

TM 11-5805-630-12  
NAVELEX 0967-438-0011  
TO 31W1-4-257-1  
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CHANGE  
NO. 1

**DEPARTMENTS OF THE ARMY,  
THE NAVY, AND THE AIR FORCE**  
Washington, DC, 27 January 1974

**Operator's and Organizational Maintenance Manual**  
**Including Repair Parts and Special Tools List**  
**CALL DIRECTOR SYSTEM, MODEL 134A AND MODEL 134B**

TM 11-5805-630-12 NAVELEX0967-438-0010 /TO 31W1-4-257-1, 5 October 1972 is changed as follows

1. The title is changed as shown above.
2. New or changed material is indicated by a vertical bar in the margin
3. Remove old pages and insert new pages as indicated below:

Remove	Insert
i and ii . . . . .	i and ii
1-0 through 1-5 . . . . .	1-0 through 1- ( )
2-1 through 2-6. . . . .	2-1 through 2-( )
3-1 through 3-5. . . . .	3-1 through 3-( )
4-1 and 4-2. . . . .	4-1 and 4-2
4-5 and 4-6. . . . .	4-5 and 4-6
B-1 through B-4 . . . . .	B-1 through B-4
C-3 . . . . .	C-3

4. File this change sheet in the front of the manual for reference purposes.

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Units org under fol TOE  
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11-158  
11-302  
11-347  
11-357  
29-119  
29-134  
29-136

AG & USAF None

For explanation of abbreviations used, see AF 110-50

**Technical Manual**  
 NO. 11-5805-630-12  
**Technical Manual**  
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**Technical Order**  
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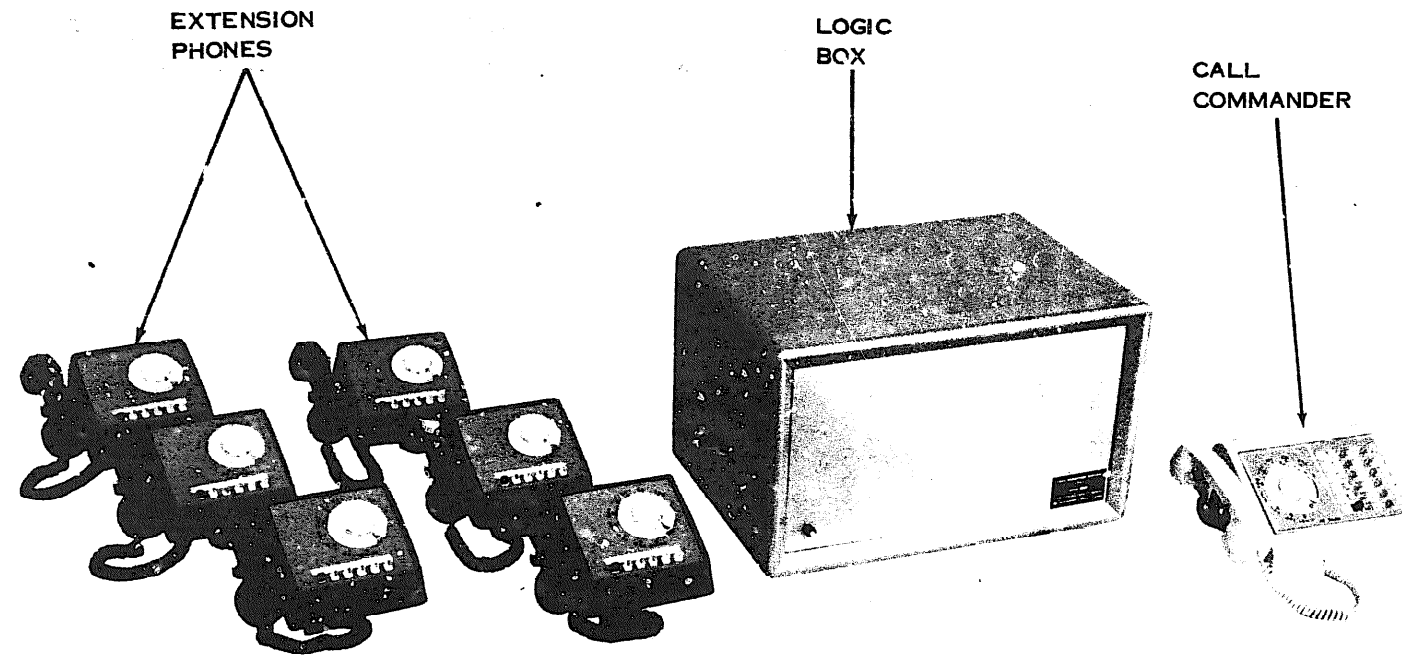
**Operator's and Organizational Maintenance Manual**  
**Including Repair Parts and Special Tools List**  
**CALL DIRECTOR SYSTEM, MODEL 134A AND MODEL 134B**

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Figure 1-1. Call Director System, Male1 134A and 1348.

CHAPTER 1  
INTRODUCTION

Section I. GENERAL

1-1 Scope

a. This technical manual contains installation and operator and organizational maintenance for the Call Director System, Model 134A and 134B (fig. 1-1). Unless otherwise specified, all instructions contained in this manual pertain to all models.

b. Throughout this manual, where appropriate references are made to other publications which cover direct support and general support maintenance, and depot maintenance work requirements for the equipments as installed in the Model 134A and 134B, a complete listing of applicable reference publications is provided in appendix A.

c. The maintenance allocation chart appears in appendix B, and the repair parts and special tools list appears in appendix C.

**NOTE**

Appendix C is current as of 11 August 1973.

1-2 Index of Publications

a. *DA Pam 310-4*. Refer to the latest issue of *DA Pam 310-4* to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Pam 310-7*. Refer to the latest issue of *DA Pam 310-7* to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1-3 Forms and Records

a. *Report of Maintenance and Unsatis-*

*factory Equipment*. Use equipment forms and records in accordance with instructions given in TM 38-750.

b. *Report of Packaging and Handling Deficiencies*. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58(Army)/NAVSUP PUB 378(Navy)/AFR 71-4 (Air Force)/MCO P4030.29 (Marine Corps), and DSAR 4145.8.

c. *Discrepancy in Shipment Report (DISREP) (SF 361)*. Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38(Army)/NAVSUP INST 4610.33/AFM 75-18/MCO P4610.19A (Marine Corps), and DSAR 4500.15.

d. *Reporting of Equipment Manual Improvements*. Report of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-CW, Fort Monmouth, NJ 07703.

e. *Administrative Storage*. For procedures, forms and records, and inspections required during administrative storage of

1-4 Storage, Destruction of Material to Prevent Enemy Use

a. Refer to TM 740-90-1 for requirements concerning storage of this equipment.

b. Refer to chapter 2, section III of this manual which covers destruction of this equipment to prevent enemy use.

Section II. DESCRIPTION AND DATA

1-5 Purpose and Use

a. The Call Director System, Model 134A or 134B (fig. 1-1) is ground communications equipment used with the AUTOSEVOCOM Network. The equipment extends the use of a KY-3 classified unit for a Call Commander Telephone Set, Type 860 or 860A (call commander), six Extension Telephone Sets, Type 186 or 186A (extension phone), and a Call Director System Logic Set CD-134-43A,

or CD-134-43B (logic box).

b. The call commander and extension phones can direct dial through the KY-3 unit, and each extension phone is equipped with an exclusion feature for privacy of communication. One extension phone (No. 1) is equipped with an executive override circuit feature that interrupts any call in progress and permits exclusive use of the system. Also, an intercom network is made

available between the call commander phone and the six extension phones.

c. Call Director System Model 134B, has an additional push-to-talk plain function which allows the user to converse with a manual switchboard operator in the clear on outgoing or incoming calls.

#### 1-6 Description

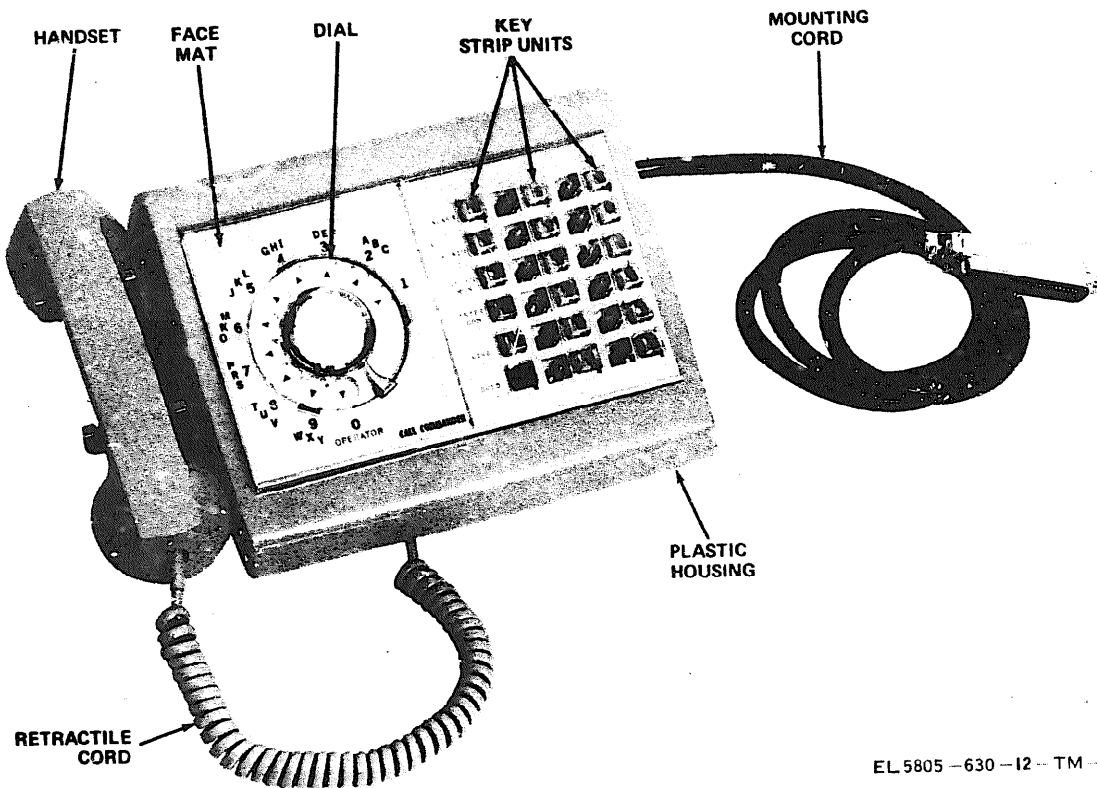
a. The Call Commander Telephone Set, Type 860 or 860A (fig. 1-2) is contained in a plastic housing. A dial with a translucent finger plate is mounted on the left side of the sloping front surface. Illuminated key-strip units with six keys per strip (in vertical rows) are located on the right side. The telephone is furnished equipped with 18 key buttons. The first vertical row of keys (key-strip unit) closest to the dial includes a red plastic hold key, and five clear plastic line and related functional pickup keys. The second row consists of six clear plastic dummy keys used for indicating purposes only for extension phones in use. The third row of keys are used for signaling the extension phone(s) of incoming calls and for intercom purposes.

b. The Extension Telephone Set, Type 186 or 186A (fig. 1-3) incorporates a standard dial unit and a six key-button strip arranged to initiate, answer, hold calls, and provide for intercommunication between the six extension phones and call commander set. Indicating lamps provide illumination

of the key buttons and designation strip.

c. The Call Director System Logic Set CD-134-43A or CD-134-43B (fig. 1-4) components are contained in a gray, steel cabinet with louvered vent slots at the rear of the cabinet (fig. 1-5). The front panel (fig. 1-4) of the cabinet contains a power on/off indicating light. The rear panel (fig. 1-5) incorporates eight receptacle connectors (J1 through J8) for cable connections between the call commander phone, extension phones, and KY-3 unit. Also provided is an AC power plug, an AUX ac power socket, a 0.8 A power protection fuse and a MAIN POWER SWITCH. Internal components within the cabinet (fig. 4-3) consist of 29 plug-in type relays mounted on a hinged rack panel that tilts upward for access to rear wiring and internal components. Components on the bottom of the cabinet (fig. 4-4) consist of a Relay Board (CD-134-7), Inclusion Matrix (CD-134-2), Exclusion Matrix (CD-134-4), Intercom Mixer (CD 134-6A), Line Mixer (CD-134-5A), Power Supply (CD-134-10A), Terminal Board (TB-1), and a receptacle panel containing five plug receptacles (P9 through P13).

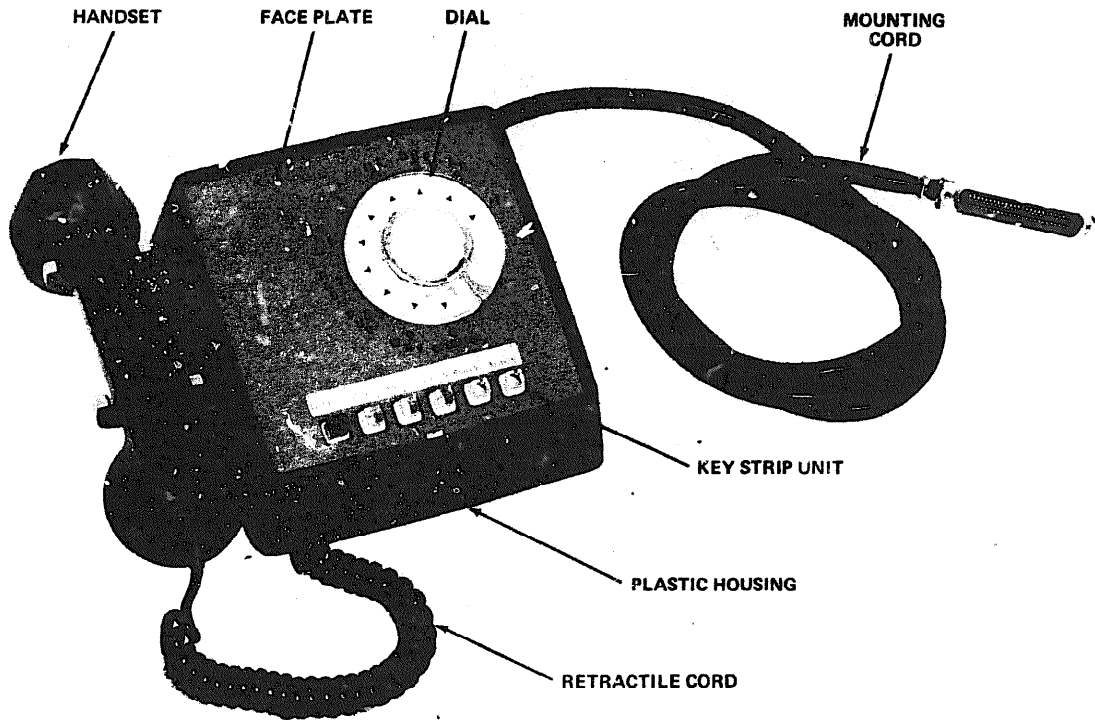
d. Accessory cables supplied (fig. 1-6) consist of one AC power cable for the call director system logic set, and one KY-3 extension cable for connection between the KY-3 unit and call director system logic set.



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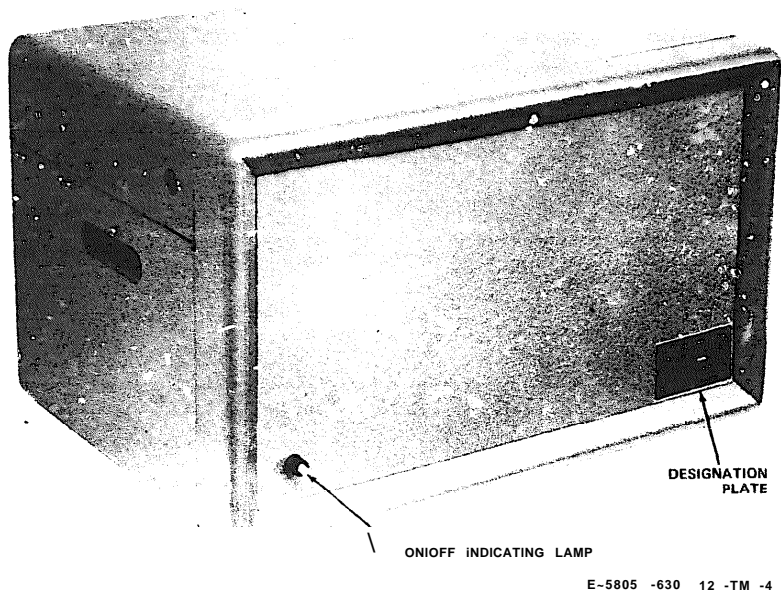
Figure 1-2. Call Commander Telephone Set, Type 860 and 860A.





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Figure 1-3. Extension Telephone Set, Type 186 and 186A.



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Figure 1-4. Call Director System Logic Set, CD-134-43A and CD-134-43B, front view.

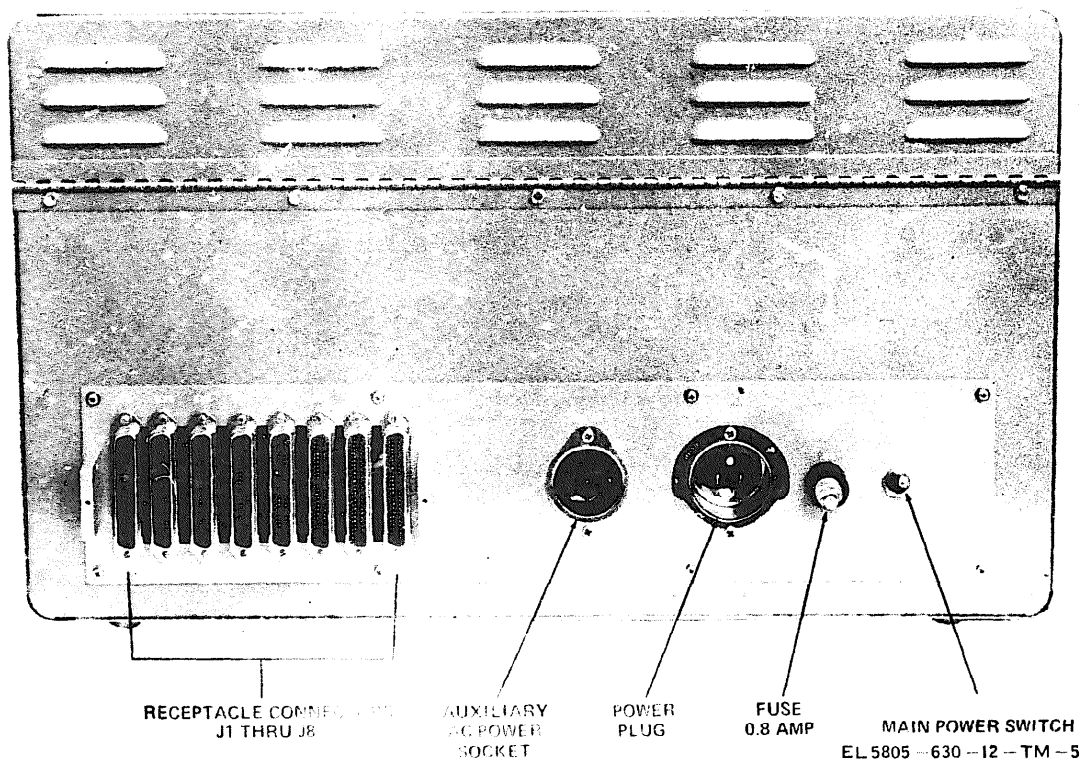
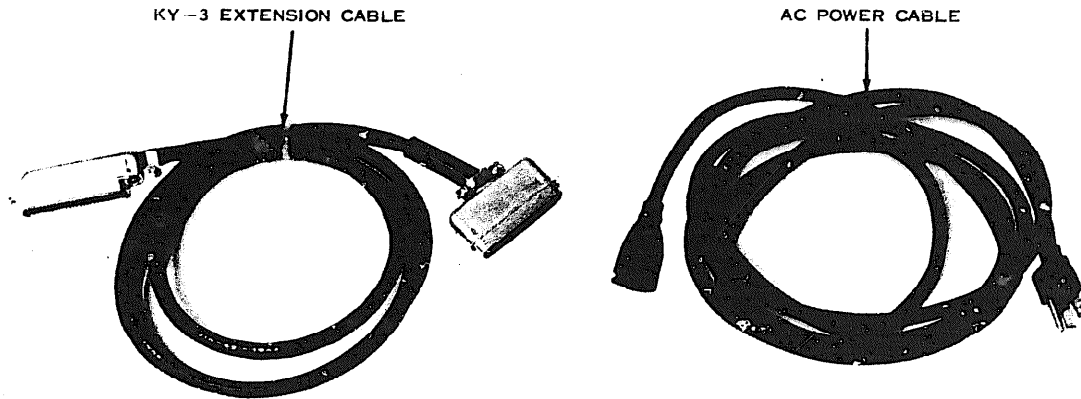


Figure 1-5. Call Director System Logic Set, CD-134-43A and CD-134-43B, rear view.



