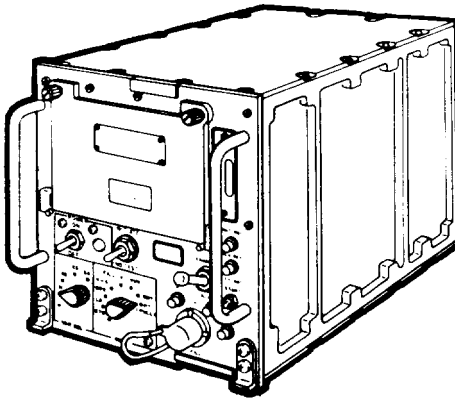


TM 11-5810-377-10

OPERATOR'S MANUAL

**GENERAL PURPOSE
TELEGRAPHY ENCRYPTION
EQUIPMENT
TSEC/KG-84C
(NSN 5810-01-250-6618)**



**EQUIPMENT
DESCRIPTION**
Page 1-2

**OPERATOR'S
CONTROLS**
Page 2-1

PMCS
Page 2-10

OPERATION
Page 2-18

Protective markings is in accordance with paragraph 3-200, exemption 3a, AR 340-17

Headquarters, Department of the Army, Washington, D.C. September 1987

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YOUR KG-84C USES 220 Vac OR 115 Vac OR 24 Vdc. THIS POWER CAN SERIOUSLY INJURE YOU. BE CAREFUL NOT TO TOUCH POWER INPUT CONNECTIONS WHEN POWER IS ON.

FOR ARTIFICIAL RESPIRATION, SEE FM 21-11.

USE OF DEMOLITION MATERIALS CAN CAUSE INJURY OR DEATH. GET TO KNOW THE RULES OF FM 5-25.

WHEN USING **TRICHLOROTRIFLUOROETHANE**, MAKE SURE THE AREA IS WELL VENTILATED. ITS FUMES ARE POISONOUS. DO NOT USE IT NEAR OPEN FLAMES OR A HOT SURFACE. DO NOT GET IT ON YOUR SKIN.

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5

SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1

DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

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 DRY WOODEN POLE OR A DRY ROPE OR SOME OTHER INSULATING MATERIAL

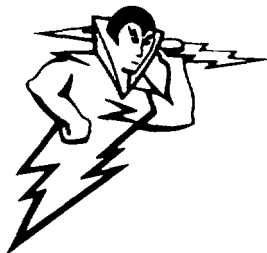
4

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, IF REQUIRED, IMMEDIATELY START ARTIFICIAL RESUSCITATION

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Static electricity will damage PCBs. So-

- Store and transport PCBs in conductive materials -not plastic "snow" or plastic trays.
- GROUND yourself before handling PCBs.
- Place PCBs on a GROUNDED bench surface or antistatic surface before handling PCBs.
- Do not wear nylon clothing which can store static electricity.

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B

TM 11-5810-377-10

TECHNICAL MANUAL
No. 11-5810-377-10

Headquarters
Department of the Army
Washington, DC 10 September 1987

**OPERATOR'S MANUAL
GENERAL PURPOSE TELEGRAPHY
ENCRYPTION EQUIPMENT
TSEC/KG-84C
(NSN 5810-01-250-6618)**

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 procedure, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, US. Army Communications Security Logistic Activity, ATTN: SELCL-NMP-TP, Fort Huachuca, Arizona 85613-7090. A reply will be furnished to you.

Distribution authorized to U.S. Government agencies only, because the technical or operational information is required solely for official use. This determination was made on 30 March 1987. Requests from outside the U.S. Government for release of this publication under the Foreign Military Sales Program must be made to Commander, U.S. Army Security Assistance Center, ATTN: AMSAC-MI/I, 5001 Eisenhower Ave., Alexandria, VA 22333-0001. Requests from outside the U.S. Government for release of this publication under the Freedom of Information Act must be made to Director, National Security Agency, ATTN: SO5, Ft. George G. Meade, MD 20755-6000.

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HOW TO USE THIS MANUAL

This manual is broken down into CHAPTERS, SECTIONS, PARAGRAPHS, and APPENDICES. An INDEX, placed in the back of the book, is provided to help you find specific tasks or information.

Notes, Cautions, and Warnings are given throughout this manual to aid you in doing your job, to give additional instructions, and to protect you and your equipment.



tells you about important information or instructions to help your do your job properly.



alerts you to a condition that could endanger your health, or damage or destroy equipment.



alerts you to a condition that could result in a serious personal injury or loss of life.

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CHAPTER 1 INTRODUCTION

SECTION I GENERAL INFORMATION

1-1. SCOPE

- This manual is for use in operating the General Purpose Telegraphy Encryption Equipment, TSEC/KG-84C. It gives operating instructions and will tell you what maintenance to perform.
- The KG-84C is used for encrypting/decrypting teletypewriter and digital data traffic on dedicated links.

1-2. MAINTENANCE FORMS AND RECORDS

Department of the Army forms, records and reports used for equipment maintenance will be those as directed by DA PAM 738-750, the Army Maintenance Management System (TAMMS).

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1-3. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your KG-84C 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 if a task is hard to do or why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at: Commander, US Army Communications Security Logistics Activity, ATTN: SELCL-NMP-TP, Fort Huachuca, Arizona 85613-7090. We'll send you a reply.

SECTION II EQUIPMENT DESCRIPTION

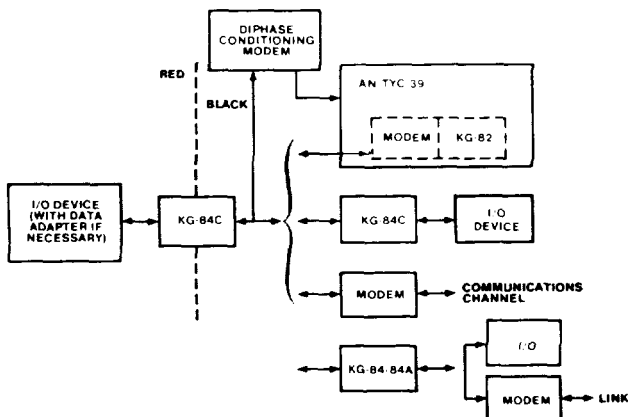
1-4. CHARACTERISTICS, CAPABILITIES, AND FEATURES

The KG-84C:

- Is used to encrypt/decrypt teletypewriter and digital data traffic on dedicated links.
- Is used with various devices and modems.
- Can be used at tactical, protected, and fixed plant stations.

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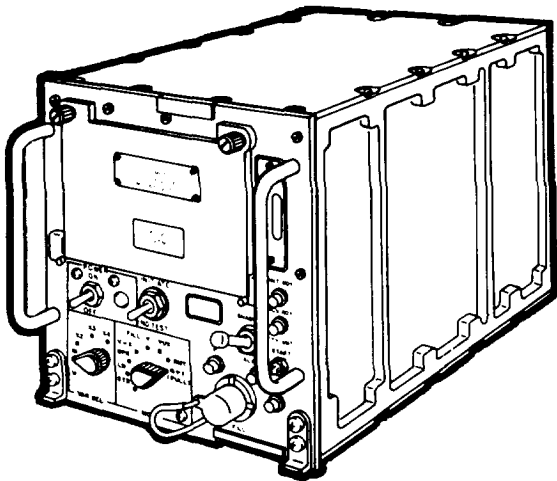
- Serves as an interfacing element as shown in typical set up below.



- Can handle synchronous digital data up to 64 Kilo bits per second (Kb/s) or asynchronous data up to 9.6 Kb/s.
- Is normally operated in full duplex but can be used in half-duplex and simplex modes, point-to-point or netted.

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- Is used, along with a KYX-15 Net Control Device (NDC), for remote keying operation.
- Can be used with a 24 Vdc, 115 Vac (60 or 400 Hz), or 220 Vac (50 Hz) power source.
- Can be remotely operated.
- Can operate in any one of eleven crypto-sync modes.



KG-84C, OVERALL VIEW

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1-5. EQUIPMENT DATA**PHYSICAL CHARACTERISTICS**

In carrying case with cover in place.

Height	14.24 inches
Width	14.00 inches
Length	22.50 inches
Weight	42.00 pounds

In carrying case with cover removed.

Height	12.00 inches
Width	14.00 inches
Length	22.50 inches
Weight	29.75 pounds

Removed from case, without Line Protect Module (LPM).

