONG	
PAGE NO	GRAPH	FIGURE	TABLE NO	AND W	HAT SHOULD	D BE DOW	IE ABOUT IT:	
			- 1					
			i					
			ļ					
PRINTED	RINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER SIGN HERE							
	-		P O	EVIDIRE				
JA . 70	T79 ZU	26-2	AP	E OBSOL	ETE.	P S RE Ab	IF Your Outfit Commendation I Id Give It to You	i Wantis to Know About Your Bake a Carbon Copy of This Ir Headquarters

REVERSE	OF DA	FORM	2028-2
---------	-------	------	--------

|

1

|

TEAR ALONG PERFORATED LINE

1

| | |

FILL IN YOUR UNIT'S ADDRESS		
·····	FOLD BACK	
DEPARTMENT OF THE ARMY		
OFFICIAL BUSINESS		

Commander US Army Communications Electronics Command and Fort Monmouth ATTN: DRSEL-ME-MP Fort Monmouth, N.J. 07703

	$\prec \searrow$		F	RECOMM	IENDED CHA	NGES T	O EQUIPMENT TECHNICAL PUBLICATIONS
7	5				Somet	MINE	B WRONG WITH THIS PUBLICATION?
2			THEN. DOPE AE FORM. C. OUT. FOI IN THE	JOT DO BOUT IT AREFULI LD IT AI MAIL	WN THE ON THIS LY TEAR IT ND DROP IT	DATE	A: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PUBLIC	ATION NU	MBER			PUBLICATION	DATE	PUBLICATION TITLE CABLE ASSEMBLY,
TM 11	-5995-2	08-10			/ Nov	83	SPECIAL PURPOSE, ELECTRICAL
PAGE NO	PARA. GRAPH	FIGURE NO	TABLE NO	AND W	MAT SHOULD	BEDOM	NE ABOUT IT:
	NAME, GI	RADE OR 1	TITLE, AN	D TELEPI REVIOUS RE OBSOI	HONE NUMBER	SIGN H	IERE P.SIF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS



Official:

JOHN A. WICKHAM JR. General, United States Army Chief of Staff

ROBERT M. JOYCE Major General, United States Army The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-51B, Operator Maintance rqrs for CX-10734/G and CX-11230/G.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1994-342-421/81137

PIN: 035286-000

This fine document...

Was brought to you by me:



Liberated Manuals -- free army and government manuals

Why do I do it? I am tired of sleazy CD-ROM sellers, who take publicly available information, slap "watermarks" and other junk on it, and sell it. Those masters of search engine manipulation make sure that their sites that sell free information, come up first in search engines. They did not create it... They did not even scan it... Why should they get your money? Why are not letting you give those free manuals to your friends?

I am setting this document FREE. This document was made by the US Government and is NOT protected by Copyright. Feel free to share, republish, sell and so on.

I am not asking you for donations, fees or handouts. If you can, please provide a link to liberatedmanuals.com, so that free manuals come up first in search engines:

<A HREF=<u>http://www.liberatedmanuals.com/</u>>Free Military and Government Manuals

Sincerely
Igor Chudov
<u>http://igor.chudov.com/</u>
Chicago Machinery Movers