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Figure 1-6 Accessory cables

1-7 Technical Characteristics

Input voltage . . . . . 108-132vac 60Hz

Call Director System Logic Set CD-134-43A or CD-134-43B

Major Assemblies and Components:

- Relay Board . . . . . CD-134-7
- Intercom Mixer . . . . . CD-134-6A
- Line Mixer . . . . . CD-134-5A
- Power Supply . . . . . CD-134-10A
- Inclusion Matrix . . . . . CD-134-2
- Exclusion Matrix . . . . . CD-134-4
- Relays (29) . . . . . Type PE1685D17

Call Commander Telephone Set, Type 860 or 860A:

- Handset (Beige) . . . . . Type 811
- Dial . . . . . Type 52
- Spring Contacts . . . . . Bifurcated

- Pulse Cam w/scribe mark . . . . . 16°  
(Supplied w/pawl quieting provision and removable finger stop)
- Extension Telephone Set, Type 186 or 186A:

- Handset (Black) . . . . . Type 811
- Dial . . . . . Type 52
- Spring Contacts . . . . . Bifurcated
- Pulse Cam w/scribe mark . . . . . 16°  
(Supplied w/pawl quieting provision and removable finger stop)

1-8 Items Comprising an Operable Equipment

a. For Call Director System, Model 134A

FSN	Item	Quantity	Height (in.)	Depth (in.)	Width (in.)	Weight (lb.)
	Call Commander Telephone Set, Type 860	1	4 1/4	12 7/8	8 1/2	
	Extension Telephone Set, Type 186	6	4 1/2	8 1/2	10	
	Call Director System Logic Set CD-134-43A	1	13 3/8	16 1/4	21 1/2	
	AC Power Cable 17460S	1				
	KY-3 Extension Cable CD-134-11A	1				

b. For Call Director System, Model 134B

FSN	Item	Quantity	Height (in.)	Depth (in.)	Width (in.)	Weight (lb.)
	Call Commander Telephone Set, Type 860A	1	4 1/4	12 7/8	8 1/2	
	Extension Telephone Set, Type 186A	6	4 1/2	8 1/2	10	
	Call Director System Logic Set CD-134-43B	1	13 3/8	16 1/4	21 1/2	
	AC Power Cable 17460S	1				
	KY-3 Extensior Cable CD-134-11B	1				

**NOTE**

Repair parts and special tools that accompany Call Director System,

Model 134A are listed in appendix C.

CHAPTER 2  
INSTALLATION

Section I. SERVICE UPON RECEIPT

2-1 Unpacking

*a.* The equipment as shipped has been preserved and adequately packaged in accordance with level C of Military Specification MIL-P-116, with repair parts and accessories packed in accordance with level A of above referenced specification. Interior and exterior shipping containers have been marked and stamped in accordance with Military Standard 129. Packing material consists of cellulosic cushioning material per federal specification PPC-843, fiberboard material per PPB-636 and flexible water vaporproof barrier material per military specification MIL-B-131. (Refer to figure 2-1 and 2-2.)

*b.* Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 5 (para 1-3*b*).

2-2 Checking

*a.* Check the equipment against the component listing in this manual (para 1-8) and the packing slip to see if the shipment is complete. Report all discrepancies in accordance with paragraph 1-3*c*. The equipment shall be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

*b.* Check to see whether the equipment has been modified (equipment which has been modified will have the MWO number on the front panel, near the nomenclature block). Check also to see whether all currently applicable MWO's have been applied. (Current MWO's applicable to the equipment are listed in DA Pam 310-7 as applicable.)

*c.* For dimensions, weights, and volume of packaged items, see SB 700-20.

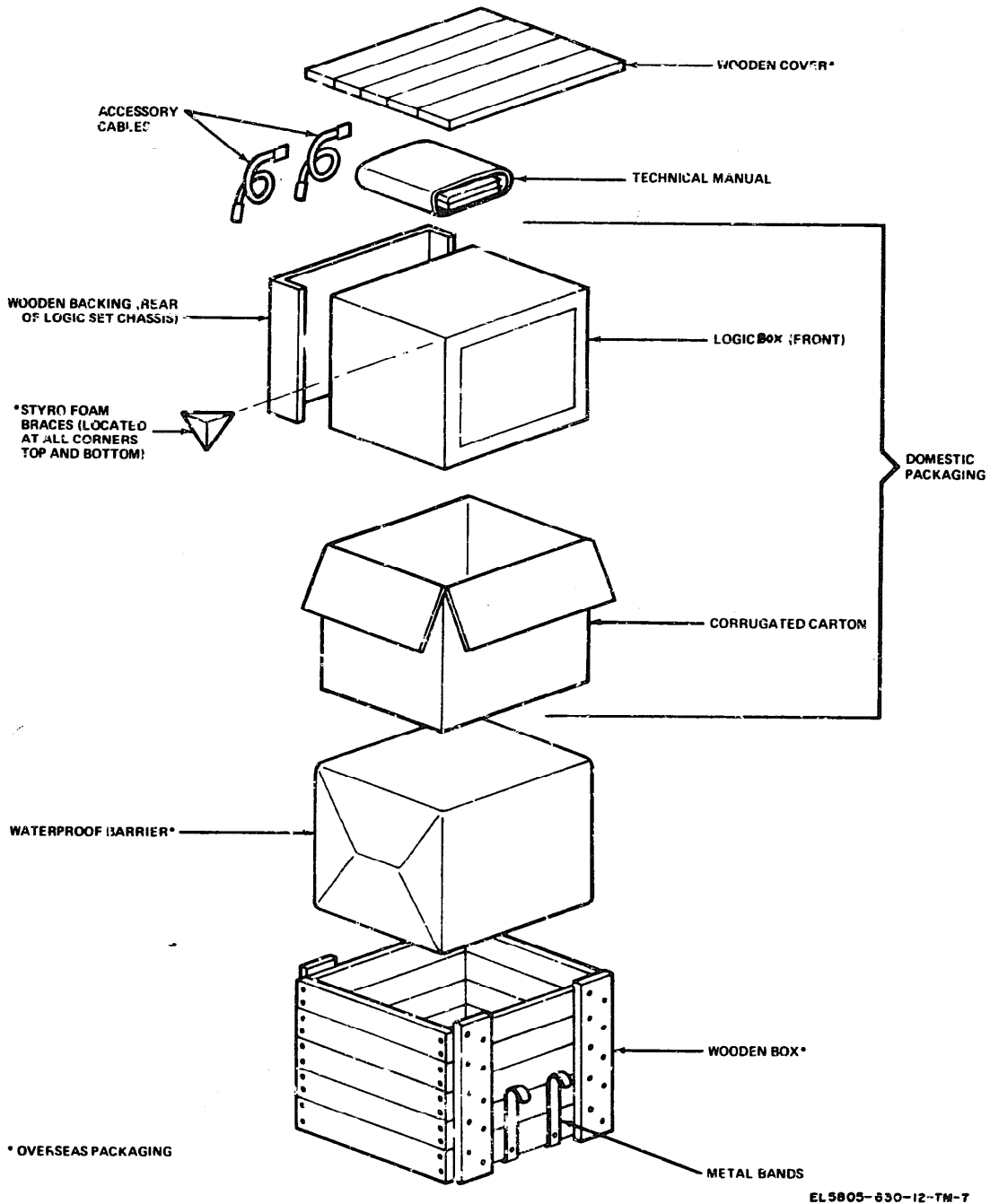


Figure 2-1 Packaging diagram for Call Director System Logic Set CD-134-43A or CD-134-43B

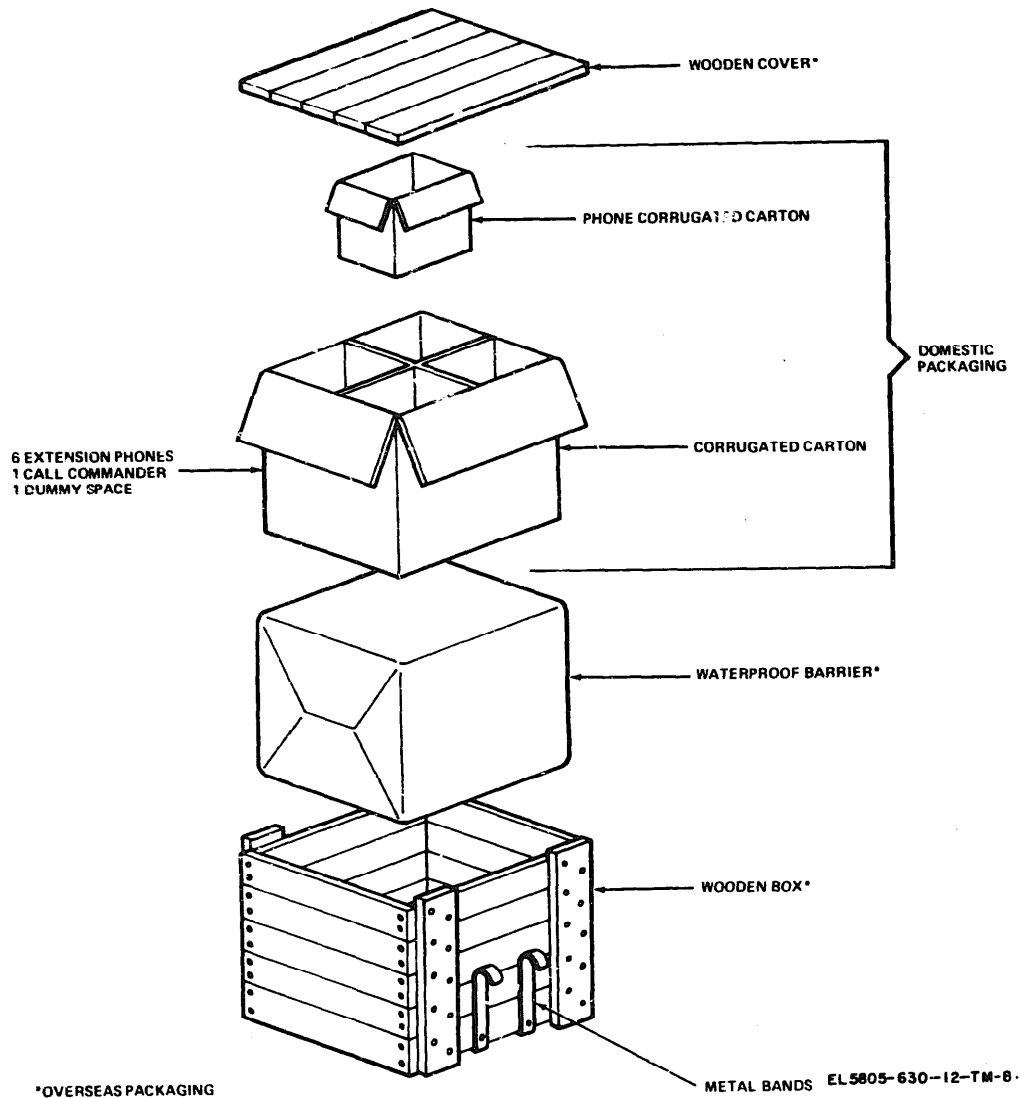


Figure 2-2 Packaging Diagram for Telephone Sets type 186 or 186A, Call Commander, Type 860 or 860A and spares

## Section II. SYSTEM PLANNING AND INSTRUCTION

### 2-3 Location and Cabling

a. In determining the location for installation, be guided by applicable command directives so far as installation requirements and other provisions warrant

in location and placement of equipment.  
b. After location is determined, run 25 pair connector-type running cables to those points shown in figure 2-3.

**NOTE**

Connector J1 on the rear of the logic box is the only connector that can provide executive override feature. Determine which extension phone will require this feature and connect its cable to connector J1.

This will be a 1-to-1 wire extension cable identically mated with the phone line cord with a loop resistance rating of 10 ohms. To protect the junction of the cable receptacle and line cord plug, use the floor-mounted cover assembly provided with the installation duct system if available. Otherwise, install a single connector housing on the baseboard or on the kneewall shield of the desk, if wooden. If the desk is steel, mount the connector housing on a adhesive mounting plate (No. 740 Automatic Electric Co.).

c. Install connector terminated running cable in conduit along wall surfaces or underfloor duct as required, with its receptacle (female) end at the telephone line cord plug.

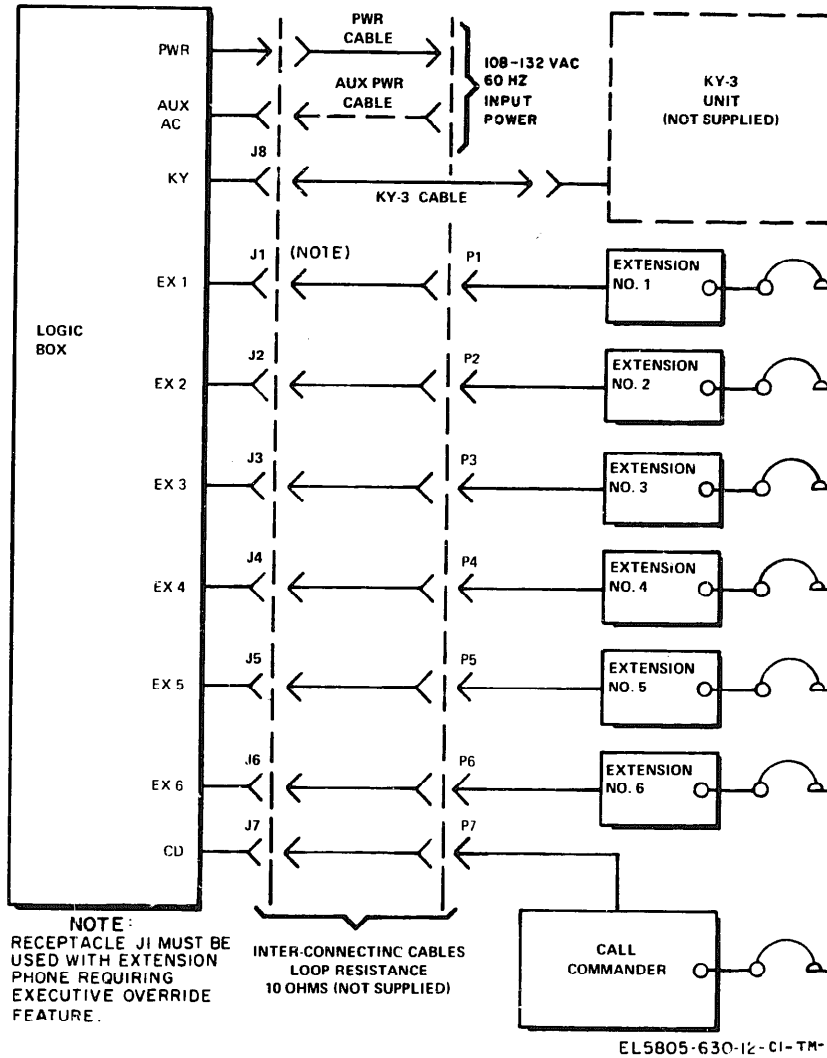


Figure 2-3 Call Director System, Model 134A or 134B, cabling diagram.

## 2 - 4 Checkout Procedure

a. *Call Commander Telephone Set, Type 860 or 860A.* With all cabling interconnected between the call commander, extension phones, logic box, and KY-3 unit (fig. 2-3), proceed as follows:

(1) Place MAIN POWER SWITCH to ON position located at rear of logic box. Check that yellow on/off indicating light at front of logic box is lighted.

(2) Sequentially depress and release each EXT INTERCOM button on the call commander. Check that the corresponding extension phone buzzes and that its INTERCOM button lights only while button is depressed.

(3) Push INCLN BUZZ button on each extension phone. Check that call commander buzzes as each button is depressed.

(4) Push INTERCOM button on all extensions and call commander. Sequentially remove the handset from cradle at each extension phone and check that INTERCOM light on extension phone is lighted and corresponding EXT INTERCOM light on call commander is lighted. Remove call commander handset from cradle and check that INTERCOM light on call commander lights.

(5) Push LINE buttons on all extension phones and call commander.

(6) Lift handset from cradle on each extension phone. Check that call commander has LINE, PLAIN, INCLN MON, and EXT LINE buttons lighted.

(7) Push ALARM button of KY-3 unit. Check for audible buzz at the call commander and verify that ALARM button is lighted. Check that alarm is canceled out by pushing the ALARM button at call commander.

(8) For Type 860 only, push PLAIN button on Call commander. Check that LINE button is lighted and audible ringing sound is heard at call commander.

(9) For Type 860A only, push PLAIN button and LINE button on call commander. Check that LINE button is lighted and that manual switchboard is ringing.

(10) Push LINE button on call commander with handset off the cradle. Check DIAL INDICATOR on the KY-3 unit to see that the light is on. Rotate dial on the call commander. See that DIAL INDICATOR light flashes at the KY-3 unit as the dial rotates.

(11) Check for sidetone in line.

(12) Push HOLD button and depress cradle (hook switch). See that conditions remain the same when depressing the cradle.

(13) Push the LINE button on call commander to release the hold condition.

(14) Push INTERCOM button on call commander and check for sidetone.

b. *Extension Phones.*

(1) With all phone handsets in cradle, check that no lights are lighted on the extension phones or call commander. Verify that the LINE button is pushed in on all extension phones.

(2) Remove handset from cradle on extension phone (under st). Verify the following:

(a) PLAIN and LINE lights should be lighted on extension phone.

(b) LINE, PLAIN, and INCLN BUZZ lights should be lighted on all other extension phones.

(c) LINE, PLAIN, INCLN MON and corresponding EXT LINE should be lighted on call commander.

(d) Check that DIAL INDICATOR light on the KY-3 unit is lighted.

(e) Rotate dial on extension phone to dial the operator. See that the DIAL INDICATOR light on KY-3 unit flashes as dial rotates.

(3) Push the HOLD button on the extension phone. See that the DIAL INDICATOR light on KY-3 unit goes out and that the INCLN BUZZ light is off on each extension phone and INCLN MON light at call commander is off.

(4) Depress and release cradle (hook-switch) on test phone several times. See that conditions remain the same.

(5) Push the LINE button on the extension phone. Push INCLN BUZZ button on extension phone. Check to see that buzzing sound is heard at call commander.

(6) For Type 186A extension phone only. Push the PLAIN button and LINE button. Check that manual switchboard is ringing.

(7) Push the ALARM button on the KY-3 unit. Verify the following:

(a) Buzz sound should be heard at call commander.

(b) The ALARM light on the call commander and all extension phones are lighted.

(c) Disable the buzzer and ALARM



lights by pushing the ALARM button on the call commander.

(8) Push the EXT INTERCOM button on the call commander corresponding to the extension phone number. Verify the following:

(a) Buzzer sound should be heard at the extension phone.

(b) The INTERCOM light on the extension phone should be lighted (but only while the corresponding EXT INTERCOM button at call commander is depressed).