Height	7.80 inches
Width	7.50 inches
Length	15.20 inches
Weight	22.50 pounds

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PRIMARY POWER REQUIREMENTS

INPUT VOLTAGE

19 to 30 Vdc (24 Vdc nominal)

or

115 Vac \pm 10%, 45 to 66 Hz,
single phase

or

115 Vac \pm 10%, 380 to 420 Hz,
single phase

or

220 Vac +10% -1 5%,
unbalanced or balanced, 45 to
66 Hz (50 Hz nominal), single
phase

POWER CONSUMPTION

15 Watts, maximum

CIRCUIT PROTECTION

DC - 1 ampere circuit breaker

AC - 1/4 ampere circuit breaker

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The unkeyed KG-84C is classified as a Controlled Cryptographic Item (CCI). See chapter 2 in KAO-210/TSEC for access and physical security of the KG-84C and its associated equipment.

1-6. DIFFERENCES BETWEEN MODELS

The KG-84C operates in much the same way as the KG-84A does. However, there are some important differences between the KG-84C and the KG-84A:

- **FRONT PANEL:** The KG-84C's front panel is not the same as the KG-84A. There are additional front panel switches and indicators on the KG-84C.
- **RED AND BLACK INTERFACING:** Although the KG-84C contains the same interface signals as the KG-84A, they are not identical. The major difference is that the control signals in the KG-84C operate in the unbalanced mode only. However, clock and data can still operate in either the balanced or unbalanced mode.

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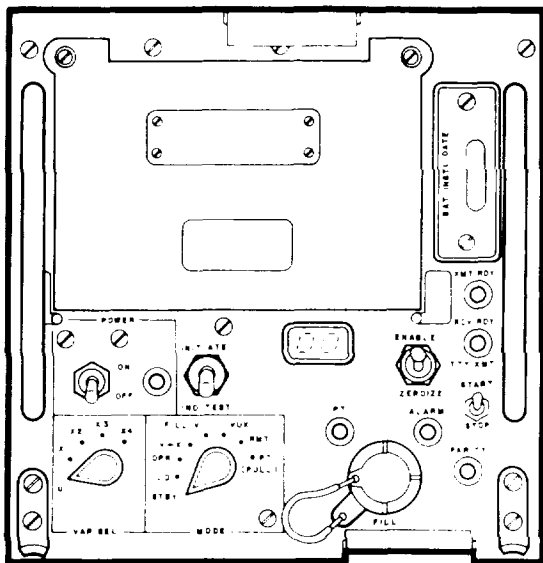
- **TDM/R.101 ORTELEX OPERATION:** The KG-84C is capable of operating over TDM/R. 101 networks and does contain the protocol necessary to operate over the TELEX networks in Europe using the R.101 standard.
- **RADIO INTERFACE:** The KG-84C has a mode of operation specifically designed for use with HF radio equipment. This includes a sync scheme designed for the HF environment and the control signals required to key the radio equipment.
- **STEP PULSE INTERVAL:** The present KG-84A uses two front panel switches to control the step pulse interval. The KG-84C has no front panel switches to control the step pulse interval; it will automatically be selected in conjunction with the data length selection.
- **DATA LENGTH:** The KG-84C contains one additional data length option, that option is to allow the KG-84C to process 7.5 bit asynchronous data.
- **INTERNAL STRAPPING OPTIONS:** The KG-84A contains nineteen different internal straps which must be set during the installation of the equipment. The KG-84C does not

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contain any internal straps, all selections are made at either the RED or BLACK interface connector.

- **INTERFACE SWITCH:** The KG-84A uses a front panel switch to override certain interface signals; this switch is not available on the KG-84C. In the KG-84C, these signals have to be tied "true" at their respective connectors.
- **DATA RATES:** The KG-84C contains two new data rates that presently do not exist in the KG-84A, they are 200 bps and 220 bps.
- **CLOCK MODES:** The KG-84C has only one station clock mode as opposed to the three that the KG-84A has.

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**KG-84C,
FRONT PANEL CONTROLS AND INDICATORS**

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**CHAPTER 2
OPERATING INSTRUCTIONS**

**SECTION I DESCRIPTION AND USE OF OPERATORS
CONTROLS AND INDICATORS**

2-1. GENERAL

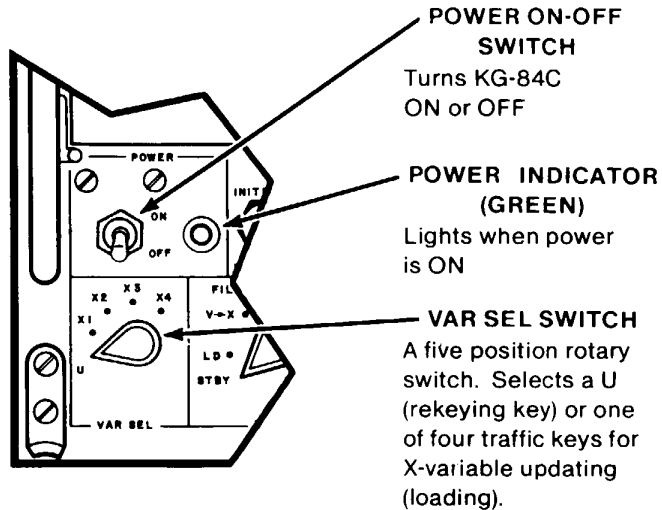
Operator controls and indicators are located on the bottom half of the front panel.



**Controls behind hinged cover
on top half of the front panel
are preset for your type of
operation. DO NOT TOUCH
THEM.**

2-2. CONTROLS AND INDICATORS

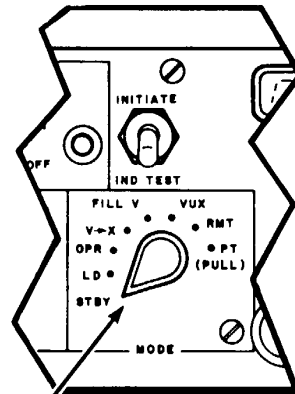
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MODE SWITCH POSITIONS

- STBY- Forces COMSEC logic to a reset state. Makes step pulses available to Input/Output (I/O) equipment
- LD- Loads variable from fill device.
- OPR- Normal traffic (operate resync enable).



MODE SWITCH

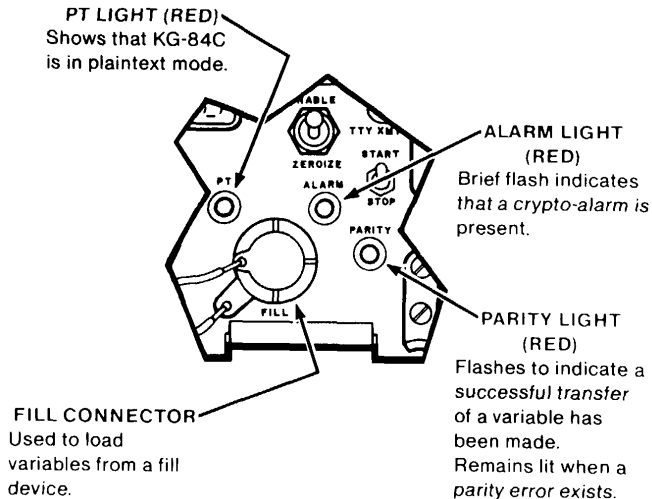
An eight position rotary switch. Selects the KG-84C operating mode.

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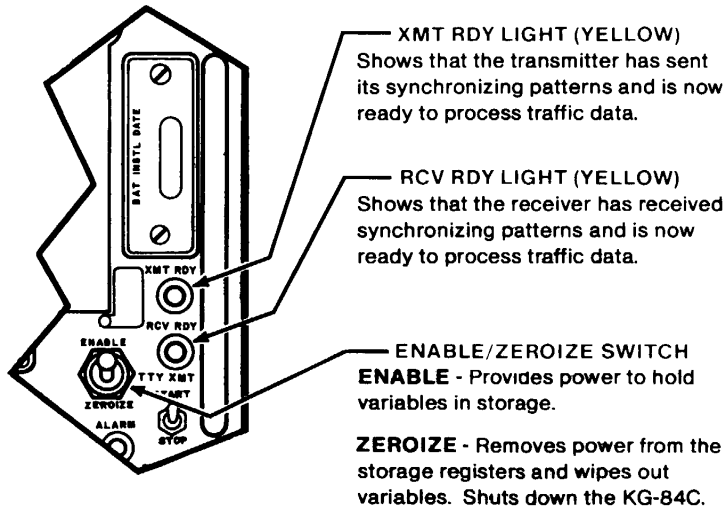
MODE SWITCH POSITIONS (CONTINUED)

- V→X-** Transfers V variable to X variable location. Starts automatic crypto-resync when mode switch is returned to OPR.
- FILL V-** Loads future traffic variable without interrupting traffic flow.
- VUX-** Updates X variable each time this position is entered and mode is initiated. Additional updating requires leaving and re-entering this position followed by an INITIATE action.
- RMT-** Used for remote control of KG-84C.
- PT-** When (PULL) knob is pulled out and switch is placed in PT position, the KG-84C is **(PULL)** placed in plaintext operation.

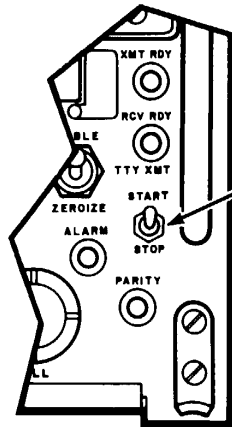
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TTY XMT SWITCH

START - Puts KG-84C in transmit mode and initiates a crypto sync. KG-84C will then begin to process incoming plain text for transmission.

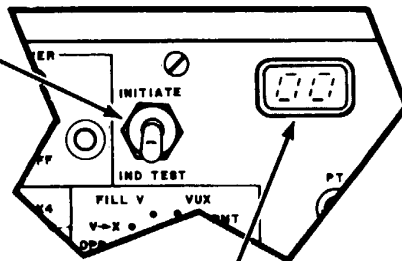
STOP - Sends a STOP TRANSMISSION message (STM) to a receiving crypto unit to indicate the end of a transmitted TTY message. The KG-84C then changes from a transmitter to a receiver. Switch is OFF when in center position.

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INITIATE/IND TEST SWITCH

INITIATE - Puts selected mode into operation.

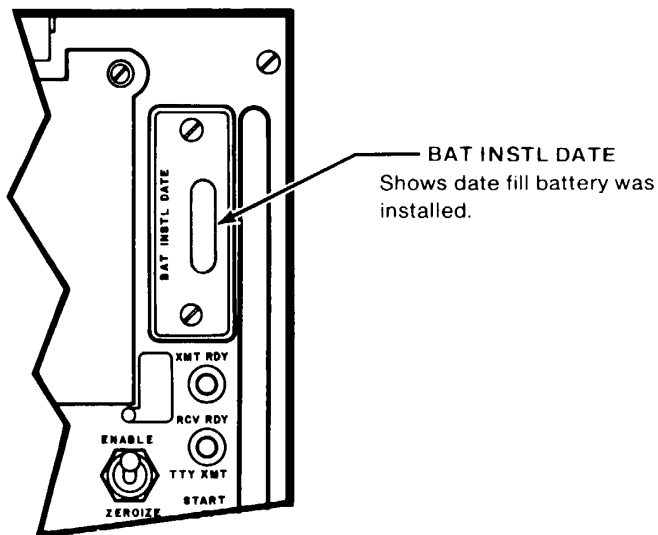
IND TEST - Starts test of indicators on KG-84C: ALARM, PARITY, XMT RDY RCV RDY, and Update Display. Switch is OFF when in center position.



UPDATE DISPLAY

Shows how many times the traffic key has been updated.

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SECTION II PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-3. GENERAL

Operators Preventive Maintenance Checks and Services (PMCS) are the daily and weekly inspection and care of your KG-84C required to keep it in good operating condition.

2-4. PMCS



If your KG-84C must be in USE ALL THE TIME, check and service those items that can be checked and serviced without stopping operation. Make your COMPLETE PMCS when the KG-84C is finally SHUT DOWN.

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ROUTINE CHECKS

Routine checks like equipment inventory, dusting, washing; checking for frayed, cracked, or broken cables, loose connectors, secure mounting, and proper operation of control knobs are not listed as PMCS. These are things that you should do anytime you see they must be done.

**EXPLANATION OF INTERVAL
COLUMN OF PMCS CHART**

**Always keep in mind all
WARNINGS and CAUTIONS
when PMCS are made.**



and

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**BEFORE
OPERATION**

Do your **B** PMCS to be sure the KG-84C is ready to use.

**DURING
OPERATION**

Do your **D** PMCS while you operate to help spot small problems before they become big problems.

**AFTER
OPERATION**

Do your **A** PMCS to help keep your KG-84C in top shape.

**WEEKLY
CHECKS**

Do your **W** PMCS to make sure serious problems do not happen.

All PMCS must be done as scheduled and also under the following conditions

- Before a mission.
- When first installed.
- When reinstalled after being removed for any reason.

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**EXPLANATION OF EQUIPMENT IS
NOT READY/AVAILABLE IF: COLUMN**

This column tells you why your KG-84C cannot be used to perform its assigned mission.



The **PROCEDURES** column in your **PMCS** chart tells you how to do your **PMCS**. Follow these instructions. If tools are needed, or the instructions tell you, get organizational maintenance to do the work.




If your **KG-84C** is not operating as it should refer to **Chapter 3** under **TROUBLESHOOTING** for possible problems. Report any problems or failures on **DA Form 2404**. Refer to **DA PAM 738-750**.

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OPERATORS PREVENTIVE MAINTENANCE CHECKS AND SERVICES


B-BEFORE OPERATION **D**-DURING OPERATION **A**-AFTER OPERATION **W**-WEEKLY CHECK

ITEM NO.	INTERVAL				ITEM TO BE INSPECTED PROCEDURE	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W		
1				-	FILL BATTERY <div style="text-align: center;">  <p>NOTE</p> </div> <p>If the battery is removed when the unit is shut down, the stored variables are destroyed. To retain stored variables, power up the unit before removing the fill battery.</p>	

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OPERATORS PREVENTIVE MAINTENANCE CHECKS AND SERVICES CONT.

B-BEFORE OPERATION D-DURING OPERATION A-AFTER OPERATION W-WEEKLY CHECK

ITEM NO.	INTERVAL				ITEM TO BE INSPECTED PROCEDURE	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W		
2					Check for signs of corrosion and replace, if necessary. Check battery insertion date and replace, if outdated. GROUND WIRE  WARNING Be sure power is OFF when checking the ground wire.	Battery outdated.

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OPERATORS PREVENTIVE MAINTENANCE CHECKS AND SERVICES CONT.

B-BEFORE OPERATION **D**-DURING OPERATION **A**-AFTER OPERATION **W**-WEEKLY CHECK

ITEM NO.	INTERVAL				ITEM TO BE INSPECTED PROCEDURE	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W		
4				-	<p>RDY indicators are lit. Also, check that variable update display shows that update counter is counting (cycling). (MODE switch must be in LO or OPR position).</p> <p>MODIFICATIONS</p> <p>Check TB-750-38 for any new applicable MWO's. All URGENT MWO's must be applied.</p>	<p>Urgent MWO's have not been applied.</p>

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SECTION III OPERATION UNDER UNUSUAL CONDITIONS

2-5. GENERAL

The KG-84C is always used as part of a communication system. Type of operation is controlled by the system used.



If your KG-84C is installed for one type of operation (for example FULL DUPLEX) and you are ordered to change to another (for example SIMPLEX) have Organizational Maintenance make the required changes to the controls on top of front panel and check the strapping mode record plate for proper strapping options.

The KG-84C can be used for local or remote operation.

Normal operation of the KG-84C is FULL DUPLEX. It can be used as HALF-DUPLEX or SIMPLEX.

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2-6. INITIALIZATION

Initialization or "cold start" is required when a zeroized KG-84C is to be put into operation.

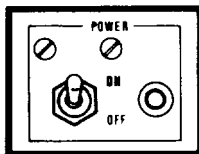
- Set ENABLE/ZEROIZE switch to ENABLE.

KG-84C



- Set POWER switch to ON.

KG-84C



- Observe that:
POWER indicator is lit.
ALARM indicator is lit.

KG-84C

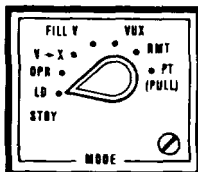


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LOAD THE U VARIABLE

- Set the MODE switch to LD.

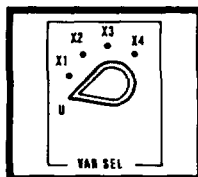
KG-84C



If the operating modes are to be selected from a remote location, the KG-84C front panel MODE switch must be set to RMT (remote).

- Set the VAR SEL switch to U.

KG-84C



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Any one of the KYK-13, KYX-15, and KOI-18 fill devices can be used to load variables into the KG-84C.