(9) Pull out the exclusion plunger on the extension phone. See that all EXT lights on the call commander are lighted.

(10) Push in slightly on the exclusion plunger; it should automatically pull in.

(11) Push INTERCOM button on the extension phone. Check that only INTERCOM light on extension phone and the corresponding EXT INTERCOM light on the call commander for the extension phone are lighted. Also, the DIAL INDICATOR light on the KY-3 unit should be extinguished.

(12) Check extension phone for sidetone.

(13) Push LINE button on the extension phone. Check the extension phone for sidetone.

(14) Remove the handset from another extension phone and check for sidetone of the extension phone under test. The sidetone should disappear when the exclusion plunger is pulled out on the other extension phone.

(15) See that sidetone appears again when the other extension phone handset is returned to cradle.

(16) Pull out exclusion plunger on the extension phone. Put the handset on the cradle. Check that the exclusion plunger goes in as the handset is returned to cradle.

(17) Perform the procedures in (1) through (16) above for each of the other extension phones.

**NOTE**

Upon successful completion of all check-out tests described above, equipment can be considered fully operational.

Section III. DEMOLITION OF MATERIAL TO PREVENT ENEMY USE

2.5 Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 2-6 will be used to prevent further use of the Call Director System. Model 134A or 134B.

2.6 Methods of Destruction

Use any or all of the following methods to destroy the Model 134A or 134B.

a. *Smash.* Smash the telephone housings and controls, and the control switches, relays, capacitors, printed circuit boards, and connectors of the call director system

logic set.

b. *Cut.* Cut all cables and cords and slash the wiring on the components.

WARNING

Be extremely careful when handling explosives and incendiary devices. Use these items only when the need is urgent.

c. *Burn.* Burn cords and technical manuals.

d. *Explode.* Use explosives if necessary.

e. *Dispose.* Bury or scatter the destroyed parts in slit trenches or foxholes, or throw them into streams or lakes.

CHAPTER 3  
OPERATING INSTRUCTIONS

3-1 Controls and Indicators

The controls and indicators for the Call Director System, Model 134A and 134B are listed in *a* through *c* below.  
*a. Call Commander* (fig. 3-1).

Control or indicator	Description	Function
ALARM pushbutton switch . . . . .	Two-position, momentary . . . .	Illuminates (red) and rings buzzer when KY-3 generates alarm signal. When depressed the alarm signal is canceled out.
PLAIN pushbutton switch (type 860 only) . . . . .	Two-position, momentary . . . .	ON-position energizes ringing bell for local ringing.
PLAIN pushbutton switch (type 860A only) . . . . .	Two-position, momentary . . . .	ON position allows user to converse with manual switchboard operator.
PLAIN pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position energizes ringing bell for local ringing.
INCLN MON lamp . . . . .	10ESB . . . . .	Indicates that more than one extension phone is on line.
INTERCOM pushbutton switch . . . . .	Two-position, latching . . . . .	ON-position permits use of intercom for buzzing proper extension phone.
LINE pushbutton switch . . . . .	Two-position, latching . . . . .	ON-position permits selection of outside line when making or answering call.
HOLD pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position holds incoming line call until proper called party is selected.
EXT #1 LINE lamp . . . . .	10ESB . . . . .	Illuminates when EXT #1 is on line.
EXT #2 LINE lamp . . . . .	10ESB . . . . .	Illuminates when EXT #2 is on line.
EXT #3 LINE lamp . . . . .	10ESB . . . . .	Illuminates when EXT #3 is on line.
EXT #4 LINE lamp . . . . .	10ESB . . . . .	Illuminates when EXT #4 is on line.
EXT #5 LINE lamp . . . . .	10ESB . . . . .	Illuminates when EXT #5 is on line.
EXT #6 LINE lamp . . . . .	10ESB . . . . .	Illuminates when EXT #6 is on line.
EXT #1 INTERCOM pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position buzzes EXT #1 for incoming call.
EXT #2 INTERCOM pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position buzzes EXT #2 for incoming call.
EXT #3 INTERCOM pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position buzzes EXT #3 for incoming call.
EXT #4 INTERCOM pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position buzzes EXT #4 for incoming call.
EXT #5 INTERCOM pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position buzzes EXT #5 for incoming call.
EXT #6 INTERCOM pushbutton switch . . . . .	Two-position, momentary . . . .	ON-position buzzes EXT #6 for incoming call.
EXT #1 INTERCOM lamp . . . . .	10ESB . . . . .	Illuminates when EXT #1 is on INTERCOM.
EXT #2 INTERCOM lamp . . . . .	10ESB . . . . .	Illuminates when EXT #2 is on INTERCOM.
EXT #3 INTERCOM lamp . . . . .	10ESB . . . . .	Illuminates when EXT #3 is on INTERCOM.
EXT #4 INTERCOM lamp . . . . .	10ESB . . . . .	Illuminates when EXT #4 is on INTERCOM.
EXT #5 INTERCOM lamp . . . . .	10ESB . . . . .	Illuminates when EXT #5 is on INTERCOM.
EXT #6 INTERCOM lamp . . . . .	10ESB . . . . .	Illuminates when EXT #6 is on INTERCOM.
Ringer volume adjusting lever . . . . .		Permits audible sound adjustment of ringer volume.

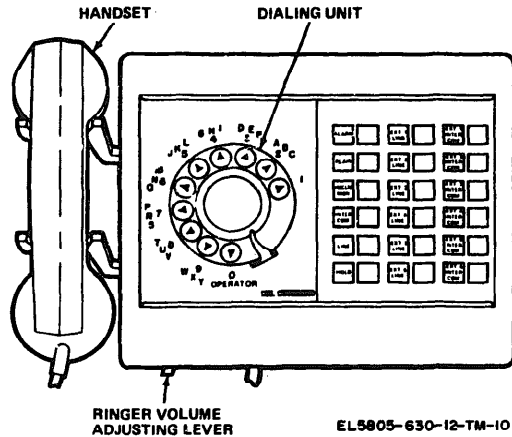


Figure 3-1 Call Commander Telephone Set, type 860 and 860A controls.

*b. Extension Phone (fig. 3-2)*

<i>Control or indicator</i>	<i>Description</i>	<i>Function</i>
HOLD pushbutton indicator . . . . .	Two-position, momentary . . . . .	ON-position hold incoming line call until particular calling party is selected.
LINE pushbutton switch . . . . .	Two-position, latching . . . . .	ON-position permits selection of outside line when making or answering call.
INTERCOM pushbutton switch . . . . .	Two-position, latching . . . . .	ON-position permits call commander operator to be buzzed and notified of required extension party (used in conjunction with INCLN BUZZ pushbutton).
INCLN BUZZ pushbutton switch . . . . .	Two-position, momentary . . . . .	ON-position energizes buzzer circuit of call commander.
PLAIN lamp (type 860 only) . . . . .	10ESB . . . . .	Illuminates when local ring call is received at call commander.
PLAIN pushbutton switch (type 186A only) . . . . .	Two-position, momentary . . . . .	ON-position allows user to converse with manual switchboard operator.
ALARM lamp . . . . .	10ESB . . . . .	Illuminates when alarm signal is generated by KY-3 unit.
INCLN BUZZ lamp . . . . .	10ESB . . . . .	Illuminates when more than one extension phone is on line.
Exclusion Plunger switch . . . . .	Two-position . . . . .	ON-position invokes privacy feature which excludes other extension phones from the line. When invoked at an extension phone all incoming calls will terminate at this extension and prevent other extension phones from intruding.

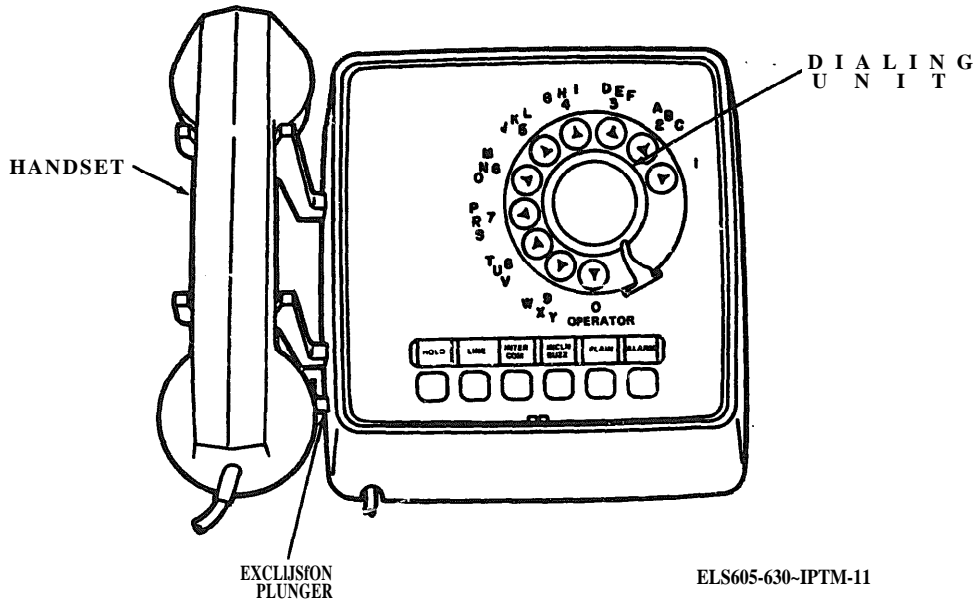


Figure 3-2. Extension Telephone Set, type 186 and 186A controls.

c. Logic Box (fig. 3-3)

Control or indicator	Description	Function
MAIN POWER SWITCH	Two-position	Applies AC power to set.
.8A indicating fuse	313-800, 8/10A, 250V	Illuminates when input power fuse is blown.
On/off indicating lamp (located on front panel of set)	507-3911, 10V, 40MA	Illuminates (yellow) when s

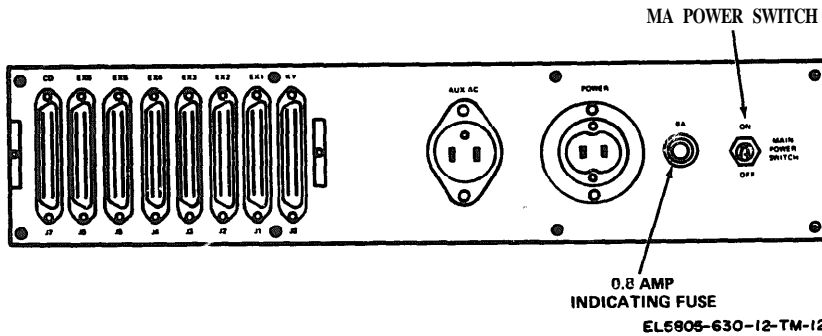


Figure 3-3. Call Director System Logic Set, CD-134-43A and CD-134-438, controls and connectors.

3-2 Operating Procedure

**a. Placing Outside Call From Call Commander for type 860.**

(1) Check to insure that LINE is not in use (LINE button extinguished). Push in LINE button and pick up handset from its cradle. When button lights and dial tone is heard, line is ready to use. Proceed to dial the call.

**NOTE**

On the six extension phones, the LINE and INCLN BUZZ lamps will be lighted.

(2) When the called party answers, circuit is complete.

**NOTE**

If during the conversation an extension phone is lifted from the cradle, the call commander INCLN MON lamp of the call commander will light.

(3) When call is completed, return handset to the cradle; circuit is now disconnected.

**b. Placing Outside Call From Call Commander, Type 860A, Through a Manual Switchboard.**

(1) Check to insure that LINE is not in use (LINE button extinguished).

(2) Push in LINE button and pick up handset from its cradle. Switchboard will ring.

(3) Push in PLAIN button to converse with manual switchboard operator.

(4) Switchboard operator processes the call.

**NOTE**

On the six extension phones, the LINE and INCLN BUZZ lamps will be lighted.

(5) Release PLAIN button and await answer from called party.

**NOTE**

If during the conversation an extension phone is lifted from the cradle, the call commander INCLN MON lamp of the call commander will light.

(6) When call is completed, return handset to the cradle; circuit is now disconnected.

**c. Incoming Call to Call Commander type 860.**

(1) When the LINE button flashes and the ringing tone is heard, an incoming call is indicated. Push in LINE button, lift hand-

set from cradle and answer.

(2) When operator determines the particular extension the calling party wishes, the HOLD button is depressed to hold the line. The operator pushes in the INTERCOM button, then depresses the correct EXT INTERCOM button to "buzz" the proper extension.

(3) The extension party answers by pushing in the INTERCOM button; is notified of the incoming call and then pushes in the LINE button to talk with calling party. The call commander operator then returns handset to cradle.

**NOTE**

On Type 860A if necessary to talk to local operator, push PLAIN button to converse.

**d. Intercom At Call Commander.**

(1) The call commander operator can call one or any number of the six extension phones by lifting handset, pushing in the INTERCOM button and then depressing the appropriate EXT INTERCOM button to "buzz" the desired extension.

**NOTE**

When operator buzzes an extension with audible signal, the INTERCOM lamp at the extension phone will light.

(2) The extension party depresses the INTERCOM button and lifts the handset. When answered, the EXT INTERCOM lamp associated with the extension phone lights and circuit is complete.

**e. Hold At The Call Commander.**

**NOTE**

Hold is a feature for keeping a circuit from dropping when a call is transferred from the call commander to an extension phone or from one extension phone to another.

(1) Upon receiving incoming call for transfer to an extension phone, call commander operator depresses red HOLD button, then notifies extension phone party of call as indicated in *c* above.

(2) The extension phone party then completes the line by depressing the extension phone LINE button, which releases the call commander.

**f. Outside Call From Extension Telephone, type 186.** Push in unlighted LINE button and pick up hand-set from cradle. When button lights and dial tone is heard,

line is ready to use. Proceed to dial the call.

**NOTE**

This action energizes the KY-3 whereby the LINE lamps and INCLN BUZZ lamps light on other extension phones and the LINE lamp lights on call commander. The INCLN BUZZ lamp on the calling extension phone does not light when call is made, unless another extension intrudes on the line.

*g. Outside Call From Extension Telephone, Type 186A, Through Manual Switchboard.*

(1) Push in unlighted LINE button. LINE button lights.

(2) Pick up handset from cradle, push in PLAIN button to converse with manual switchboard operator.

(3) Switchboard operator processes the call.

(4) Release PLAIN button and await answer from called party.

**NOTE**

This action energizes the KY-3 whereby the LINE lamps and INCLN BUZZ lamps light on other extension phones and the LINE lamp lights on call commander. Then INCLN BUZZ lamp on the calling extension phone does not light when call is made, unless another extension intrudes on the line.

*h. Incoming Call and Hold at Extension Phone.*

**NOTE**

Incoming calls are normally answered at the call commander. The following procedure is used when a call commander operator is not on duty.

(1) An incoming call into the Call Director System will ring a bell in the call commander and the LINE lamps of the commander and the six extension phones light.

(2) The call may be answered at an extension phone by depressing the LINE button and lifting the handset from cradle.

**NOTE**

On Type 186A, if necessary to talk to local operator, push PLAIN button to converse.

(3) Depress red hold button on the extension phone which prevents dropping the call from the line and holds it until the call is transferred to another extension or to the call commander.

**NOTE**

When the call is placed in a hold status, the individual at the answering extension phone must physically notify the called party at the required extension phone of the call. Release of hold at the answering extension phone will occur when the handset is replaced and the other extension phone completes the call.

*i. Intercom At an Extension Phone.* Push in the INTERCOM button and lift handset from cradle. Depress INCLN BUZZ button to audibly contact the call commander operator.

**NOTE**

Intercom phones can only "buzz" the call commander operator who in turn will "buzz" an extension or all extensions to allow communication between two or more extension parties.

*j. Exclusion Operation Feature.*

**NOTE**

Exclusion is a privacy feature and is activated by pulling a lever out at the bottom of the extension telephone. When this exclusion is invoked, the five other extension phones and the call commander are excluded from the call and cannot speak into or hear the conversation in progress.

(1) When a call is in progress, the LINE lamp and the INCLN BUZZ lamps are lighted on all extension phones except for the extension phone in use which only has the LINE lamp lighted. The INCL MON lamp on the call commander will also be lighted.

(2) If another extension enters the line, then the INCLN BUZZ light on the extension in use will light, indicating that another extension is on the line.

(3) Pulling out the lever at the bottom of the phone at this time will exclude the extension that invaded the line and the INCLN BUZZ lamp at the extension phone on the line will extinguish.

(4) Return of the handset to its cradle will automatically return the exclusion plunger to OFF position.

**k. Executive Override Operation Feature.** One extension phone number is provided with an override circuit feature. Operation of the exclusion feature described in j above on this extension will terminate any incoming call at this extension and will not allow another extension to intrude on the line.

### 3-3. Operation Under Unusual Conditions

The Model 134A and 134B are designed for normal operation within environments that provide for complete protection from the elements for personnel and equipment; however under extreme conditions, the following precautions are necessary.

**a. Hot Climates.** In hot, dry climates,

connectors and receptacles and moving parts of telephones are subject to damage from dust and dirt. Take precautions to keep connectors clean. Avoid placing an open connector on the ground. Provide lubrication more frequently (quarterly).

**b. Warm, Damp Climates.** In warm, damp climates, the equipment is subject to damage from moisture and fungi. Wipe all moisture and fungi from the equipment with a lint-free cloth.

**c. Cold Climates.** Extreme cold causes cables and wires to become hard, brittle, and difficult to handle. Be careful when handling the cables and connecting them so that kinks and unnecessary loops will not result in permanent damage.

CHAPTER 4  
MAINTENANCE INSTRUCTIONS

4-1 General Section I. Preventive Maintenance

*a.* To insure that the Call Director System is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in the following table. The item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the unit will be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equip-

ment. Report all deficiencies together with the corrective action taken in accordance with instructions provided in TM 38-750.

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation; make the complete checks and services during an authorized downtime.

*b.* Repair parts, tools, test equipment, and accessories issued with or authorized for use by the operator for the call director system are listed in appendixes B and C of this manual.

4-2 Operator's Weekly Preventive Checks and Services

Sequence No.	Item to be inspected	Procedure	References
<b>EXTERIOR</b>			
1	External condition . . . . .	<i>a.</i> Check for housing punctures or cracks that could permit moisture to enter equipment. <i>b.</i> Check for dirt and/or other evidence of contamination.	
2	Power, signal cables and mounting cords.	<i>a.</i> Check for security of connectors to mating equipment. <i>b.</i> Check to see that cable insulation is not cut or cracked.	
<b>OPERATION</b>			
3	Dials and switches. . . . .	<i>a.</i> While making operation checks, make sure that dials and switches are free from internal and external binding. <i>b.</i> Check that exclusion plunger moves in and out freely and goes in when headset is returned to cradle.	Fig. 3-1, 3-2 Fig. 3-2
4	Indicator lamps. . . . .	When making operating checks, check for burned out lamps.	Para 3-2

4-3 Organizational Monthly Preventive Maintenance Checks and Services

Sequence No.	Item to be inspected	Procedure	References
<b>INTERIOR</b>			
1	Logic box. . . . .	<i>a.</i> Check to see that interior is free of dust or other contaminants. <i>b.</i> Relays - Verify that relay covers are secure and that relays are securely mounted in their respective sockets.	Fig. 4-3
2	Cables and wiring . . . . .	<i>a.</i> Tighten loose screw terminal connections. Check that cable plugs are securely mounted. <i>b.</i> Check that cable insulation is not cut, cracked, or burned; remove kinks and strains.	Fig. 4-4



## Section II. Maintenance

### 4-4 Operator's Maintenance

#### *a. Cleaning.*

##### **WARNING**

Trichloroethane is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.

(1) Use a dry, clean, lint-free cloth or brush to remove dust or dirt. If necessary moisten the cloth or brush with cleaning compound (Federal stock No. 7930-395-9542). After cleaning, wipe dry with a clean cloth.

##### **WARNING**

Compressed air is dangerous and can cause serious bodily harm. It can also cause mechanical damage to the equipment. Do not use compressed air to dry parts where cleaning compound has been used.