Fill devices must not be connected simultaneously to both the front panel FILL connector and a remote control unit fill connector; they are wired in parallel within the KG-84C.



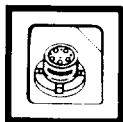
If a U variable is not assigned to you, then you do not have to connect a fill device.

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LOADING WITH A KYX-15

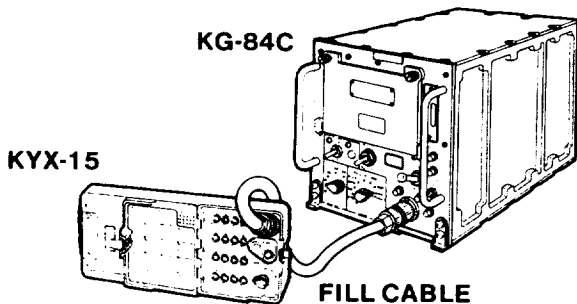
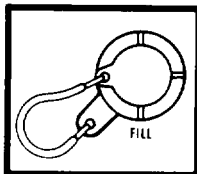
- Connect one end of fill cable to input/output connector of KYX-15.

KYX-15

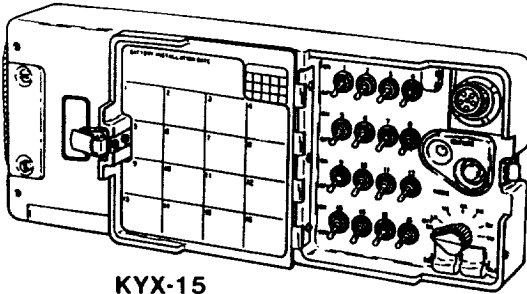


- Connect other end of fill cable to KG-84C FILL connector or remote control unit fill connector.

KG-84C



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KYX-15

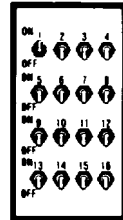
- Set KYX-15 MODE switch to OFF CK.

KYX-15



- Set the KYX-15 fill switch, showing the variable to be loaded, to ON.

KYX-15



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All other fill switches must be set to OFF.

- Press KYX-15 INITIATE button.

KYX-15



- KYX-15 parity indicator flashes to indicate good parity.

KYX-15



- Set the KYX-15 MODE switch to LD.

KYX-15



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Do not press KYX-15 INITIATE button.

- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.

KG-84C



- KG-84C PARITY indicator flashes two times. This tells you that the variable has been loaded into the KG-84C.

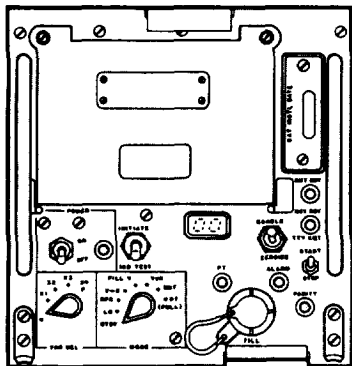
KG-84C



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KYX-15

- Set the KYX-15 MODE switch to OFF CK. KYX-15 is now ready for further loading action or may be disconnected if no further loading is needed.
- Go to page 2-34 and load the X variable.



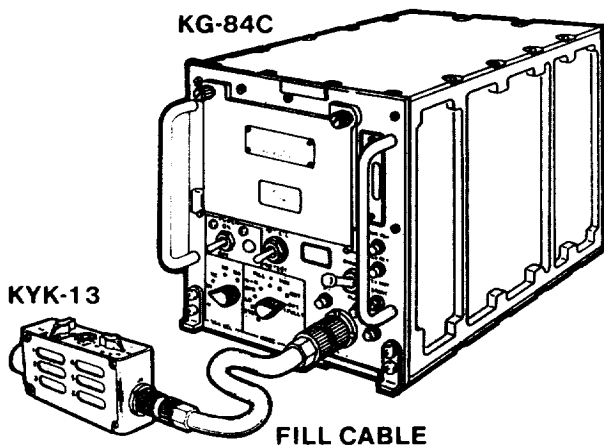
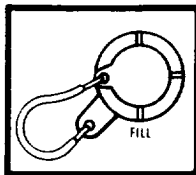
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LOADING WITH A KYK-13

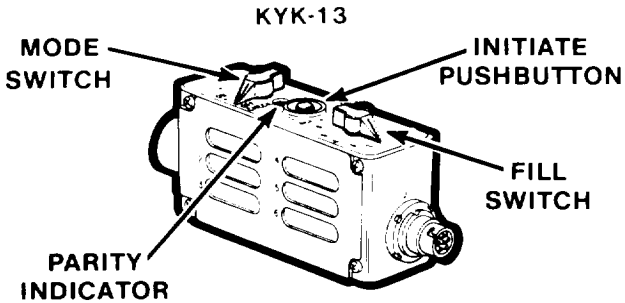
- Connect one end of fill cable to input/output connector of KYK-13.

- Connect the other end of fill cable to KG-84C FILL connector or remote control unit fill connector.

KG-84C

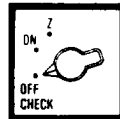


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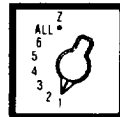
- Set KYK-13 MODE switch to OFF CHECK

KYK-13



- Set KYK-13 FILL switch to the variable to be loaded.

KYK-13



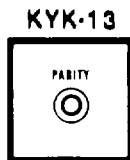
- Press KYK-13 INITIATE button.

KYK-13



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- KYK-13 PARITY indicator flashes to indicate good parity.



- Set KYK-13 MODE switch to ON.



Do not press KYK-13 INITIATE button.

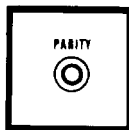
- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.



FOR OFFICIAL USE ONLY

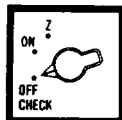
- KG-84C PARITY indicator flashes two times. This tells you that the variable has been loaded into the KG-84C.

KG-84C



- Set the KYK-13 MODE switch to OFF CHECK. KYK-13 is now ready for further loading action or may be disconnected if no further loading is needed.
- Go to page 2-34 and load the X variable.

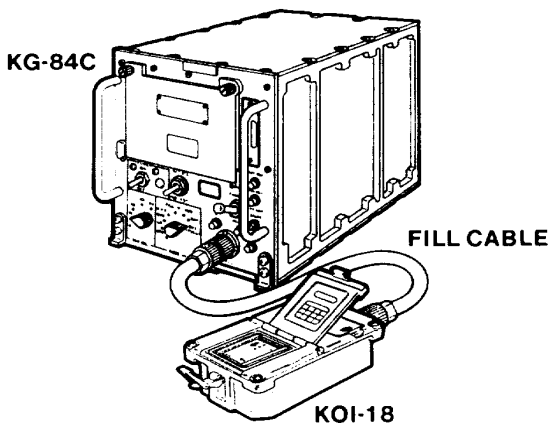
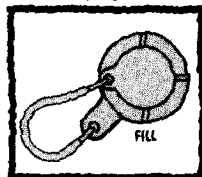
KG-84C



FOR OFFICIAL USE ONLY

LOADING WITH A KOI-18

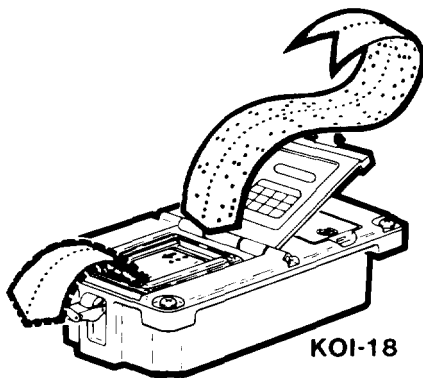
- Connect one end of fill cable to input/output connector of KOI-18.
- Connect the other end of fill cable to KG-84C FILL connector or remote control unit fill connector.

KG-84C**FOR OFFICIAL USE ONLY**

CAUTION

Do your fill action as quickly as you can. Tape should never be left in KOI-18 reader head any longer than you require, as KOI-18 battery life will be shortened.

- Insert the tape leader into KOI-18 slot marked IN. Line up tape feed holes with white dots on KOI-18.
- Advance the leader tape through only enough to have the leader accessible to pull from the slot marked OUT.



FOR OFFICIAL USE ONLY

KG-84C



- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.

KG-84C



- KG-84C PARITY indicator flashes one time.

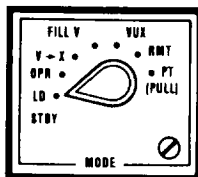
- Pull the leader tape completely from the OUT slot at a steady rate of motion.
- KG-84C PARITY indicator flashes once again.
- KOI-18 is now ready for further loading action or may be disconnected if no further loading is needed.
- Continue initialization steps by loading the X variable (page 2-34).

FOR OFFICIAL USE ONLY

LOADING THE X VARIABLE

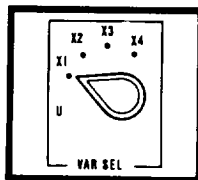
- Set the KG-84C MODE switch to LD.

KG-84C



- Set the KG-84C VAR SEL switch to one of four traffic variables (the position you wish to load).

KG-84C

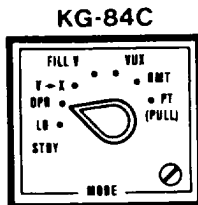


This number of positions to be loaded depends on operational requirements. One or all positions may be used.

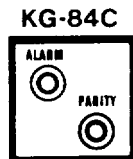
FOR OFFICIAL USE ONLY

- Using the fill device you have been assigned, load the X variable the same way you loaded the U variable. See:
 - Page 2-22 for KYX-15 loading.
 - Page 2-27 for KYK-13 loading.
 - Page 2-31 for KOI-18 loading.

- Set the KG 84C MODE switch to OPR.

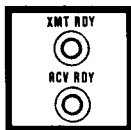


- PARITY indicator flashes one time. ALARM indicator goes out (if it had been lit).



FOR OFFICIAL USE ONLY

KG-84C



- XMT RDY and RCV RDY indicators may or may not be lit depending upon the following conditions:
 - XMT RDY and RCV RDY indicators will LIGHT if you are operating in FULL DUPLEX and a remote KG-84C or other compatible device has also been initialized.
 - XMT RDY indicator will LIGHT if you are operating in DUPLEX INDEPENDENT or TRANSMIT ONLY.
 - RCV RDY indicator will LIGHT if you are operating RECEIVE ONLY and a remote unit is turned ON and initialized.
 - RCV RDY indicator will NOT LIGHT if you are operating in SIMPLEX until either a local or remote unit is placed into SIMPLEX-TRANSMIT.

YOUR KG-84C IS NOW INITIALIZED

FOR OFFICIAL USE ONLY

2-7. NORMAL TURN ON

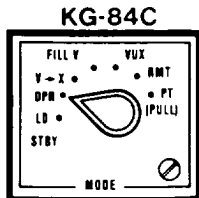
If your KG-84C has been shut down and zeroized (ENABLE/ZEROIZE switch is in the ZEROIZE position) you must begin initialization steps (paragraph 2-6).

If your KG-84C has been shut down but not zeroized (variables are held in storage by the fill storage battery) normal turn on steps are needed to start up operation.

- See that KG-84 C ENABLE/ZEROIZE switch is set to ENABLE.



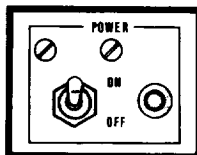
- Set MODE switch to OPR.



FOR OFFICIAL USE ONLY

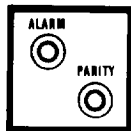
- Set POWER switch to ON. POWER indicator will light.

KG-84C



- PARITY indicator flashes twice.
- ALARM indicator lights momentarily if you are operating in FULL DUPLEX, DUPLEX INDEPENDENT, or SIMPLEX.

KG-84C



ALARM indicator will NOT light if your operation is TRANSMIT ONLY or RECEIVE ONLY.

FOR OFFICIAL USE ONLY



XMT RDY and RCV RDY indicators may or may not light according to the conditions described at the end of paragraph 2-6.

- Exchange data with a distant station to make sure that crypto-sync has been made.

2-8. FILL V OPERATION

This operation is used to load a new X variable, to be held for use at a later time, without stopping present operation.

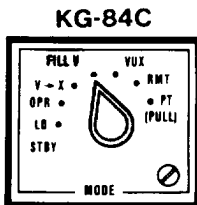


The new X variable can be loaded into the FILL V position without using a distant station.

FOR OFFICIAL USE ONLY

- Connect the fill device you have been assigned, loaded with the variable you have been assigned, to your KG-84C.
- Proceed with loading operations. See:
 - Page 2-22 for KYX-15 loading.
 - Page 2-27 for KYK-13 loading.
 - Page 2-31 for KOI-18 loading.

- Set the KG-84C MODE switch to FILL V.



- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.



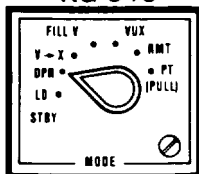
FOR OFFICIAL USE ONLY

KG-84C



- KG-84C PARITY indicator flashes two times if a KYX-15 or a KYK-13 fill device is used.
- If a KO-1 8 fill device is used, the KG-84C PARITY indicator flashes once, then once again after tape has been pulled through the tape head.

KG-84C



- If the PARITY indicator is not lit, set the KG-84C MODE switch to OPR.
- Your new X variable is now stored and ready for use later on.

FOR OFFICIAL USE ONLY



After performing a FILL V operation, do not perform any remote keying operation because the V register contents will be changed in the process.



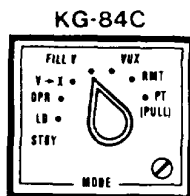
If the KG-84C PARITY light stays lit instead of flashing, you have a bad parity (variable not transferred to KG-84C properly). To RECOVER from this bad parity do the following steps:

**RECOVERY IF A KEY WITH GOOD
PARITY IS AVAILABLE**

- Select the key with good parity in the fill device.

FOR OFFICIAL USE ONLY

- Make sure the KG-84C MODE switch is still set to FILL V.

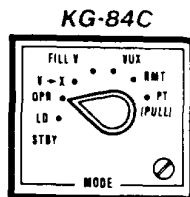


- Set the KG-84C INITIATE/IND TEST switch momentarily to INITIATE, then release. Then set the switch back to INITIATE, and release again. Switch has been set to INITIATE two times.



- See that the KG-84C PARITY indicator is NOT LIT.

- Set the KG-84C MODE switch to OPR.



FOR OFFICIAL USE ONLY



If you are operating in FULL DUPLEX, RECEIVE-ONLY, or SIMPLEX-RECEIVE you now have good parity. If you are in some other type of operation do the following step.

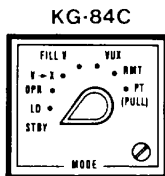
- Once again, momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.

KG-84C PARITY indicator should NOT be lit.

You now have good parity.

RECOVERY IF A KEY WITH GOOD PARITY IS NOT AVAILABLE

- Set the KG-84C MODE switch to STBY and then back to OPR.



FOR OFFICIAL USE ONLY

If KG-84C PARITY indicator flashes and does not stay lit you now have good parity.

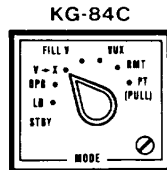


If your operation is **DUPLEX INDEPENDENT RECEIVE-ONLY**, or **SIMPLEX-RECEIVE**, resync must be initiated from a distant station.

2-9. V→X OPERATION

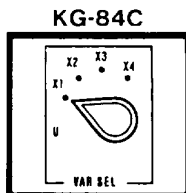
This mode is used for moving the V variable from the V location to the X and working storage locations. This action must be done together with all distant stations. Traffic will be interrupted when the operation is initiated.

- Set the KG-84C MODE switch to V→X.



FOR OFFICIAL USE ONLY

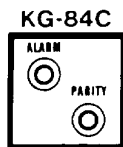
- Set the KG-84C VAR SEL switch to one of four traffic variables (the position you wish to load).



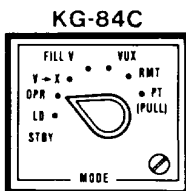
- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.



- ALARM and PARITY indicators will flash. V→X transfer has been made.



- Set KG-84C MODE switch to OPR.



FOR OFFICIAL USE ONLY

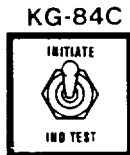


For some modes of operation **NO FURTHER ACTION** is required. For other modes of operation **FURTHER ACTION IS** required. Check the following conditions for **YOUR MODE OF OPERATION** to see what you must do to make resync with distant stations.

FULL DUPLEX -Resync has been made when this V→X transfer has also been made at distant stations. Your KG-84C action is complete.

DUPLEX-INDEPENDENT -When V→X transfer has been made at your KG-84C and distant stations - both stations must:

- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.



Resync is now made.