(2) Dry compressed air, not to exceed 60 pounds per square inch, may be used to remove dirt and dust from inaccessible places.

(3) If any of the pushbutton keys bind, any accumulated dirt or other foreign matter should be removed and the parts and surfaces wiped, clean with a damp cloth. DO NOT use lubricants or solvents. The plungers should move freely throughout their entire travel, and should return to normal from the operated position with a snap.

*b. Adjusting Ringer Volume* (fig. 3-1). Operate the ringer volume adjusting lever to the left to decrease the ringer volume, or to the right to increase the volume.

##### **NOTE**

Adjustment of the ringer volume lever has no effect on the sound volume produced by the buzzer.

### 4-5 Organizational Maintenance

#### *a. Lamp Replacement Call Commander* (fig. 4-1).

(1) Remove the clear plastic face plates and face mat from the telephone housing by lifting the top part of the face mat away from the housing.

(2) Remove the light shield from the key strip unit in which the lamp is to be replaced.

(3) Using a thin-bladed screwdriver, turn the lamp until the flat portion (clip-side) of the wedge-shaped lamp base is facing up. Then, work the blade of the screwdriver under the lamp base and pry the lamp out of the clips.

(4) After the lamp pops up it can be removed by gently prying it up with a screwdriver blade.

(5) Press a new lamp (10ESB) in place in the clip with metal sides of lamp against the clip, pressing it firmly into place.

##### **CAUTION**

Press only on glass portion of the lamp, not the base, or the lamp may break.

(6) Replace the light shield, face mat, and faceplates.

#### *b. Lamp Replacement - Extension Phone.*

(1) Insert screwdriver between the faceplate and back of the housing.

(2) Turn the screwdriver blade until the faceplate top is clear of the housing and lift the top of the faceplate and remove it.

(3) Replace the defective lamp as described in *a(3)* through (6) above.

#### *c. Handset Caps and Capsule Replacement.*

(1) Hold the handset so the caps are facing up.

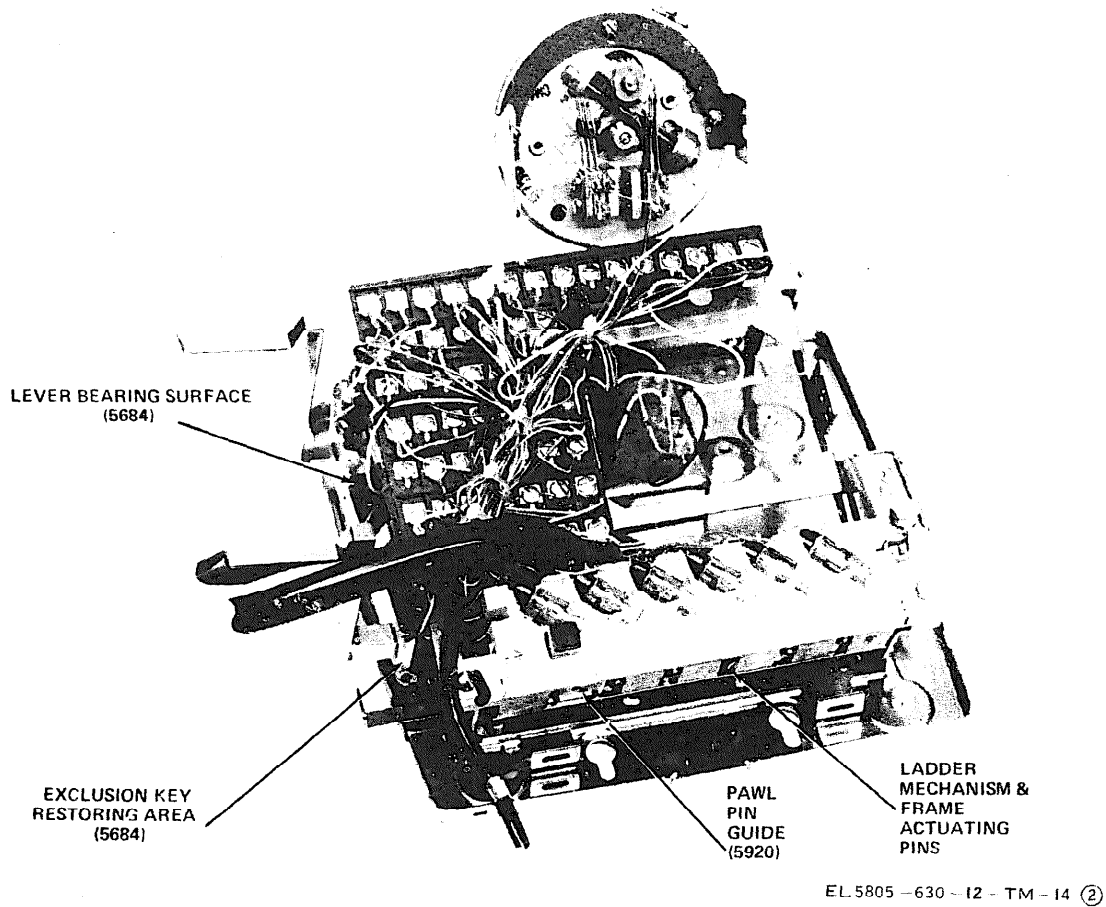


Figure 4-2 2. Lubrication diagram (sheet 2 of 2).

#### 4-7 Troubleshooting Chart

Item	Symptom	Probable cause	Rem & y
i	No audible reception or transmission when making or receiving call.	Defective microphone or receiver capsule in handset.	Replace microphone or receiver capsule (para 4-5c).
2	Telephone inclusion feature not operable.	Defective inclusion matrix CD-134-	Replace inclusion matrix (fig. 4-4).
3	Telephone exclusion feature not operable.	Defective exclusion matrix CD-134-4.	Replace exclusion matrix (fig. 4-4).
4	Intercom operation cannot be achieved between extension phones.	Defective intercom mixer CD-134-6A. Defective line mixer CD-134-5A.	Replace intercom mixer (fig. 4-4). Replace line mixer (fig. 4-4).
5	Call commander ringer or PLAIN and ALARM indicators inoperative.	Defective relay board CD-134-7.	Replace relay board (fig. 4-4).

Item	Symptom	Possible cause	Remedy
6	Call commander hold function inoperative when HOLD button is depressed.	d Hold relay in logic box defective.	a. Replace hold relay K4 (fig. 4-3).
		b Inclusion matrix CD-134-2 defective.	b. Replace inclusion matrix (fig. 4-4).
7	Extension phone hold function inoperative when HOLD button is depressed.	Associated hold relay in logic box defective.	Replace associated hold relay (fig. 4-3): 1 . . . . . K8 2 . . . . . K13 3 . . . . . K17 4 . . . . . K21 5 . . . . . K25 6 . . . . . K29
8	Extension phone intercom function inoperative when INTERCOM button is depressed.	Associated intercom relay in logic box defective.	Replace associated intercom relay (fig. 4-3): 1 . . . . . K7 2 . . . . . K12 3 . . . . . K16 4 . . . . . K20 5 . . . . . K24 6 . . . . . K28
9	Call commander intercom function inoperative when INTERCOM button is depressed.	Intercom relay in logic box defective.	Replace intercom relay K3 (fig. 4-3).
10	Call commander fails to light LINE lamps on extension phones when LINE button is depressed.	Line relay in logic box defective.	Replace line relay K2 (fig. 4-3).
11	Extension phone LINE button when depressed fails to light LINE lamp on call commander and extension phones.	Associated line relay in logic box defective.	Replace associated line relay (fig. 4-3): 1 . . . . . K6 2 . . . . . K11 3 . . . . . K15 4 . . . . . K19 5 . . . . . K23 6 . . . . . K27
12	Delay and ON hook relays in KY-3 unit inoperative.	Associated hook relay in logic box defective.	Replace associated hook relay (fig. 4-3).  Call commander . . . K1 1 . . . . . K5 2 . . . . . K10 3 : : : : : K14 4 . . . . . K18 5 . . . . . K22 6 : : : : : K26
13	PLAIN and ALARM lamps will not light with buttons depressed on all extensions and call commander.	Defective logic box.	Replace logic box.
14	PLAIN OR ALARM lamps do not light on one extension with button depressed.	Defective lamp	Replace lamp
		Defective phone	Replace phone

APPENDIX B  
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1 General

This appendix provides a summary of the maintenance operations covered in the equipment literature. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2 Maintenance Functions

Maintenance functions will be limited to and defined as follows:

- a. **Inspect.** To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.
- b. **Test.** To verify serviceability and to detect incipient failure of measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.
- c. **Service.** Operations required periodically to keep an item in proper operating condition i.e., to clean, preserve, drain, paint, or to replenish fuel/lubricants/hydraulic fluids or compressed air supplies.
- d. **Adjust.** Maintain within prescribed limits by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.
- e. **Align.** To adjust specified variable elements of an item to about optimum or desired performance.
- f. **Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipment used for precision measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
- g. **Install.** The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment/system.
- h. **Replace.** The act of substituting a

serviceable like-type part, subassembly, module (component or assembly) in a manner to allow the proper functioning of an equipment/system.

i. **Repair.** The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module/component/assembly, end item or system.

j. **Overhaul.** That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (e.g., DMWR) in pertinent technical manuals. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

k. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipment/components.

l. **Symbols.** The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

B-3 Explanation of Format

a. **Group Number.** Column 1 lists group numbers, the purpose of which is to match components, assemblies, subassemblies and modules with the next higher assembly.

6. **Functional Group.** Column 2 lists the next higher assembly group and the item names of components, assemblies, subassemblies and modules within the group for which maintenance is authorized.

c. **Maintenance Functions.** Column 3 lists

the twelve maintenance functions defined in B-Z above. Each maintenance function required for an item is specified by the symbol among those listed in d below which indicates the level responsible for the required maintenance. Under this symbol is listed an appropriate work measurement time value determined as indicated in e below.

**d. Use of Symbols.** The following symbols are used to prescribe work function responsibility:

- c . . . . . Operator/Crew
- o. . . . . Organization
- F . . . . . Direct Support
- H . . . . . General Support
- D . . . . . Depot

**e. Work Measurement Time.** The active repair time required to perform the maintenance function is included directly below the symbol identifying the category of maintenance. The skill levels used to obtain the measurement times approximate those found in typical TOE units. Active repair time is the average aggregate time required to restore an item (subassembly, assembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, fault isolation/diagnostic time, and QA/QC time in addition

to the time required to perform specific maintenance functions identified for the tasks authorized in the maintenance allocation chart. This time is expressed in man-hours and carried to one decimal place (tenths of hours).

**f. Tools and Test Equipment.** This column is used to specify, by code, those tools and test equipment required to perform the designated function.

**g. Remarks.** Self-explanatory.

B-4 Explanation of Format of Table I and

Test Equipment Requirements

The columns in table I follow:

**a. Tools and Equipment.** The numbers in this column coincide with the numbers used in the tools and equipment column of the maintenance allocation chart. The numbers indicate the applicable tool for the maintenance function.

**b. Maintenance Category.** The codes in this column indicate the maintenance category normally allocated the facility.

**c. Nomenclature.** This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

**d. Federal Stock Number.** This column lists the Federal stock number of the specific tool or test equipment.

**e. Tool Number.** Not used.

## Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) FUNCTIONAL GROUP COMPONENT ASSEMBLY NOMENCLATURE	(3) MAINTENANCE FUNCTIONS										(4) TOOLS AND EQUIPMENT	(5) REMARKS		
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL			REBUILD	
1	CALL DIRECTOR SYSTEM	0 1.0	0 1.0					0 8.0	0 4.0					1 1 thru 11	
1A	CHASSIS MOUNTED PARTS								H 0.5					1,6	
2	INTERCOM MIXER P/N CD-134-6A	0 0.3	0 0.4		0 0.2			0 0.5		D 0.4	D 1.0			1 1 thru 7	
3	RELAY BOARD P/N CD-134-7	0 0.3	0 0.4		0 0.2			0 0.5	0 0.7		D 1.0			1 1,2,8	
4	TELEPHONE PREAMPLIFIER P/N CD-134-8A	0 0.3	0 0.4		0 0.2			0 0.2	0 0.6		D 1.0			1 1 thru 5,9	
5	POWER SUPPLY P/N CD-134-10A	0 0.3	0 0.4		0 0.2			0 0.7	0 0.8		D 1.0			1 1,6	
6	LINE MIXER P/N CD-134-5A	0 0.3	0 0.4		0 0.2			0 0.5	0 0.7		D 1.0			1 1 thru 4,10	
7	INCLUSION MATRIX, EXCLUSION MATRIX P/N CD-134-2, P/N CD-134-4	0 0.3	0 0.4					0 0.3	0 0.6		D 1.0			1 1,2,11	
8	CALL COMMANDER AND EXTENSION PHONES	0 0.3	0 0.4					0 0.5	0 0.8		H 1.0			1 1,6	
8A	LAMPS AND HANDSET ELEMENTS								0 1.0					1	

Change 1 B-3

Change 1 B-3

B-4  
Change 1

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS				
TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
1	O,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-064-5178	
2	O,D	POWER SUPPLY PP-3940/G	6130-985-8136	
3	O,D	SIGNAL GENERATOR SG-71/FCC	6625-669-0255	
4	O,D	OSCILLOSCOPE AN/USM-117	6625-787-0304	
5	O,D	VOLTMETER, ELECTRONIC ME-30/U	6625-669-0542	
6	O,D	MULTIMETER TS-352B/U	6625-553-0142	
7	O,D	TEST FIXTURE, INTERCOM MIXER		
8	O,D	TEST FIXTURE, RELAY BOARD		
9	O,D	TEST FIXTURE, PREAMPLIFIER		
10	O,D	TEST FIXTURE, LINE MIXER		
11.	O,D	TEST FIXTURE, INCLUSION AND EXCLUSION MATRIX		
NOTE: THE MAINTENANCE FUNCTIONS ALLOCATED UP TO AND INCLUDING GENERAL SUPPORT MAINTENANCE ARE AUTHORIZED TO THE ORGANIZATION USING THE EQUIPMENT.				

B-4 CHANGE 1

SECTION II. REPAIR PARTS LIST

(1) SRR CODE	FEDERAL SUPPLY NUMBER	(3) DESCRIPTION  USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 15-DAY ORGANIZATIONAL MAINTENANCE ALW				(7) ILLUSTRATIONS	
					(a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100	(a) FIG NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
					QRT	5805-758-0575	CALL DIRECTOR SYSTEM CD-134A OR CD-134B			
P--0--	6240-763-9555	LAMP, INCANDESCENT: 10V, 40MA 507-3911 (72619)	EA	1	*	*	*	*	1-4	
P--0--	5920-199-3968	FUSE, CARTRIDGE: 8/10 A, 250V 1402-120 (79915)	EA	1	*	*	*	*	1-5	
P--0--	6240-647-1425	LAMP, INDICATOR: 10V, 0.40W, 0.040A, 28 OHMS 1085B (58054)	EA	24	*	*	*	*	4-1	
P--0--	6210-964-8841	CAP, LENS: Red 38001-0 (58854)	EA	2	*	*	*	*	4-1	
P--0--	6210-126-2546	CAP, LENS: Yellow 38003-0 (58854)	EA	2	*	*	*	*	4-1	



**END**

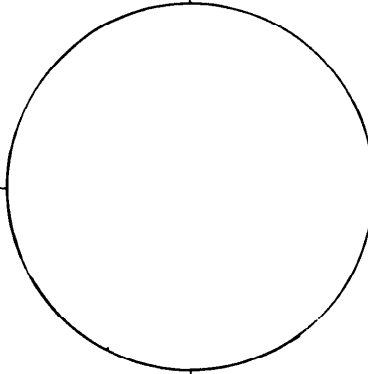
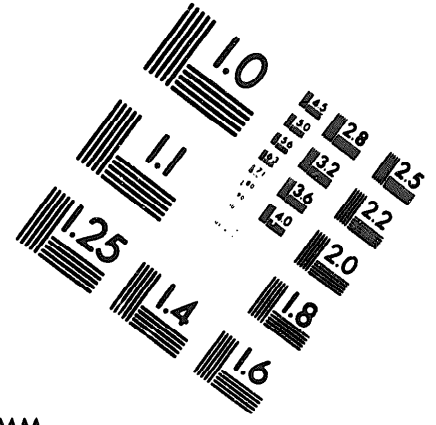
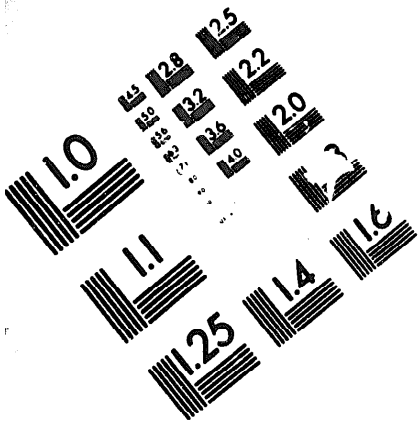
**DATE**

**11-10-82**





MICROFORM TEST TARGET



1.0 mm (e= 0.1 mm)

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1.5 mm (e= 1.09 mm)

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abcdefghijklmnopqrstuvwxyz \$%& / % # 1/2 1/4 3/4 — = + x & @ \*

2.0 mm (e= 1.37 mm)

ABCDEFGHIJKLMN OPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
1234567890 \$%& / % # 1/2 1/4 3/4 — = + x & @ \*

2.5 mm (e= 1.77 mm)

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abcdefghijklmnopqrstuvwxyz  
1234567890 \$%& / % # 1/2 1/4 3/4 — = + x & @ \*

1.0 mm (e= 0.1 mm)

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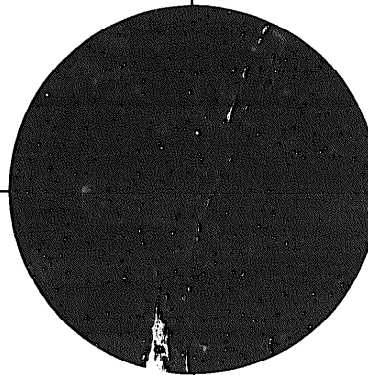
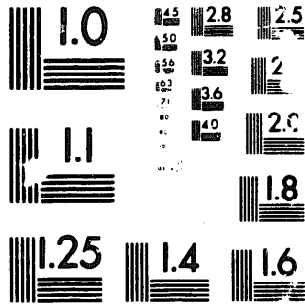
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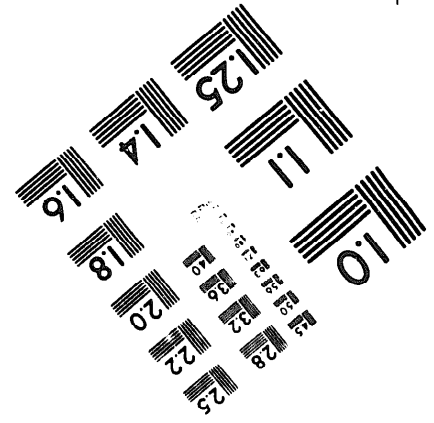
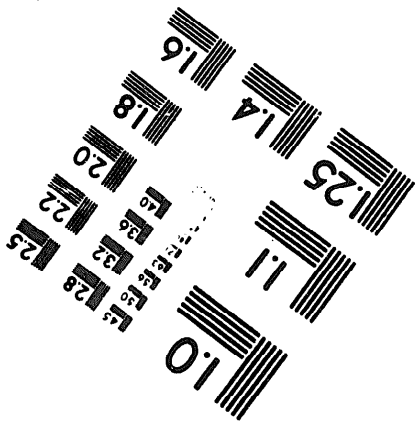
2.5 mm (e= 1.77 mm)