FOR OFFICIAL USE ONLY

TRANSMIT-ONLY/RECEIVE-ONLY -When V→X transfer has been made at both stations, have the TRANSMIT-ONLY station -

- Momentarily set its KG-84C INITIATE/IND TEST switch to INITIATE, then release.



Resync is how made.

SIMPLEX SYSTEM -When V→X transfer has been made at all stations, resync is automatic when any station is switched to the SIMPLEX transmit mode

SIMPLEX WITH A DISTANT STATION IN SIMPLEX-TRANSMIT -When V→X transfer has been made at all stations, have the SIMPLEX-TRANSMIT station -

- Momentarily set its KG-84C INITIATE/IND TEST switch to INITIATE, then release.



Resync is now made.

FOR OFFICIAL USE ONLY

2-10. UPDATE X-VARIABLE (VUX) OPERATION

The VUX operation is used to update a variable stored in the X location. This action must be done together with all distant stations. Traffic will be interrupted when the operation is initiated.

To make sure that only one specific new variable is established, the operation is completed only upon exit from the VUX mode. In other words, the operation is completed only once no matter how many times an initiate action is performed when remaining in the VUX mode.

A second updating occurs if the VUX mode is reentered and an initiate action is taken.

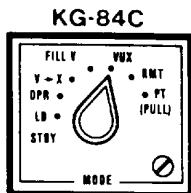
The number of updates will be recorded by the UPDATE DISPLAY on the front panel.



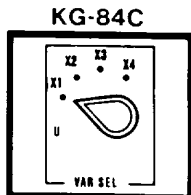
You will know if your KG-84C has the X-variable update feature if the PARITY indicator does NOT LIGHT when you set the mode switch to VUX. If the parity indicator does light, you can not do the VUX operation.

FOR OFFICIAL USE ONLY

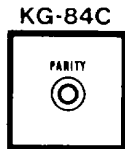
- Set the KG-84C MODE switch to VUX.



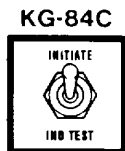
- Set the KG-84C VAR SEL switch to one of four traffic variables (the position you wish to update).



- See that PARITY indicator does not light

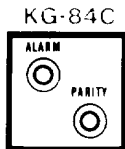


- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.



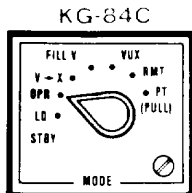
FOR OFFICIAL USE ONLY

- ALARM and PARITY indicators will flash.



VUX has been made.

- Set KG-84C MODE switch to OPR.



For some modes of operation **NO FURTHER ACTION** is required. For other modes of operation **FURTHER ACTION IS** required. Check the following conditions for **YOUR MODE OF OPERATION** to see what you must do to make resync with distant stations.

FOR OFFICIAL USE ONLY

FULL DUPLEX - Resync has been made when this VUX update has also been made at distant stations. Your KG-84C action is complete.

DUPLEX - INDEPENDENT - When VUX update has been made at your KG-84C and distant stations - both stations must:

- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.

Resync is now made.



TRANSMIT-ONLY RECEIVE-ONLY - When VUX update has been made at both stations, have the TRANSMIT-ONLY station -

- Momentarily set its KG-84C INITIATE/IND TEST switch to INITIATE, then release.

Resync is now made.



FOR OFFICIAL USE ONLY

SIMPLEX SYSTEM - When VUX update has been made at all stations, resync is automatic when any station is switched to the SIMPLEX transmit mode.

SIMPLEX WITH A DISTANT STATION IN SIMPLEX-TRANSMIT - When VUX update has been made at all stations, have the SIMPLEX-TRANSMIT station -

- Momentarily set its KG-84C INITIATE/IND TEST switch to INITIATE, then release.

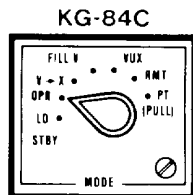


Resync is now made.

2-11. RESYNCHRONIZATION (RESYNC)

For your KG-84C to handle traffic with a distant station, synchronization (or resync) must be made between the two stations. Both the distant station and your KG-84C must be initialized and hold the same variable.

- KG-84C MODE switch must be in the OPR position.



- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.



FOR OFFICIAL USE ONLY



Traffic will be interrupted for the time it takes resync to occur. The time depends on the data rate and your operating mode. It can range from 8 to 40 seconds (at 50 bits per second) to only one second (at 2400 bits per second). Check the following conditions for your mode of operation to see what the resync action will do to your traffic flow.

FULL DUPLEX - Resync will be made in both directions and traffic in both directions will be interrupted.

DUPLEX INDEPENDENT, TRANSMIT ONLY, OR SIMPLEX TRANSMIT - Resync will be made only in the transmit direction and only transmitted traffic will be interrupted.

RECEIVE ONLY OR SIMPLEX RECEIVE - Operation of the INITIATE switch has no effect on traffic flow.

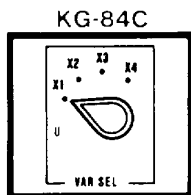
FOR OFFICIAL USE ONLY



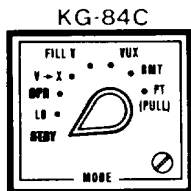
While resync is being made, the ALARM and PARITY indicators will flash twice. The XMT RDY and RCV RDY indicators will NOT light.

2-12. SELECTING A NEW X VARIABLE

- Set the KG-84C VAR SEL switch to the new X variable you wish to use.



- Set the KG-84C MODE switch to STBY and then back to OPR. This action must be performed at both communicating units.



FOR OFFICIAL USE ONLY

- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.

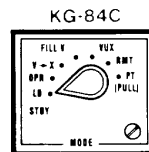
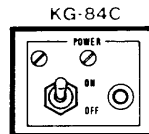


2-13. REPLACING A U VARIABLE

A new U variable may be placed in a previously initialized KG-84C by performing an LD operation. This operation places your KG-84C in an OFF-LINE status. If traffic is being handled, it will be interrupted.

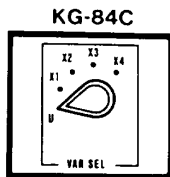
If your KG-84C is not turned on but has been previously initialized:

- Set the POWER switch to ON.
- Set the KG-84C MODE switch to LD.



FOR OFFICIAL USE ONLY

- Set the KG-84C VAR SEL switch to U.

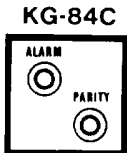


- Connect the fill device you have been assigned, loaded with the new U variable, to your KG-84C. See:
 - Page 2-22 for KYX-15 loading.
 - Page 2-27 for KYK-13 loading.
 - Page 2-31 for KOI-18 loading.

- Momentarily set the KG-84C INITIATE/IND TEST switch to INITIATE, then release.



- KG-84C ALARM and PARITY indicators will flash several times.

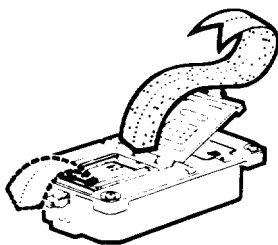


FOR OFFICIAL USE ONLY

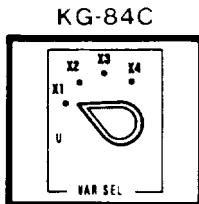


If your KG-84C is operating in the **RECEIVE-ONLY** or **SIMPLEX** mode, the **ALARM** indicator will not light.

- If you are using a KOI-18 fill device, pull the tape through the tape reader. See page 2-31.

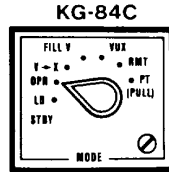


- Set the KG-84C VAR SEL switch to a selected X variable location.



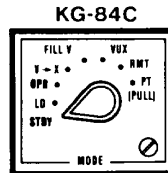
FOR OFFICIAL USE ONLY

- If the PARITY indicator does not remain lit, the new U variable has replaced the old U variable. Set the KG-84C MODE switch to OPR.



If the parity indicator does remain lit, the original U variable is still in the KG-84C and you must do the following.

- Set the MODE switch first to STBY and then to OPR. This action returns your KG-84C to its original condition.



FOR OFFICIAL USE ONLY

- Make sure that your fill device, fill cable, and reader tape are good.
 - If good, return to page 2-57 and repeat steps to replace the U variable. If trouble persists, contact higher maintenance.
 - If faulty, replace or contact higher maintenance.

RETURN TO TRAFFIC



For some modes of operation NO FURTHER ACTION is required. For other modes of operation FURTHER ACTION IS required. Check the following conditions for YOUR MODE OF OPERATION to see what you must do to return to traffic.

FOR OFFICIAL USE ONLY

FULL DUPLEX - Do a resync (paragraph 2-11) at either local or distant station.

DUPLEX-INDEPENDENT - Do a resync (paragraph 2-11) at both stations.

TRANSMIT-ONLY/RECEIVE-ONLY - Do a resync (paragraph 2-11) at the TRANSMIT-ONLY station.

SIMPLEX-RECEIVE - Do a resync (paragraph 2-11) at the SIMPLEX TRANSMIT station or start transmission at a distant station.

INTERNAL SIMPLEX-TRANSMIT - After LDU operation do a resync as shown for SIMPLEX RECEIVE above.

EXTERNAL SIMPLEX TRANSMIT - Resync is automatic.

2-14. USE OF TTY XMT SWITCH



The TTY-XMT switch can be used only when your KG-84C is operating in the SIMPLEX-INTERNAL mode.

FOR OFFICIAL USE ONLY

- Set the TTY XMT switch to START.
 - KG-84C will go into transmit mode and resync will begin.



THEN

- KG-84C will process incoming data for transmission.

OR

- Set the TTY XMT switch to STOP.
 - KG-84C will send a STM (stop transmission message) to the receiving cryptographic unit.



THEN

- KG-84C will switch to the receive mode and wait for a resync pattern.

FOR OFFICIAL USE ONLY

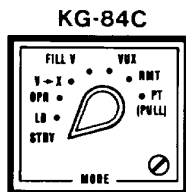
2-15. SHUT DOWN

The conditions for shutting down your KG-84C are:

- Standby or partial shutdown.
- Temporary full shutdown.
- Full shutdown for transit or storage.

STANDBY OR PARTIAL SHUTDOWN - Should be used when the communications link is being repaired or is not available.

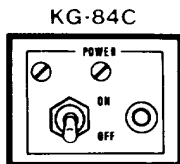
- Set the MODE switch to STBY.
 - KG-84C goes into a reset condition.
 - Variables are held in storage by equipment power, not battery power



TEMPORARY FULL SHUTDOWN - Should be used if normal operating schedules tell you to shut down your KG-84C for a short period of time.

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- Set the POWER switch to OFF.
- Make sure that your KG-84C has a good fill battery so that variables are held in storage.



If your KG-84C will not be returned to operation until the next cryptoperiod, zeroize the unit by setting the ENABLE/ZEROIZE switch to ZEROIZE.

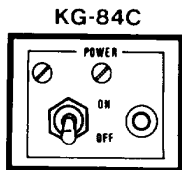
FULL SHUTDOWN FOR TRANSMIT/STORAGE - If your KG-84C is being removed for maintenance transit or storage, it must be zeroized.

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- Set the ENABLE/ZEROIZE switch to ZEROIZE.



- Set the POWER switch to OFF.



- Remove fill battery from front panel battery compartment (see paragraph 3-5).

2-16. EMERGENCY ZEROIZATION

If you must zeroize your KG-84C in a hurry, perform the following steps:

- Set the ENABLE/ZEROIZE switch to ZEROIZE.



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- Remove fill battery from front panel battery compartment (see paragraph 3-5).

2-17. REMOTE KEYING

A KYX-15 Net Control Device is needed for Remote Keying. See KAO-210, Chapter 3, for Remote Keying operation.

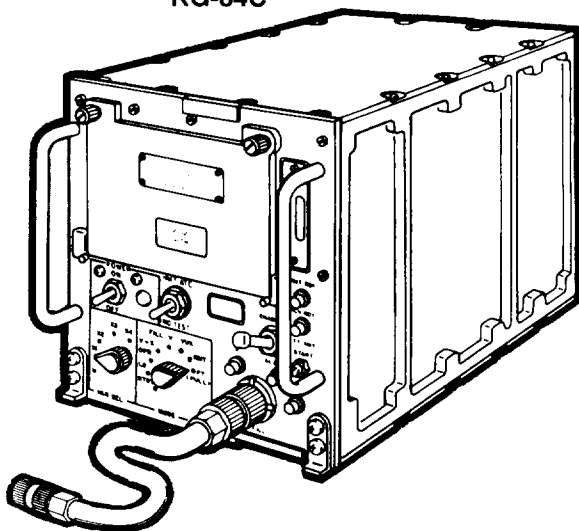
SECTION IV OPERATION UNDER UNUSUAL CONDITIONS



Operation under unusual conditions may be found in the manual for the communications system with which the KG-84C is used.

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KG-84C



FILL CABLE

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**CHAPTER 3
OPERATOR MAINTENANCE**



**Your KG-84C does not require
lubrication.**

SECTION I TROUBLESHOOTING PROCEDURES

3-1. GENERAL

This section lists problems you may find while operating or doing preventive maintenance.

Don't skip over steps. You must follow the steps in the order they are listed.

This section does not list all of the problems that could happen to your KG-84C. If a problem is not listed, or if a problem is not fixed by the steps given, notify higher level maintenance or your superior.

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Follow the steps when using the troubleshooting table:

- **MALFUNCTION** - Look here for your problem.
- **TEST OR INSPECTION** - If you find your problem under MALFUNCTION, this will give you the possible cause.
- **CORRECTIVE ACTION** -This will tell you how to possibly correct your problem.



Troubleshooting procedures take for granted that your KG-84C is getting power. Be sure to check the power source to see that it is in good working order before you troubleshoot.

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3-2. TROUBLESHOOTING TABLE

MALFUNCTION

- TEST OR INSPECTION
- CORRECTIVE ACTION

1. Zeroized unit does not initialize properly.
 - Perform check operation on variables in fill device (see paragraph 2-6 page 2-19).
-Load with a good variable.
2. Initialized unit ALARM indicator lights when power is turned ON.
 - Check for weak or outdated fill battery.
-Replace battery and reinitialize unit.

SECTION II MAINTENANCE PROCEDURES

3-3. GENERAL

Operator maintenance for your KG-84C is limited to:

- Inspection
- Fill Battery Replacement
- Cleaning
- Testing

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3-4. INSPECTION



Your KG-84C uses 115 Vac or 220 Vac or 24 Vdc. This power can seriously injure you. Make sure all power to the KG-84C has been removed before inspection.

Perform the following steps each time you use your KG-84C:

CONNECTORS - See that all connectors are properly seated.

CABLES - See that cables are not broken or cracked.

LINE PROTECTION MODULE - See that module is securely fastened and that attaching screws are in place.

FILL BATTERY - See that battery is not outdated or shows signs of corrosion. Battery life is 180 days.

EXTERIOR - See that exterior surface is free of dirt, dust, grease, and fungus.

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3-5. FILL BATTERY REPLACEMENT



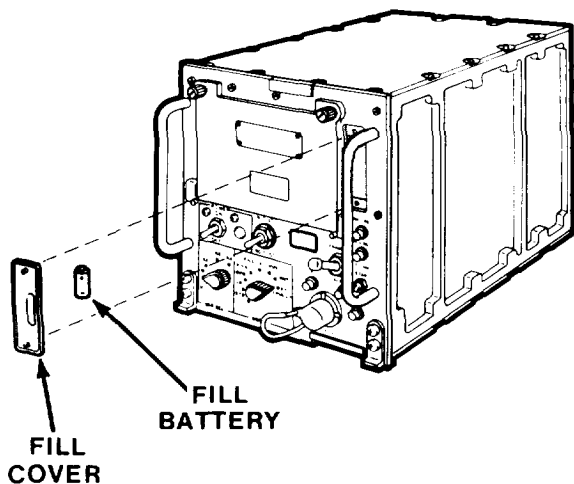
Fill Battery must be replaced every 180 days.



Fill Battery should be removed if the KG-84C is to be put in long-term storage.

- Loosen the two captive screws on the fill battery cover.
- Remove the fill battery cover. The screws will remain attached to the cover.

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If power is OFF you must replace the battery in 10 SECONDS or the variables stored in your KG-84C will be lost.

- Remove old battery and dispose of battery in a safe manner.

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Be careful when disposing the replaced FILL BATTERY. BA-1372/U is a mercury battery and will explode if accidentally shorted or placed in an Incinerator. Dispose of battery as specified by local procedures.

- Insert fill battery BA-1372/U so that pointed end of battery lines up with groove slot of battery cavity. Make sure battery polarity and cavity polarity match.
- Replace fill battery cover and tighten the two captive screws.
- Write new date on BAT INSTL DATE scratch surface of cover



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3-6. CLEANING

Fumes of TRICHLOROTRIFLUOROETHANE are poisonous. Make sure the area is ventilated. Do not use it near open flames or a hot surface. Do not get it on your skin. Use gloves, sleeves, and an apron which the solvent cannot penetrate.