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200 MM

2.00 MM



ARMY	TM 11-5805-630-12
NAVY	NAVELEX 0967-438-0010
AIR FORCE	TO 31W1-4-257-1

**OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL**

**INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS**

**CALL DIRECTOR SYSTEM,  
MODEL 134A**

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**DEPARTMENTS OF THE ARMY, THE NAVY, AND THE AIR FORCE**

**OCTOBER 1972**

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TECHNICAL MANUAL  
 No. 11-5805-630-12  
 TECHNICAL MANUAL  
 NAVELEX 0967-438-0010  
 TECHNICAL ORDER  
 TO 31W1-4-257-1

DEPARTMENTS OF THE ARMY,  
 THE NAVY, AND THE AIR FORCE

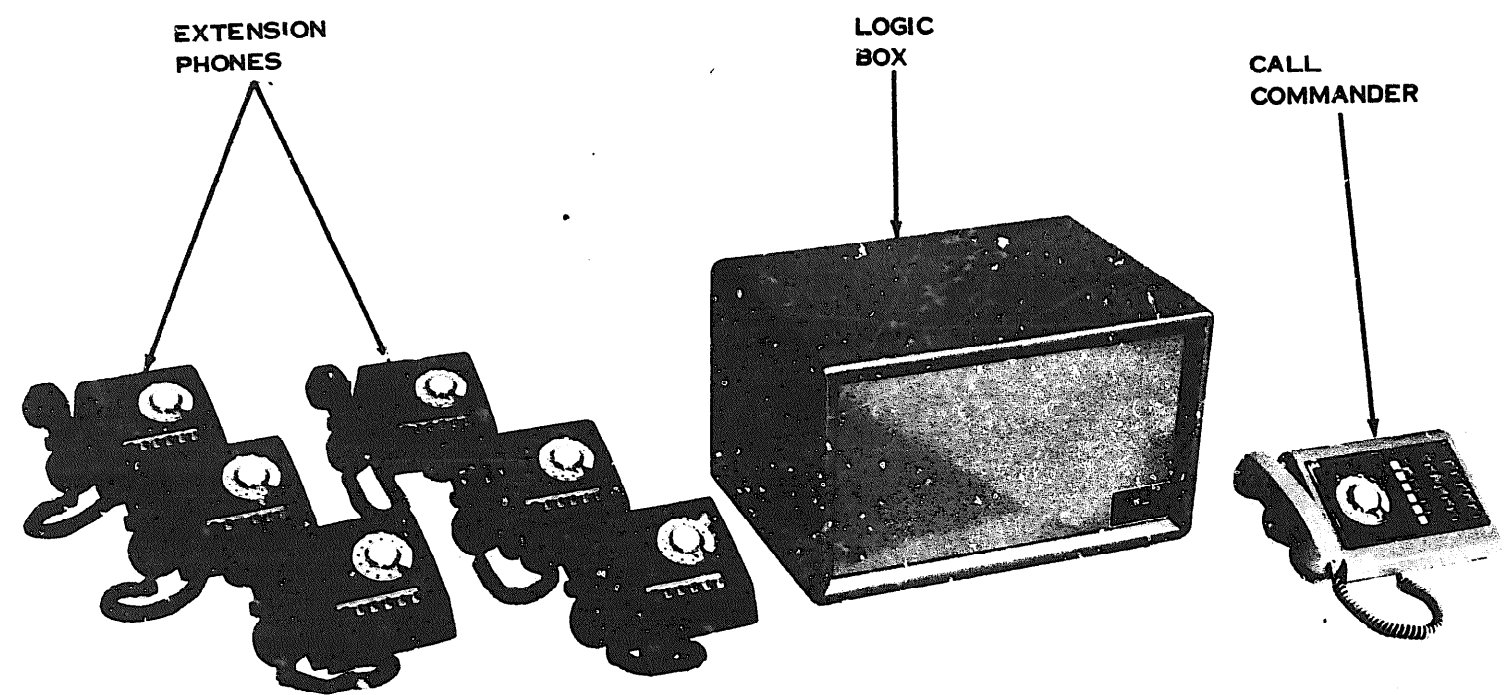
WASHINGTON, D.C., 5 *October* 1972

**Operator's and Organizational Maintenance Manual  
 Including Repair Parts and Special Tools Lists  
 CALL DIRECTOR SYSTEM, MODEL 134A**

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Figure 1-1. Call Director System, Model 134A.



## CHAPTER 1

### INTRODUCTION

#### Section I. GENERAL

##### 1-1. Scope

a. This technical manual contains installation and operator and organizational maintenance for the Call Director System, Model 134A (fig. 1-1).

b. Throughout this manual, where appropriate references are made to other publications which cover direct support and general support maintenance, and depot maintenance work requirements for the equipments as installed in the Model 134A, a complete listing of applicable reference publications is provided in appendix A.

c. The maintenance allocation chart appears in appendix B, and the repair parts and special tools list appears in appendix C.

#### NOTE

Appendix C is current as of 11 August 1972.

##### 1-2. Indexes of Publications

a. *DA Pam 310-4*. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Pam 310-7*. Refer to the latest issue of DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

##### 1-3. Forms and Records

a. *Report of Maintenance and Unsatisfactory Equipment*. Use equipment forms and records in accordance with instructions given in TM 38-'50.

b. *Report of Packaging and Handling Deficiencies*. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army), NAVSUP PUB 378 (Navy), AFR 71-4 (Air Force), and MCO P4030.29 (Marine Corps).

c. *Discrepancy in Shipment Report (DISREP) (SF 361)*. Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 (Army), NAVSUP PUB 459 (Navy), AFM 75-34 (Air Force), and MCO P4610.19 (Marine Corps).

d. *Reporting of Equipment Manual Improvements*. Report of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commanding General, US Army Electronics Command, ATTN: AMSEL-MA-C, Fort Monmouth, NJ 07703.

e. *Administrative Storage*. For procedures, forms and records, and inspections required during administrative storage of this equipment, refer to TM 740-90-1.

##### 1-4. Storage, Destruction of Material to Prevent Enemy Use

a. Refer to TM 740-90-1 for requirements concerning storage of this equipment.

b. Refer to chapter 2, section III of this manual which covers destruction of this equipment to prevent enemy use.

#### Section II. DESCRIPTION AND DATA

##### 1-5. Purpose and Use

a. The Call Director System, Model 134A (fig. -1) is ground communications equipment used with the AUTOSEVOCOM Network. The equip-

ment extends the use of a KY-3 classified unit for a Call Commander Telephone Set, Type 860 (call commander), six Extension Telephone Sets, Type 186 (extension phone), and a Call Director System Logic Set CD-134-43A (logic box).

b. The call commander and extension phones can direct dial through the KY-3 unit, and each extension phone is equipped with an exclusion feature for privacy of communication. One extension phone (No. 1) is equipped with an executive override circuit feature that interrupts any call in progress and permits exclusive use of the system. Also, an intercom network is made available between the call commander phone and the six extension phones.

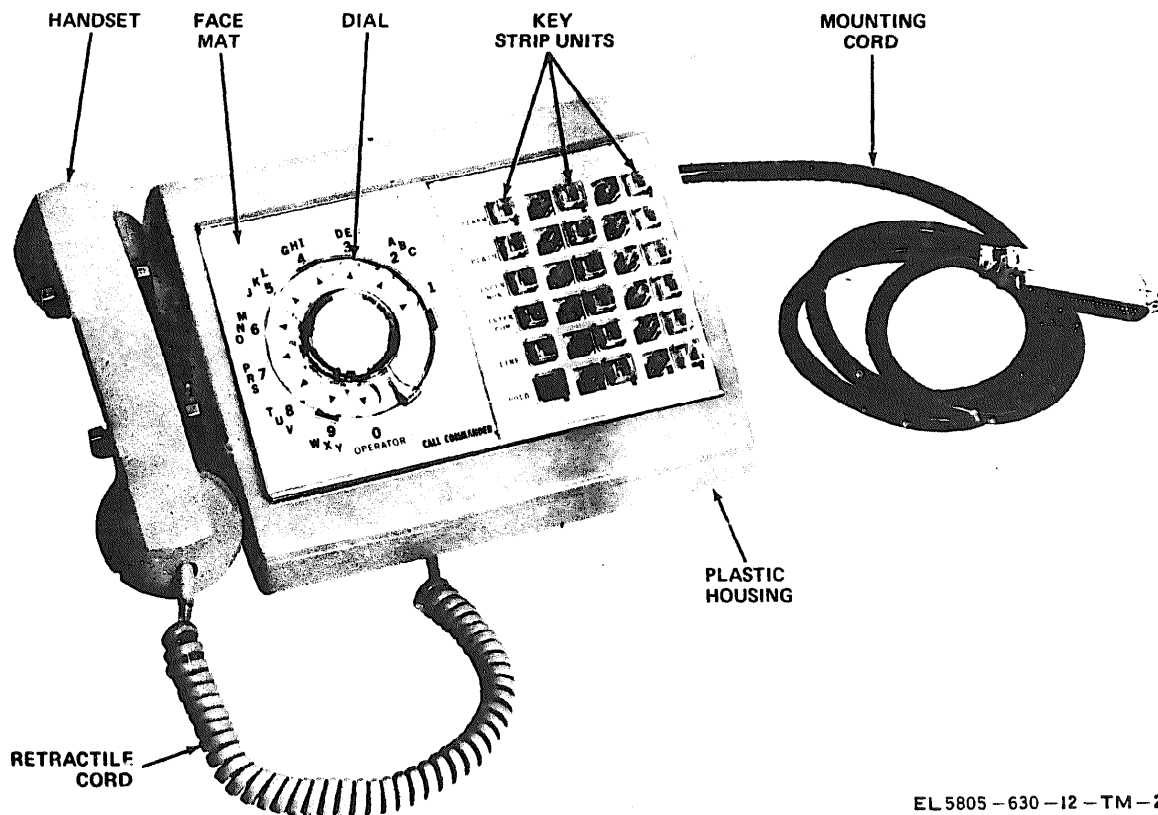
1-6. Description

a. The Call Commander Telephone Set, Type 860 (fig. 1-2) is contained in a plastic housing. A dial with a translucent finger plate is mounted on the left side of the sloping front surface. Illuminated key-strip units with six keys per strip (in vertical rows) are located on the right side. The telephone is furnished equipped with 18 key buttons. The first vertical row of keys (key-strip unit) closest to the dial includes a red plastic

hold key, and five clear plastic line and related functional pickup keys. The second row consists of six clear plastic dummy keys used for indicating purposes only for extension phones in use. The third row of keys are used for signaling the extension phone(s) of incoming calls and for intercom purposes.

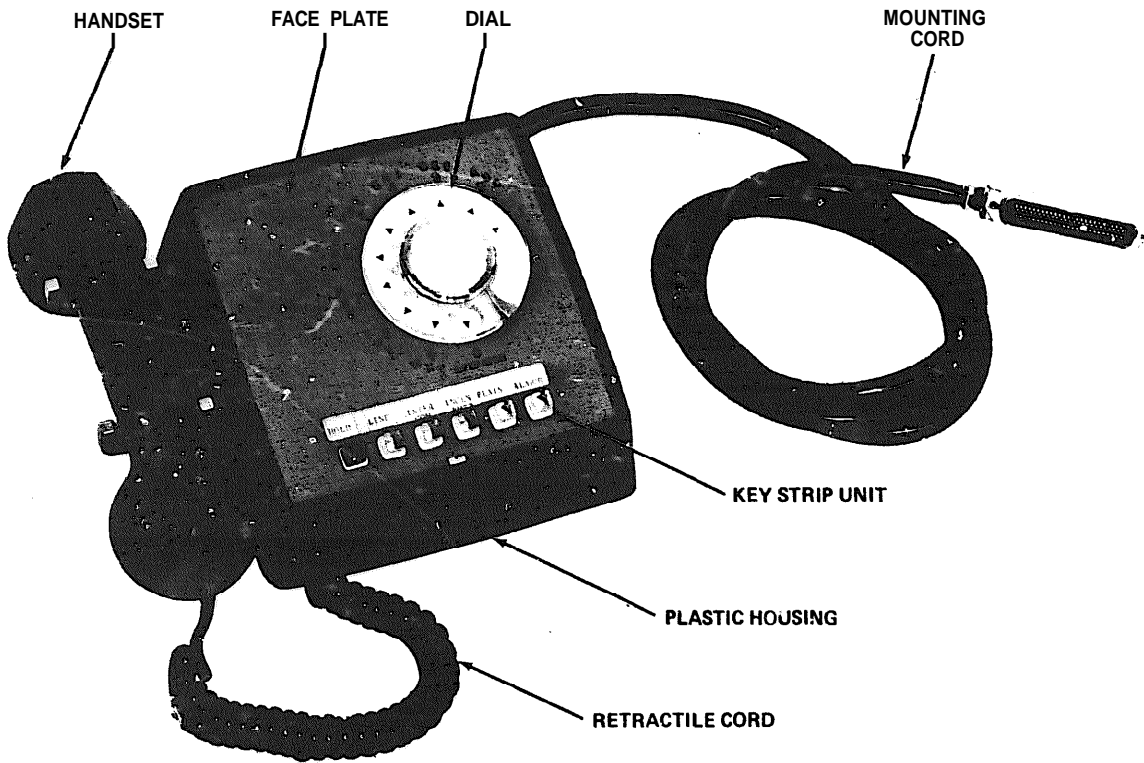
b. The Extension Telephone Set, Type 186 (fig. 1-3) incorporates a standard dial unit and a six key-button strip arranged to initiate, answer, hold calls, and provide for intercommunication between the six extension phones and call commander set. Indicating lamps provide illumination of the key buttons and designation strip.

c. The Call Director System Logic Set CD-134-43A (fig. 1-4) components are contained in a gray steel cabinet with louvered vent slots at the rear of the cabinet (fig. 1-5). The front panel (fig. 1-4) of the cabinet contains a power on/off indicating light. The rear panel (fig. 1-5) incor-



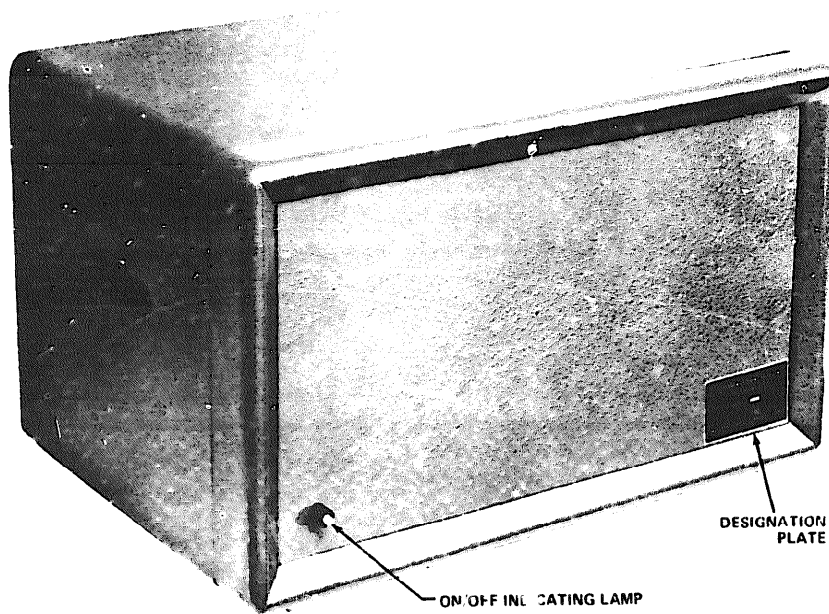
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Figure 1-2. Call Commander Telephone Set, Type 860.



EL 5805-630-12-TM-3

Figure 1-3. Extension Telephone Set, Type 186.



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Figure 1-4. Call Director System Logic Set, CD-134-43A front view.

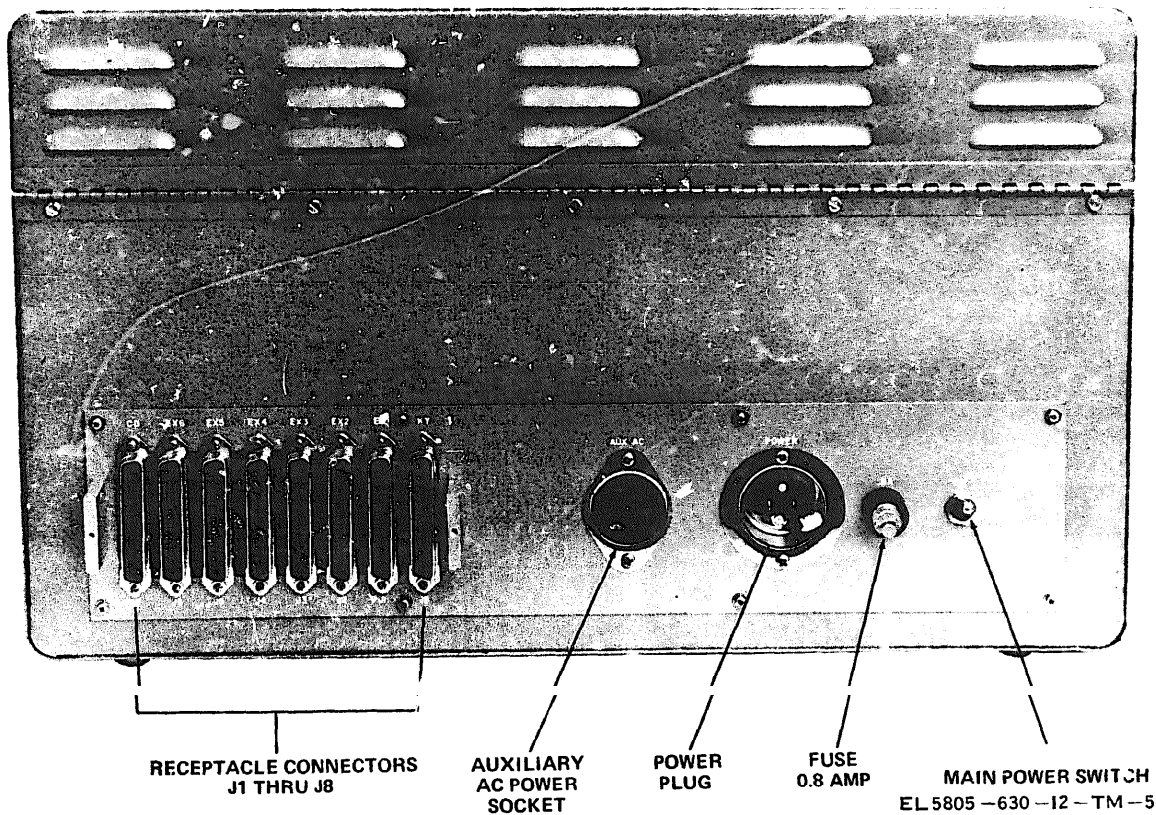


Figure 1-5. Call Director System Logic Set, CD-134-43A, rear view.

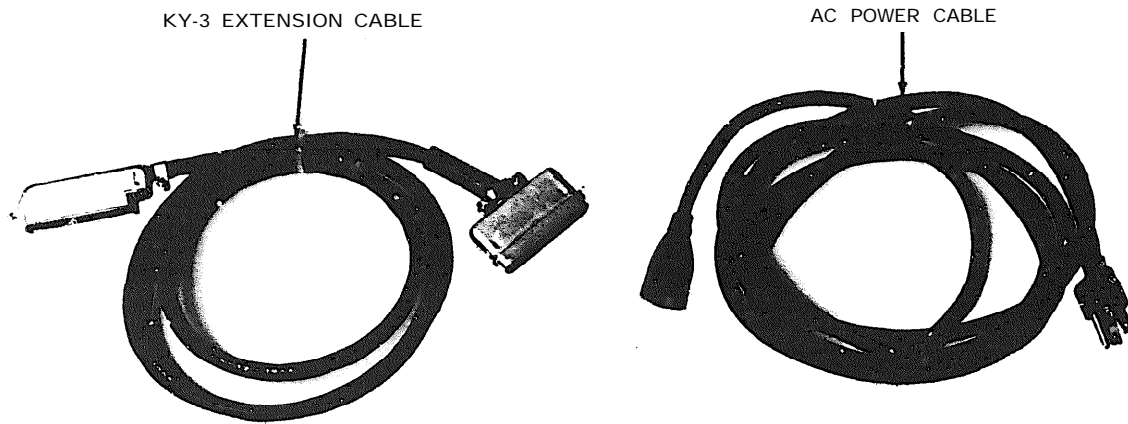
porates eight receptacle connectors (J1 through J8) for cable connections between the call commander phone, extension phones, and KY-3 unit. Also provided is an AC power plug, an AUX ac power socket, a 0.8 A power protection fuse and a MAIN POWER SWITCH. Internal components within the cabinet (fig. 4-3) consist of 29 plug-in type relays mounted on a hinged rack panel that tilts upward for access to rear wiring and internal components. Components on the bottom of the cabinet (fig. 4-4) consist of a Relay Board (CD-134-7), Inclusion Matrix (CD-134-2), Exclusion Matrix (CD-134-4), Intercom Mixer (CD 134-6A), Line Mixer (CD-134-5A), Power Supply (CD-134-10A), Terminal Board (TB-1), and a receptacle panel containing five plug receptacles (P9 through P13).