EXTERIOR SURFACE

Remove dust and loose dirt with a soft cloth.

Remove grease oil, fungus and ground-in dirt with a cloth dampened (not wet) with TRICHLOROTRIFLUOROETHANE.

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CONNECTORS

Clean all connectors with a cloth dampened with TRICHLOROTRIFLUOROETHANE. Wipe pin contacts with the same solution. Clean connector contacts the same way using a small brush or toothpick.

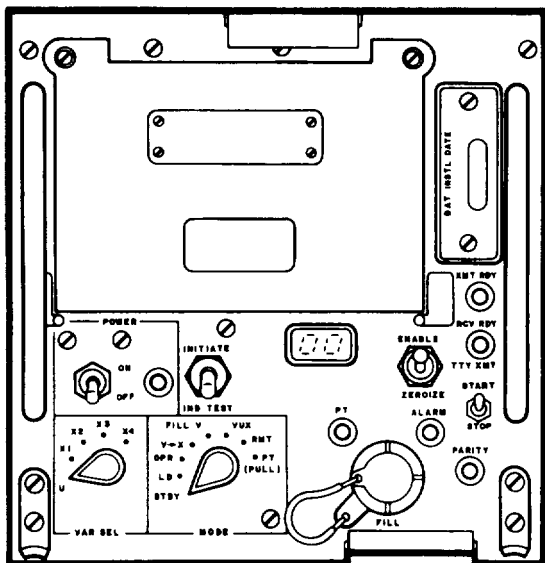
GROUND WIRE

Check for rust or corrosion and clean as required with a wire brush and TRICHLOROTRIFLUOROETHANE. Coat corrodible parts with a light film of silicone compound.

3-7. TESTING

Testing of your KG-84C is limited to performing the INITIALIZATION procedure found in paragraph 2-6.

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APPENDIX A REFERENCES

A-1. INTRODUCTION

Following is a list of all forms, Army Regulations, technical bulletins, technical manuals, and maintenance manuals referenced in this manual.

A-2. FORMS

DA Form 2028	Recommended Changes to Publications and Blank Forms.
DA Form 2404	Equipment Inspection and Maintenance Worksheet.
Form SF-368	Quality Deficiency Report.

A-3. ARMY REGULATIONS

AR 340-17	Release of Information and Records from Army Files.
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A-4. DA PAMPHLETS

DA PAM 738-750

The Army Maintenance Management System (TAMMS).

A-5. TECHNICAL BULLETINS

TB 750-38

Alteration of Communications Security Equipment.

A-6. MAINTENANCE MANUALS

KAO-210/TSEC

Guidelines for the Use and Operation of the KG-84C.

A-7. OTHER PUBLICATIONS

FM 5-25

Explosives and Demolitions.

FM 21-11

First Aid for Soldiers.

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**APPENDIX B
COMPONENTS OF END ITEM AND
BASIC ISSUE ITEMS**

SECTION I INTRODUCTION

B-1. SCOPE

This appendix lists components of end item and basic issue items for the KG-84C 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:

- **SECTION II. COMPONENTS OF END ITEM.**

This listing is for informational purposes only, and is not authority to requisition replacements. These items are 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.

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- **SECTION III. BASIC ISSUE ITEMS.**

These are the minimum essential items required to place the KG-84C in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the KG-84C during operation and whenever it is transferred between property accounts. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end items.

B-3. EXPLANATION OF COLUMNS

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

COLUMN (1) - Illustration Number (Illus Number). This column indicates the number of the illustrations in which the item is shown.

COLUMN (2) - National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

COLUMN (3) - Description. Indicates the National 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

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from different models of this equipment, the model is shown under the "Usable On" heading in this column.

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 (e.g., ea, in, pr).

COLUMN (5) - Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

SECTION II COMPONENTS OF END ITEM

(1) ILLUS NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION (FSCM) AND PART NUMBER USABLE ON CODE	(4) U/M	(5) QTY REQD
	5810-01- 250-6618	GENERAL PURPOSE TELEGRAPHY ENCRYPTION EQUIPMENT, KG-84C		1

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SECTION III BASIC ISSUE ITEMS

There are no basic issue items required to place the KG-84C in operation or perform emergency repair.

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**APPENDIX C
ADDITIONAL AUTHORIZATION LIST**

SECTION I INTRODUCTION

C-1. SCOPE

This appendix lists additional items you are authorized for the support of the General Purpose Telegraphy Encryption Equipment.

C-2. GENERAL


This list identifies items that do not have to accompany the General Purpose Telegraphy Encryption Equipment, and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

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.


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SECTION II ADDITIONAL AUTHORIZATION LIST

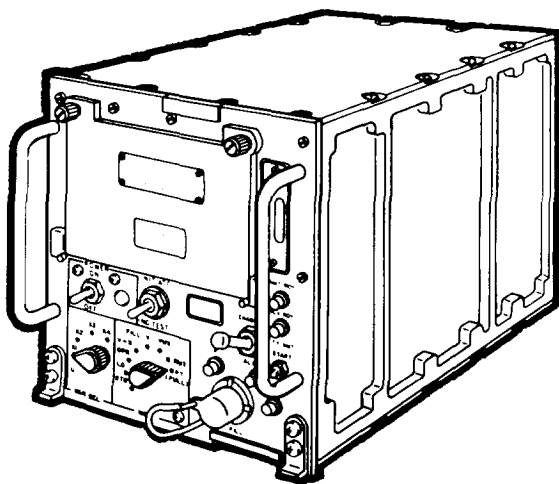
(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION FSCM & PART NUMBER USABLE ON CODE	(3) U/M	(4) QTY AUTH
MTOE AUTHORIZED ITEMS			
5135-00-081-3493	BATTERY BA 1372/U	EA	2
5810-01-066-7587	CABLE ASSEMBLY. FILL ON 512424 (98230)	EA	1
 Any of the three fill devices can be used with the KG-84C. The KYX-15A/TSEC must be available if REMOTE KEYING operation is used.			
5810-01-026-9618	ELECTRONIC TRANSFER DEVICE, KYK-13/TSEC ON 190318 (98230)	EA	1
5810-01-095-1312	NET CONTROL DEVICE, KYX-15A/TSEC ON 190303 (98230)	EA	1

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ADDITIONAL AUTHORIZATION LIST (CONTINUED)

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION FSCM & PART NUMBER USABLE ON CODE	(3) U/M	(4) QTY AUTH
5810-01-026-9620	MTOE AUTHORIZED ITEMS TAPE READER, GENERAL PURPOSE, KOI-18/TSEC ON 190315 (98230)	EA	1
	EMP/LIGHTNING PROTECTOR (LINE PROTECTION MODULE)	EA	1
 This Line Protection Module (LPM) not versatile and can only be used with the KG-84C.			

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**APPENDIX D
EXPENDABLE SUPPLIES AND
MATERIALS LIST**

SECTION I GENERAL INFORMATION

D-1. INTRODUCTION

This appendix lists expendable supplies and materials you will need to operate and maintain the KG-84C.

D-2. EXPLANATION OF COLUMNS

ITEM NO. - This number is referenced in the narrative instructions to identify the material (for example, "Use cleaning compound, Item 2, App. D").

LEVEL - Shows the lowest level of maintenance that needs the listed item. Enter as applicable:

C - Crew/Operator

O - Organizational Maintenance

F - Intermediate Direct Support Maintenance

H - Intermediate General Support Maintenance

L - Specialized Repair Activity

NATIONAL STOCK NUMBER - Shows the National Stock Number assigned to each item and used to requisition that item.

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DESCRIPTION - Shows the National Item Name and (if required) a short description to identify and locate the item. The last line for each item shows the Federal Supply Code for Manufacturers (FSCM) in parentheses, followed by the part number.

UNIT OF MEASURE (U/M) - Shows the measure of the item needed to perform the actual operation/maintenance function. This measure is shown by a two-letter abbreviation (for example, EA, OZ, IN).

SECTION II EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	C	8305-00-267-3015	CLEANING CLOTH (81348)	YD
2	C	7930-00-395-9542	Cleaning Compound	OZ
3	C	5340-00-906-3666	Brush, Soft Bristle (01099)	EA

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By Order of the Secretary of the Army:

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Chief of Staff

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The Adjutant General

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