**d.** Accessory cables supplied (fig. 1-G) consist of one AC power cable for the call director sys-

tem logic set, and one KY-3 extension cable for connection between the KY-3 unit and call director system logic set.

#### 1-7. Technical Characteristics

Input voltage	108-132vac 60Hz
Call Director System Logic Set CD-134-43A Major Assemblies and Components :	
Relay Board	CD-134-7
Intercom Mixer	CD-134-6A
Line Mixer	CD-134-SA
Power Supply	CD-134-10A.
Inclusion Matrix	CD-134-2
Exclusion Matrix	CD-134-4
Relays (29)	Type PE1685D17
Call Commander Telephone Set, Type 860 :	
Handset (Beige)	Type 811
Dial	Type 52
Spring Contacts	Bifurcated



EL5805-630-12 -TM-6

**Figure 1-6. Accessory cables.**

Pulse Cam w/scribe mark (Supplied w/ pawl quieting provision and removable finger stop)	16deg.	Dial Spring Contacts Pulse Cam w/scribe mark (Supplied w/pawl quieting provision and removable finger stop)	Type 52 Bifurcated 16deg
Extension Telephone Set, Type 186: Handset (Black)	Type 811		

**1-8. Items Comprising an Operable Equipment**

FSN	Item	Quantity	Height (in.)	Depth (in.)	Width (in.)	Weight (lb)
	Call Commander Telephone Set, Type 860	1	4 1/4	12 7/8	8 1/2	
	Extension Telephone Set, Type 186	6	4 1/2	8 1/2	10	
	Call Director System Logic Set CD-134-43A.	1	13 3/8	16 1/4	21 1/2	
	AC Power Cable 17460S	1				
	KY-3 Extension Cable CD-134-11A	1				

**NOTE**

Repair parts and special tools that accompany Call Director System, Model 134A are listed in appendix C.

CHAPTER 2  
INSTALLATION

Section I. SERVICE UPON RECEIPT

2-1. Unpacking

*a.* The equipment as shipped has been preserved and adequately packaged in accordance with level C of Military Specification MIL-P-116, with repair parts and accessories packed in accordance with level A of above referenced specification. Interior and exterior shipping containers have been marked and stamped in accordance with Military Standard 129. Packing material consists of cellulosic cushioning material per federal specification PPC-843, fiberboard material per PPB-636 and flexible water vaporproof barrier material per military specification MIL-B-131.

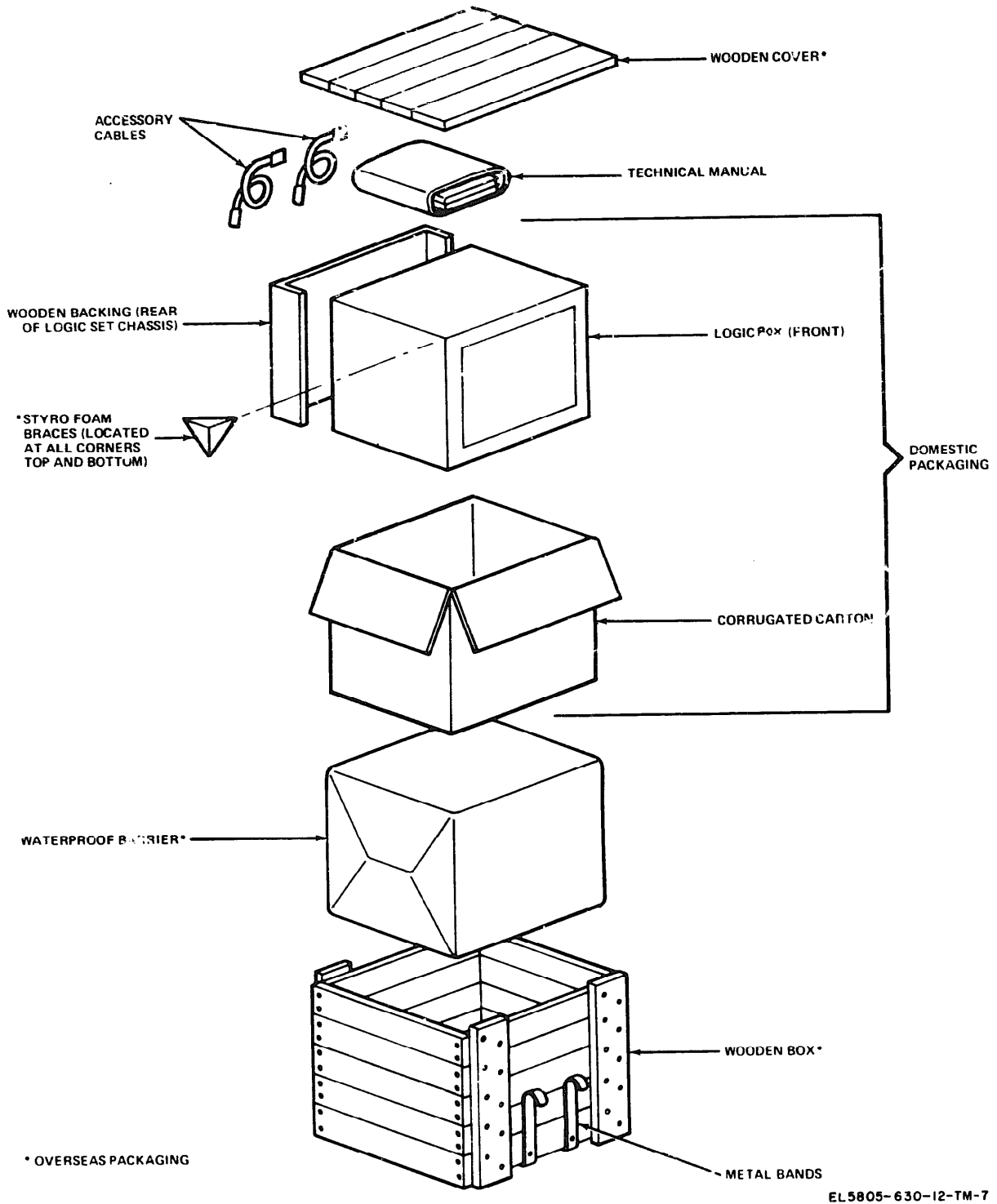
*b.* Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6 (para 1-3*b*).

2-2. Checking

*a.* Check the equipment against the component listing in this manual (para 1-3) and the packing slip to see if the shipment is complete. Report all discrepancies in accordance with paragraph 1-3*c*. The equipment shall be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

*b.* Check to see whether the equipment has been modified (equipment which has been modified will have the MWO number on the front panel, near the nomenclature block). Check also to see whether all currently applicable MWO's have been applied. (Current MWO's applicable to the equipment are listed in DA Pam 310-7 as applicable.)

*c.* For dimensions, weights, and volume of packaged items, see SB 700-20.



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Figure 2-1. Packaging diagram for Call Director System Logic Set CD-134-43A

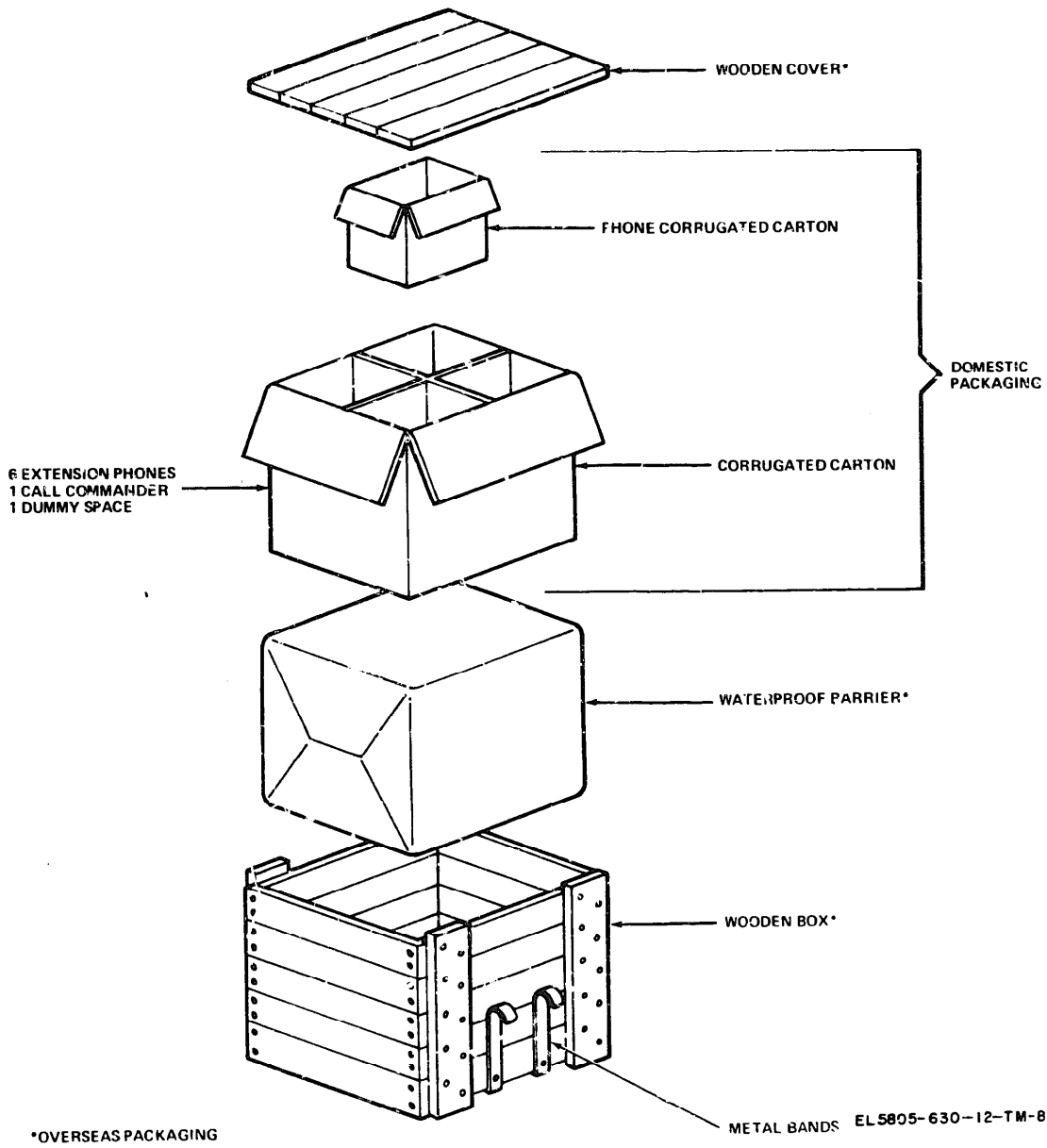


Figure 2-2. Packaging Diagram for Telephone Sets, Type 186 Call Commander Telephone, Type 860 and Spares



Section II System Planning and Installation

2-3 Location and Cabling

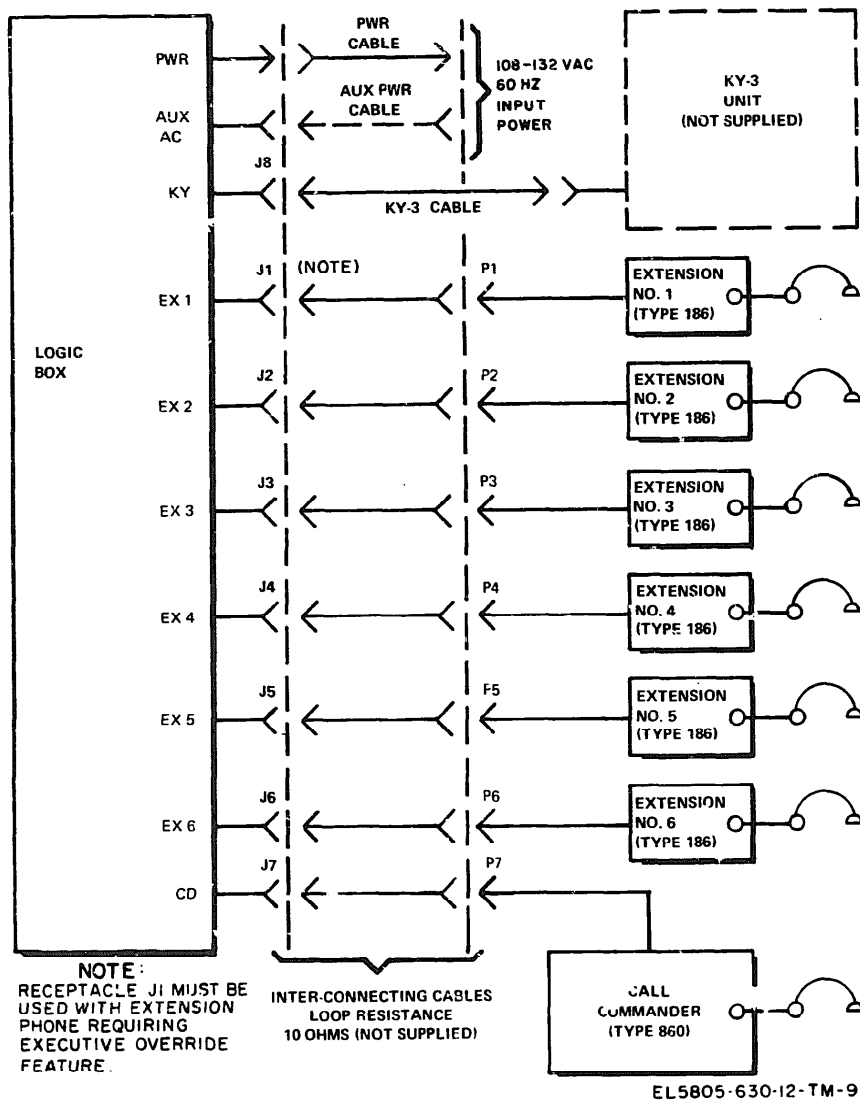
a. In determining the location for installation, be guided by applicable command directives so far as installation requirements and other provisions warrant in location and placement of equipment.

b. After location is determined, run 25 pair connector-type running cables to these points shown in figure 2-3.

NOTE

Connector J1 on the rear of the logic box is the only connector that can provide executive override feature. Determine which extension phone will require this feature and connect its cable to connector J1.

c. Install connector terminated running cable in conduit along wall surfaces or underfloor duct



EL5805-630-12-TM-9

Figure 2-3. Call Director System, Model 134A. cabling diagram.

as required, with its receptacle (female) end at the telephone line cord plug. This will be a 1-to-1 wire extension cable identically mated with the phone line cord with a loop resistance rating of 10 ohms. To protect the junction of the cable receptacle and line cord plug, use the floor-mounted cover assembly provided with the installation duct system if available. Otherwise, install a single connector housing on the baseboard or on the kneewall shield of the desk, if wooden. If the desk is steel, mount the connector housing on a adhesive mounting plate (No. 740 Automatic Electric Co.).

#### 2-4. Checkout Procedure

*a. Call Commander Telephone Set, Type 860.* With all cabling interconnected between the call commander, extension phones, logic box, and KY-3 unit (fig. 2-3), proceed as follows:

(1) Place MAIN POWER SWITCH to ON position located at rear of logic box. Check that yellow on/off indicating light at front of logic box is lighted.

(2) Sequentially depress and release each EXT INTERCOM button on the call commander. Check that the corresponding extension phone buzzes and that its INTERCOM button lights only while button is depressed.

(3) Push INCLN BUZZ button on each extension phone. Check that call commander buzzes as each button is depressed.

(4) Push INTERCOM button on all extensions and call commander. Sequentially remove the handset from cradle at each extension phone and check that INTERCOM light on extension phone is lighted and corresponding EXT INTERCOM light on call commander is lighted. Remove call commander handset from cradle and check that INTERCOM light on call commander lights.

(5) Push LINE buttons on all extension phones and call commander.

(6) Lift handset from cradle on each extension phone. Check that call commander has LINE, PLAIN, INCLN MON, and EXT LINE buttons lighted.

(7) Push ALARM button of KY-3 unit. Check for audible buzz at the call commander and verify that ALARM button is lighted. Check that alarm is canceled out by pushing the ALARM button at call commander.

(8) Push PLAIN button on call commander.

Check that LINE button is lighted and audible ringing sound is heard at call commander.

(9) Push LINE button on call commander with handset off the cradle. Check DIAL INDICATOR on the KY-3 unit to see that the light is on. Rotate dial on the call commander. See that DIAL INDICATOR light flashes at the KY-3 unit as the dial rotates.

(10) Check for sidetone in line.

(11) Push HOLD button and depress cradle (hook switch). See that conditions remain the same when depressing the cradle.

(12) Push the LINE button on call commander to release the hold condition.

(13) Push INTERCOM button on call commander and check for sidetone.

#### *b. Extension Phones.*

(1) With all phone handsets in cradle, check that no lights are lighted on the extension phones or call commander. Verify that the LINE button is pushed in on all extension phones.

(2) Remove handset from cradle on extension phone (under test). Verify the following:

(a) PLAIN and LINE lights should be lighted on extension phone.

(b) LINE, PLAIN, and INCLN BUZZ lights should be lighted on all other extension phones.

(c) LINE, PLAIN, INCLN MON and corresponding EXT LINE should be lighted on call commander.

(d) Check that DIAL INDICATOR light on the KY-3 unit is lighted.

(e) Rotate dial on extension phone to dial the operator. See that the DIAL INDICATOR light on KY-3 unit flashes as dial rotates.

(3) Push the HOLD button on the extension phone. See that the DIAL INDICATOR light on KY-3 unit goes out and that the INCLN BUZZ light is off on each extension phone and INCLN MON light at call commander is off.

(4) Depress and release cradle (hookswitch) on test phone several times. See that conditions remain the same.

(5) Push the LINE button on the extension phone. Push INCLN BUZZ button on extension phone. Check to see that buzzing sound is heard at call commander.

(6) Push the ALARM button on the KY-3 unit. Verify the following:

(a) Buzz sound should be heard at call commander.

(b) The ALARM light on the call commander and all extension phones are lighted.

(c) Disable the buzzer and ALARM lights by pushing the ALARM button on the call commander.

(7) Push the EST INTERCOM button on the call commander corresponding to the extension phone number. Verify the following:

(a) Buzzer sound should be heard at the extension phone.

(b) The INTERCOM light on the extension phone should be lighted (but only while the corresponding EXT INTERCOM button at call commander is depressed).

(8) Pull out the exclusion plunger on the extension phone. See that all EXT lights on the call commander are lighted.

(9) Push in slightly on the exclusion plunger; it should automatically pull in.

(10) Push INTERCOM button on the extension phone. Check that only INTERCOM light on extension phone and the corresponding EXT INTERCOM light on the call commander for the extension phone are lighted. Also, the DIAL IN-

DICATOR light on the KY-3 unit should be extinguished.

(11) Check extension phone for sidetone.

(12) Push LINE button on the extension phone. Check the extension phone for sidetone.

(13) Remove the handset from another extension phone and check for sidetone of the extension phone under test. The sidetone should disappear when the exclusion plunger is pulled out on the other extension phone.

(14) See that sidetone appears again when the other extension phone handset is returned to cradle.

(15) **Pull** out exclusion plunger on the extension phone. Put the handset on the cradle. Check that the exclusion plunger goes in as the handset is returned to cradle.

(16) Perform the procedures in (1) through (1.5) above for each of the other extension phones.

#### NOTE

Upon successful completion of all check-out tests described above, equipment can be considered fully operational.

### Section III. DEMOLITION OF MATERIAL TO PREVENT ENEMY USE

#### 2-5. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 2-6 will be used to prevent further use of the Call Director System, Model 134A.

#### 2-6. Methods of Destruction

Use any or all of the following methods to destroy the Model 134A.

a. **Smash.** Smash the telephone housings and controls, and the control switches, relays, capa-

citators, printed circuit boards, and connectors of the call director system logic set.

b. **Cut.** Cut all cables and cords and slash the wiring on the components.

#### WARNING

Be extremely careful when handling explosives and incendiary devices. Use these items only when the need is urgent.

c. **Burn.** Burn cords and technical manuals.

d. **Explode.** Use explosives if necessary.

e. **Dispose.** Bury or scatter the destroyed parts in slit trenches or foxholes, or throw them into streams or lakes.

CHAPTER 3  
OPERATING INSTRUCTIONS

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**3-1. Controls and Indicators**

The controls and indicators for the Call Director System, Model 134A are listed in a through c below.

A. Call Commander (fig. 3-1) .

Control or indicator	Description	Function
ALARM pushbutton switch	Two-position, momentary	Illuminates (red) and rings buzzer when KY-3 generates alarm signal. When depressed the alarm signal is canceled out.
PLAIN pushbutton switch	Two-position, momentary	ON-position energizes ringing bell for local ringing.
INCLN MON lamp	10ESB	Indicates that more than one extension phone is on line.
INTERCOM pushbutton switch	Two-position, latching	ON-position permits use of intercom for buzzing proper extension phone.
LINE pushbutton switch	Two-position, latching	ON-position permits selection of outside line when making or answering call.
HOLD pushbutton switch	Two-position, momentary	ON-position holds incoming line call until proper called party is selected.
EXT #1 LINE lamp	10ESB	Illuminates when EXT #1 is on line.
EXT #2 LINE lamp	10ESB	Illuminates when EXT #2 is on line.
EXT #3 LINE lamp	1 0 E S B	Illuminates when EXT #3 is on line.
EXT #4 LINE lamp	10ESB	Illuminates when EXT #4 is on line.
EXT #S LINE lamp	10ESB	Illuminates when EXT #5 is on line.
EXT #6 LINE lamp	10ESB	Illuminates when EXT #6 is on line.
EXT #1 INTERCOM pushbutton switch.	Two-position, momentary	ON-position buzzes EXT #1 for incoming call.
EXT #2 INTERCOM pushbutton switch.	Two-position, momentary	ON-position buzzes EXT #2 for incoming call.
EXT #3 INTERCOM pushbutton switch.	Two-position, momentary	CN-position buzzes EXT #3 for incoming call.
EXT #4 INTERCOM pushbutton switch.	Two-position, momentary	ON-position buzzes EXT #4 for incoming call.
EXT #5 INTERCOM pushbutton switch.	Two-position, momentary	ON-position buzzes EXT #5 for incoming call.
EXT #6 INTERCOM pushbutton switch.	Two-position, momentary	ON-position buzzes EXT #6 for incoming call.
EXT #1 INTERCOM lamp	10ESB	Illuminates when EXT #1 is on INTERCOM.
EXT #2 INTERCOM lamp	10ESB	Illuminates when EXT #2 is on INTERCOM.
EXT #3 INTERCOM lamp	10ESB	Illuminates when EXT #3 is on INTERCOM.
EXT #4 INTERCOM lamp	10ESB	Illuminates when EXT #4 is on INTERCOM.
EXT #S INTERCOM lamp	10ESB	Illuminates when EXT #5 is on INTERCOM.
EXT #6 INTERCOM lamp	10ESB	Illuminates when EXT #6 is on INTERCOM.
Ringer volume adjusting lever		Permits audible sound adjustment of ringer volume.

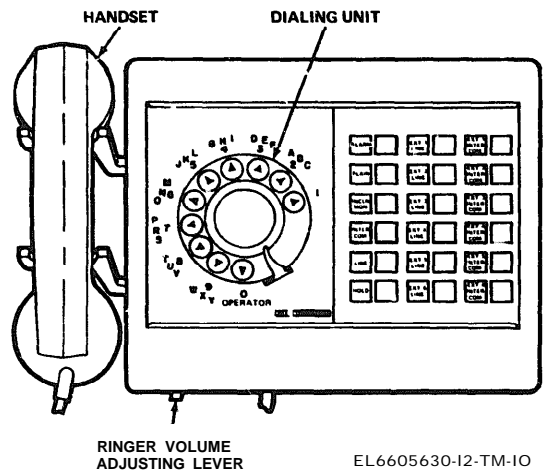


Figure 3-1. Call Commander Telephone Set, Type 860, controls.

b. Extension Phone (fig. 3-2)

Control or indicator	Description	Function
HOLD pushbutton indicator	Two-position, momentary	ON-position hold incoming line call until particular calling party is selected.
LINE pushbutton switch	Two-position, latching	ON-position permits selection of outside line when making or answering call.
INTERCOM pushbutton switch	Two-position, latching	ON-position permits call commander operator to be buzzed and notified of required extension party (used in conjunction with INCLN BUZZ pushbutton).
INCLN BUZZ pushbutton switch	Two-position, momentary	ON-position energizes buzzer circuit of call commander.
SLAIN lamp	IOESB	Illuminates when local ring call is received at call commander.
ALARM lamp	IOESB	Illuminates when alarm signal is generated by KY-3 unit.
INCLN BUZZ lamp	IOESB	Illuminates when more than one extension phone is on line.
Exclusion Plunger switch	Two-position	ON-position invokes privacy feature which excludes other extension phones from the line. When invoked at an extension phone all incoming, calls will terminate at this extension and prevent other extension phones from intruding.

c. Logic Box (fig. 3-3)

Control or indicator	Description	Function
MAIN POWER SWITCH	Two-position	Applies AC power to set.
.8A indicating fuse	313-800, 8/10A, 250V	Illuminates when input power protection fuse is blown.
On/off indicating lamp on front panel of set.	lamp (located on front of set). 507-3911, 10V, 40MA	Illuminate= (yellow) when set is ON.

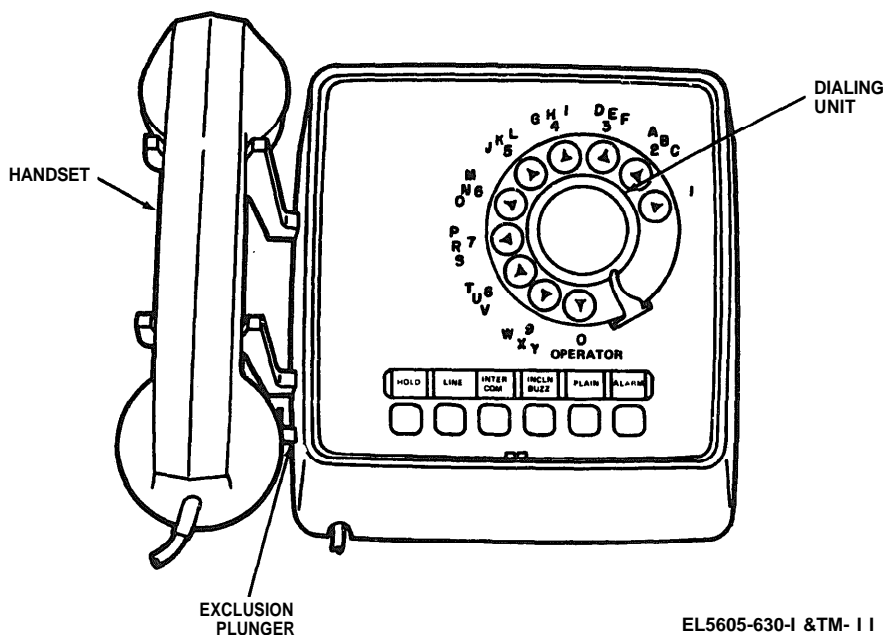


Figure 3-2. Extension Telephone Set, Type 186, controls.

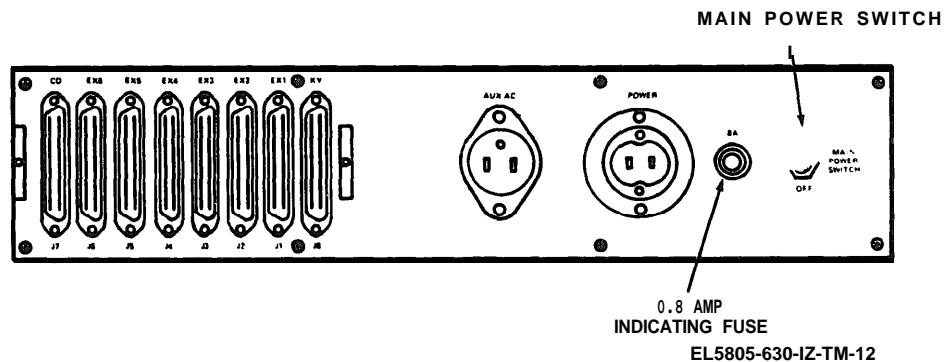


Figure 3-3. Call Director System Logic Set CD-134-43A, controls and connectors.

### 3-2. Operating procedure

#### a. Placing Out side Call From Call Commander.

(1) Check to insure that LINE is not in use (LINE button extinguished). Push in LINE button and pick up handset from its cradle. When button lights and dial tone is heard, line is ready to use. Proceed to dial the call,

*NOTE*

On the six extension phones, the LINE and INCLN BUZZ lamps will be lighted.

(2) When the called party answers, circuit is complete.

**NOTE**

If during the conversation on extension phone is lifted from the cradle, the call commander INCLN MON lamp of the call commander will light.

(3) When call is completed, return handset to the cradle; circuit is now disconnected.

#### 6. Incoming Call to Call Commander.

(1) When the LINE button **flashes and the** ringing tone is heard, an incoming call is **indi-** cated. Push in LINE button, lift handset from cradle and answer.

(2) When operator determines the particu- lar extension the calling party wishes, the HOLD button is depressed to hold the line. The operator pushes in the INTERCOM button, then depresses the correct EXT INTERCOM button to “**buzz**” the proper extension.

(3) The extension party answers by pushing in the INTERCOM button; is notified of the in- coming call and then pushes in the LINE button to talk with calling party. The call commander operator then returns handset to cradle.

**c. Intercom At Call Commander.**

(1) The call commander operator can call one or any number of the six extension phones by lifting handset, pushing in the INTERCOM button and then depressing the appropriate EXT INTERCOM button to “buzz” the desired exten- sion.

**NOTE**

When operator buzzes an extension with audible signal, the INTERCOM lamp at the extension phone will light.

(2) The extension party depresses the IN- TERCOM button and lifts the handset. When answered, the EXT INTERCOM lamp associated with the extension phone lights and circuit is complete.

**d. Hold At The Call Commander.**

**NOTE**

**Hold** is a feature for keeping a circuit from dropping when a call is transferred from the call commander to an exten- sion phone or from one extension phone to another.

(1) Upon receiving incoming call for trans- fer to an extension phone, call commander op- erator depresses red HOLD button, then notifies extension phone party of call as indicated in c above.

(2) The extension phone party then com- pletes the line by depressing the extension phone **LINE button, which** releases the call commander.

**e. Outside Call From Extension Telephone.** Push in unlighted **LINE button** and pick up hand- set from cradle. When button lights and dial tone

is heard, line is ready to use. Proceed to dial the call.

**NOTE**

This action energizes the KY-3 whereby the LINE lamps and INCLN BUZZ lamps light on other extension phones and the LINE lamp lights on call com- mander. The INCLN BUZZ lamp on the calling extension phone does not light when call is made, unless another exten- sion intrudes on the line.

**f. Incoming Call and Hold At Extension Phone.**

**NOTE**

Incoming calls are normally answered at the call commander. The following proce- dure is used when a call commander operator is not on duty.

1) An incoming call into the Call Director System will ring a bell in the call commander and the LINE lamps of the commander and the six extension phones light.

(2) The call may be answered at an ex- tension phone by depressing the LINE button and lifting the handset from cradle.

(3) Depress red hold button on the exten- sion phone which prevents dropping the call from the line and holds it until the call is transferred to another extension on to the call commander.

**NOTE**

When the call is placed in a hold status, the individual at the answering exten- sion phone must physically notify the called party at the required extension phone of the call. Release of hold at the answering extension phone will occur when the handset is replaced and the other extension phone completes the call.

**g. Intercom At an Extension Phone.** Push in **the INTERCOM button** and lift handset from cradle. Depress INCLN BUZZ button to audibly contact the call commander operator. -

**NOTE**

Intercom phones can only “buzz” the call commander operator who in turn will “buzz” an extension or all exten- sions to allow communication between two or more extension parties.

**h. Exclusion Operation Feature.**

**NOTE**

Exclusion is a privacy feature and is activated by pulling a lever out at the bottom of the extension telephone. When this exclusion is invoked, the five other extension phones and the call commander are excluded from the call and cannot speak into or hear the conversation in progress.

(1) When a call is in progress, the LINE lamp and the INCLN BUZZ lamps are lighted on all extension phones except for the extension phone in use which only has the LINE lamp lighted. The INCL MON lamp on the call commander will also be lighted.

(2) If another extension enters the line, then the INCLN BUZZ light on the extension in use will light, indicating that another extension is on the line.

(3) Pulling out the lever at the bottom of the phone at this time will exclude the extension that invaded the line and the INCLN BUZZ lamp at the extension phone on the line will extinguish.

(4) Return of the handset to its cradle will automatically return the exclusion plunger to OFF position.

**i. Executive Override Operation Feature.** One extension phone number is provided with an over-

ride circuit feature. Operation of the exclusion feature described in h above on this extension will terminate any incoming call at this extension and will not allow another extension to intrude on the line.

3-3 Operating Under Unusual Conditions

The Model 134A is designed for normal operation within environments that provide for complete protection from the elements for personnel and equipment; however under extreme conditions, the following precautions are necessary.

**a. Hot Climates.** In hot, dry climates, connectors and receptacles and moving parts of telephones are subject to damage from dust and dirt. Take precautions to keep connectors clean. Avoid placing an open connector on the ground. Provide lubrication more frequently (quarterly).

**b. Warm, Damp Climates.** In warm, damp climates, the equipment is subject to damage from moisture and fungi. Wipe all moisture and fungi from the equipment with a lint-free cloth.

**c. Cold Climates.** Extreme cold causes cables and wires to become hard, brittle, and difficult to handle. Be careful when handling the cables and connecting them so that kinks and unnecessary loops will not result in permanent damage.



CHAPTER 4  
MAINTENANCE INSTRUCTIONS

Section I. PREVENTIVE MAINTENANCE

a. To insure that the Call Director System, Model 134A is always ready for operation, it must be inspected systematically so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in the following table. The item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the unit will be noted for future correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noted during operation which would damage the equipment. Report all

deficiencies together with the corrective action taken in accordance with instructions provided in TM 38-750.

**NOTE**

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation ; make the complete checks and services during an authorized downtime.

b. Repair parts, tools, test equipment, and accessories issued with or authorized for use by the operator for the call director system are listed in appendixes B and C of this manual.

4-2 Operator's Weekly Preventive Maintenance Checks and Services

<i>Item to be inspected</i>	<i>Procedure</i>	<i>Ref/Tenecr</i>
<b>EXTERIOR</b>		
1 External condition	a. Check for housing punctures or cracks that could permit moisture to enter equipment. b. Check for dirt and/or other evidence of contamination.	
2 Power, <i>signal</i> cables and mounting cords	a. Check for security of connectors to mating equipment. b. Check to see that cable insulation is not cut or cracked.	
<b>OPERATION</b>		
3 Dials and switches _ _	a. While making operation checks, make sure that dials and switches are free from internal and external binding. b. Check that exclusion plunger moves in and out freely and goes in when headset is returned to cradle.	Fig. 3-1, 3-2 Fig. 3-2
4 Indicator lamps	When making operating checks, check for burned out lamps.	Para 3-2

4-3 Organizational Monthly Preventive Maintenance Checks and Services

<i>Sequence No.</i>	<i>Item to be inspected</i>	<i>Procedure</i>	<i>Ref/amwsr</i>
<b>INTERIOR</b>			
1	<b>Logic box</b> . . . . .	a. Check to see that interior is free of dust or other contaminants.	

<i>Sequence No.</i>	<i>Item to be inspected</i>	<i>Procedure</i>	<i>References</i>
		<i>b. Relays-Verify that relay covers are secure and that relays are securely mounted in their respective sockets.</i>	Fig. 4-2
2	Cables and wiring	<i>a. Tighten loose screw terminal connections. Check that cable plugs are securely mounted.</i> <i>b. Check that cable insulation is not cut, cracked, or burned ; remove kinks and strains.</i>	Fig. 4-3

**Section II. Maintenance**

4-4 Operator's Maintenance

*a. Cleaning.*

**WARNING**

Trichloroethane is flammable and its fumes are toxic. Do not use near a flame ; provide adequate ventilation.

(1) Use a dry, clean, lint-free cloth or brush to remove dust or dirt. If necessary moisten the cloth or brush with cleaning compound (Federal stock No. 7930-395-9542). After cleaning, wipe dry with a clean cloth.

**WARNING**

Compressed air is dangerous and can cause serious bodily harm. It can also cause mechanical damage to the equipment. Do not use compressed air to dry parts where cleaning compound has been used.

(2) Dry compressed air, not to exceed 60 pounds per square inch, may be used to remove dirt and dust from inaccessible places.

(3) If any of the pushbutton keys bind, any accumulated dirt or other foreign matter should be removed and the parts and surfaces wiped clean with a damp cloth. DO NOT use lubricants or solvents. The plungers should move freely throughout their entire travel, and should return to normal from the operated position with a snap.

*b. Adjusting Ringer Volume (fig. 3-1).* Operate the ringer volume adjusting lever to the left to decrease the ringer volume, or to the right to increase the volume.

**NOTE**

Adjustment of the ringer volume lever has no effect on the sound volume produced by the buzzer.

4-5 Organizational Maintenance

*a. Lamp Replacement Call Commander (fig. 4-1).*

(1) Remove the clear plastic face plates and face mat from the telephone housing by lifting the top part of the face mat away from the housing.

(2) Remove the light shield from the key strip unit in which the lamp is to be replaced.

(3) Using a thin-bladed screwdriver, turn the lamp until the flat portion (clipside) of the wedge-shaped lamp base is facing up. Then, work the blade of the screwdriver under the lamp base and pry the lamp out of the clips.

(4) After the lamp pops up it can be removed by gently prying it up with a screwdriver blade.

(5) Press a new lamp (10ESB) in place in the clip with metal sides of lamp against the clip, pressing it firmly into place.

**C a u t i o n**

Press only on glass portion of the lamp, not the base, or the lamp may break.

(6) Replace the light shield, face mat, and faceplates.

*b. Lamp Replacement-Extension Phone.*

(1) Insert screwdriver between the faceplate and back of the housing.

(2) Turn the screwdriver blade until the faceplate top is clear of the housing and lift the top of the faceplate and remove it.

(3) Replace the defective lamp as described in u(3) through (6) above.

*c. Handset Caps and Capsule Replacement.*

(1) Hold the handset so the caps are facing up.

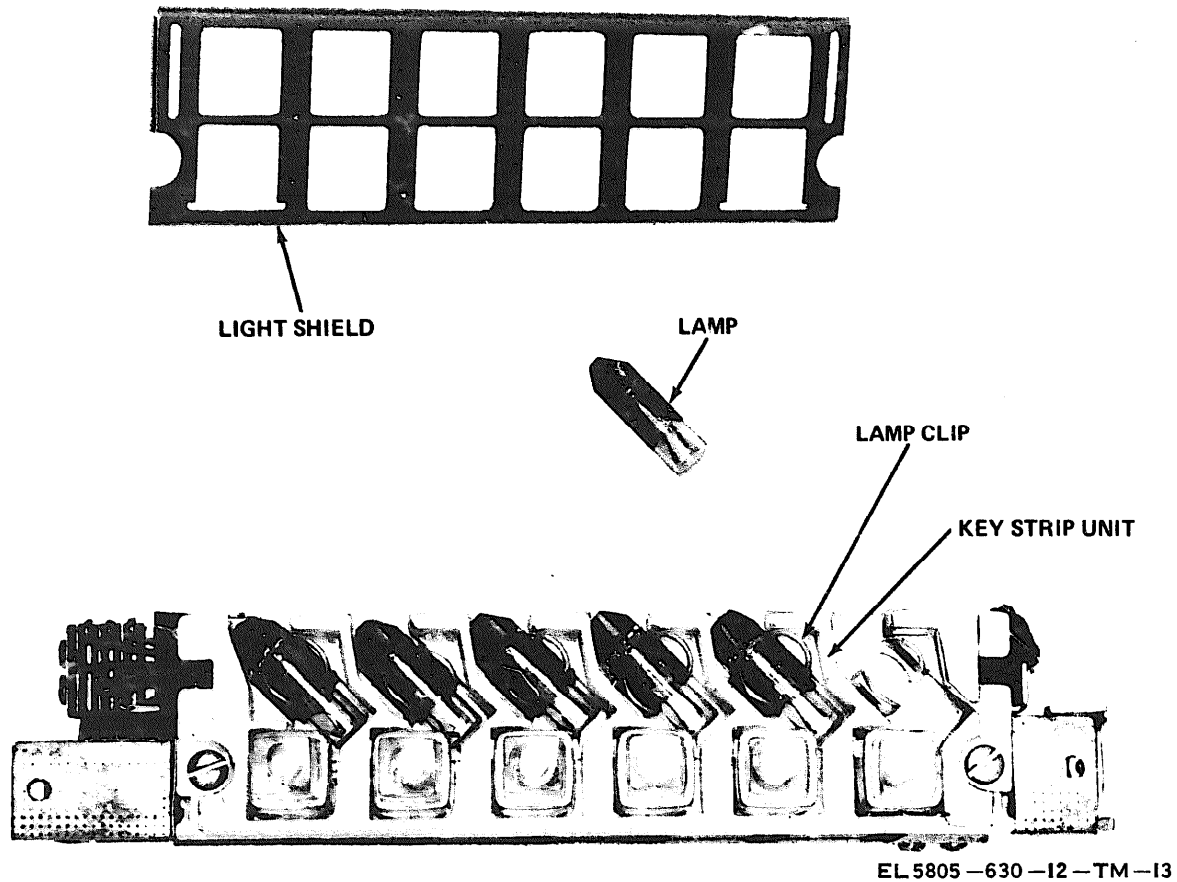


Figure 4-1. Lamp indicator key strip, replacement diagram.

(2) Unscrew the cap and lift the microphone or receiver capsule from the handset.

(3) Disconnect the leads from the capsule, connect the leads to the replacement capsule and insert the replacement capsule in the handset.

(4) Screw the cap on the handset.

#### 4 - 6 L u b r i c a t i o n

Inspect the telephone extension sets and where necessary apply lubricant as follows :

##### NOTE

Under normal operating conditions, lubricant should be applied on a yearly basis.

a. Use an orangestick and apply a small amount of spindle oil (GTE Automatic Elec

tric, Type 5231 ) at both ends of the restoring spring hooks.

b. Apply one dip of blended lubricant (type 5684) to the lever bearing surface on each end where it passes through the lever.

c. Apply one dip of blended lubricant (type 5684) to the exclusion key restoring area of the hookswitch lever.

d. Apply one dip of blended lubricant (type 5684) to the bearing rivets on the exclusion key and its mounting bracket for the length of the bracket.

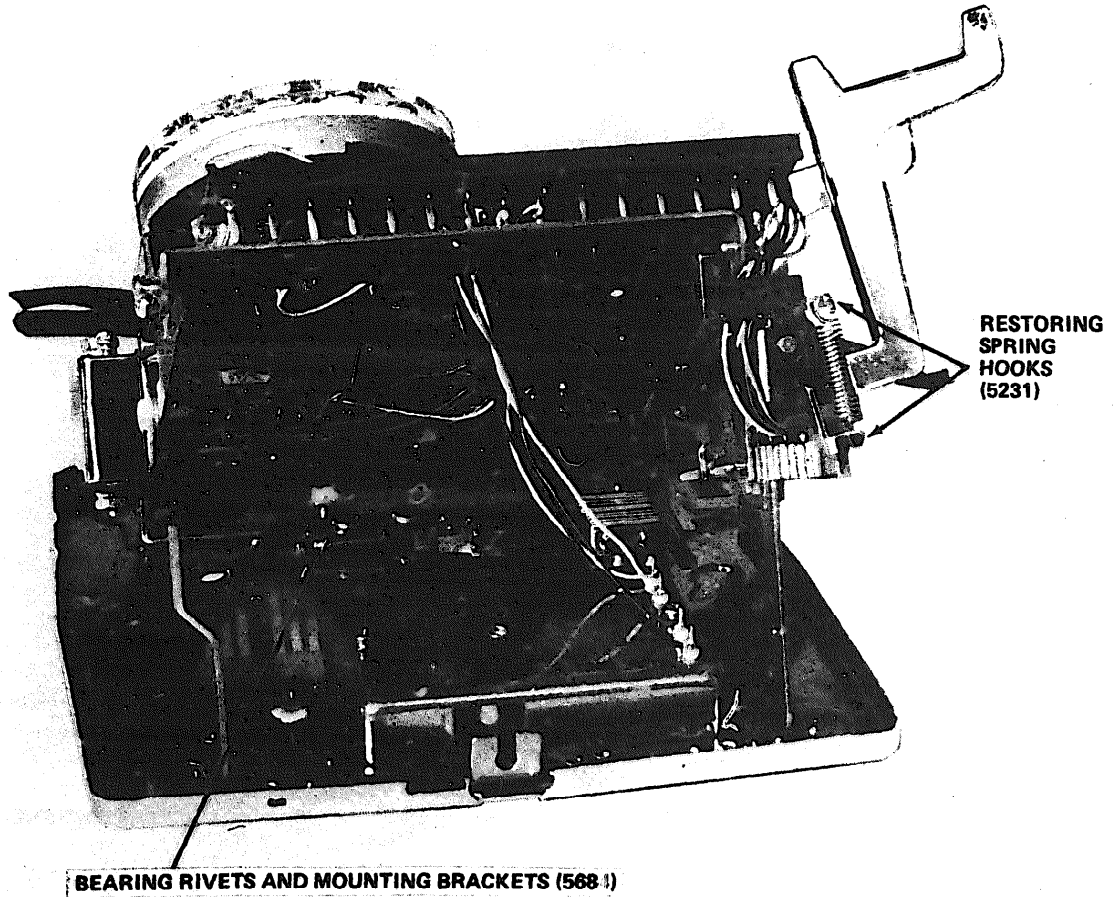
e. On the pushbutton assembly apply several dips of lubricant (type 5920) between the ladder mechanism and frame and between the ladder actuating pins and ladder.

f. Apply one dip of lubricant (type 5920) to the pawl pin guide in the pawl mechanism of the pushbutton assembly.

g. Distribute several dips of lubricant (type 5920) to the edges of the release segments.

NOTE

If any binding or squeaking persists on the pushbutton assemblies after lubrication, refer the unit to higher category maintenance.



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Figure 4-2. Lubrication diagram (sheet 1 of 2).

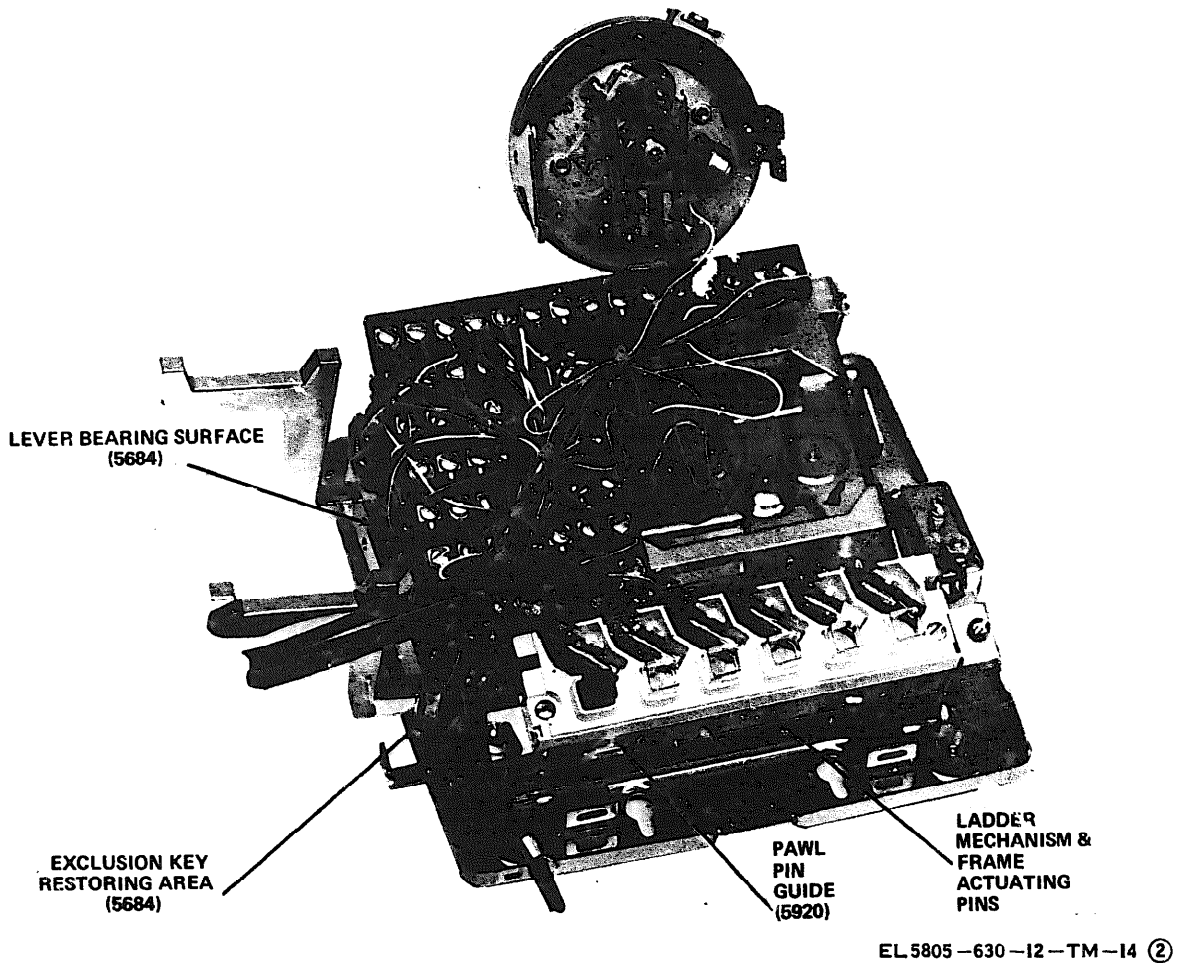
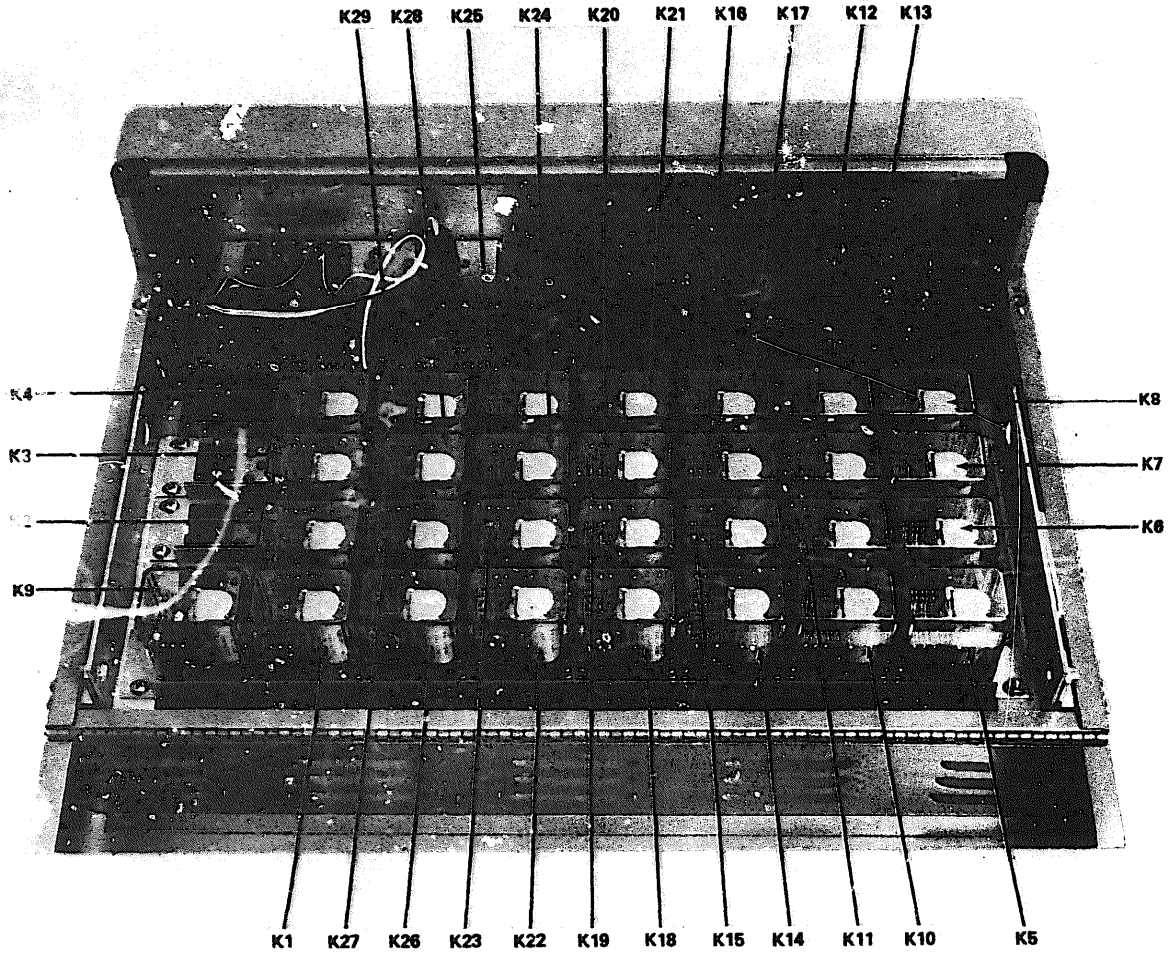


Figure 4-2. Lubrication diagram (sheet 2 of 2).

4 - 7 Troubleshooting Chart

<i>Item</i>	<i>Symptom</i>	<i>Probable cause</i>	<i>Remedy</i>
	No audible reception or transmission when making or receiving call.	Defective microphone or receiver capsule in handset.	Replace microphone or receiver capsule (para 4-5c).
2	Telephone inclusion feature not operable.	Defective inclusion matrix CD-134-2.	Replace inclusion matrix (fig. 4-4).
3	Telephone exclusion feature not operable.	Defective exclusion matrix CD-134-4.	Replace exclusion matrix (fig. 4-4).
4	Intercom operation cannot be achieved between extension phones.	Defective intercom mixer CD-134-6A. Defective line mixer CD-134-5A.	Replace intercom mixer (fig. 4-4). Replace line mixer (fig. 4-4).
5	Call commander ringer or PLAIN and ALARM indicators inoperative.	Defective relay board CD-134-7.	Replace relay board (fig. 4-4).
6	Call commander hold function inoperative when HOLD button is depressed.	a. Hold relay in logic box defective. b. Inclusion matrix CD-134-2 defective.	a. Replace hold relay K4 (fig. 4-3). b. Replace inclusion matrix (fig. 4-3).

Item	Symptom	Probable cause	Remedy																
7	Extension phone hold function inoperative when HOLD button is depressed.	Associated hold relay in logic box defective.	Replace associated hold relay (fig. 4-3) : <table border="1"> <thead> <tr> <th>Extension</th> <th>Relay</th> </tr> </thead> <tbody> <tr><td>1</td><td>K8</td></tr> <tr><td>2</td><td>K13</td></tr> <tr><td>3</td><td>K17</td></tr> <tr><td>4</td><td>K21</td></tr> <tr><td>5</td><td>K25</td></tr> <tr><td>6</td><td>K29</td></tr> </tbody> </table>	Extension	Relay	1	K8	2	K13	3	K17	4	K21	5	K25	6	K29		
Extension	Relay																		
1	K8																		
2	K13																		
3	K17																		
4	K21																		
5	K25																		
6	K29																		
8	Extension phone intercom function inoperative when INTERCOM button is depressed.	Associated intercom relay in logic box defective.	Replace associated intercom relay (fig. 4-3) : <table border="1"> <thead> <tr> <th>Extension</th> <th>Relay</th> </tr> </thead> <tbody> <tr><td>1</td><td>K7</td></tr> <tr><td>2</td><td>K12</td></tr> <tr><td>3</td><td>K16</td></tr> <tr><td>4</td><td>K20</td></tr> <tr><td>5</td><td>K24</td></tr> <tr><td>6</td><td>K28</td></tr> </tbody> </table>	Extension	Relay	1	K7	2	K12	3	K16	4	K20	5	K24	6	K28		
Extension	Relay																		
1	K7																		
2	K12																		
3	K16																		
4	K20																		
5	K24																		
6	K28																		
9	Call commander intercom function inoperative when INTERCOM button is depressed.	Intercom relay in logic box defective.	Replace intercom relay K3 (fig. 4-3).																
10	Call commander fails to light LINE lamps on extension phones when LINE button is depressed.	Line relay in logic box defective.	Replace line relay K2 (fig. 4-3).																
11	Extension phone LINE button when depressed fails to light LINE lamp on call commander and extension phones.	Associated line relay in logic box defective.	Replace associated line relay (fig. 4-3) : <table border="1"> <thead> <tr> <th>Extension</th> <th>Relay</th> </tr> </thead> <tbody> <tr><td>1</td><td>K6</td></tr> <tr><td>2</td><td>K11</td></tr> <tr><td>3</td><td>K15</td></tr> <tr><td>4</td><td>K19</td></tr> <tr><td>5</td><td>K23</td></tr> <tr><td>6</td><td>K27</td></tr> </tbody> </table>	Extension	Relay	1	K6	2	K11	3	K15	4	K19	5	K23	6	K27		
Extension	Relay																		
1	K6																		
2	K11																		
3	K15																		
4	K19																		
5	K23																		
6	K27																		
12	Delay and ON hook relays in KY-3 unit inoperative.	Associated hook relay in logic box defective.	Replace associated hook relay (fig. 4-3). <table border="1"> <thead> <tr> <th>Extension</th> <th>Relay</th> </tr> </thead> <tbody> <tr><td>Call commander</td><td>K1</td></tr> <tr><td>1</td><td>K5</td></tr> <tr><td>2</td><td>K10</td></tr> <tr><td>3</td><td>K14</td></tr> <tr><td>4</td><td>K18</td></tr> <tr><td>5</td><td>K22</td></tr> <tr><td>6</td><td>K26</td></tr> </tbody> </table>	Extension	Relay	Call commander	K1	1	K5	2	K10	3	K14	4	K18	5	K22	6	K26
Extension	Relay																		
Call commander	K1																		
1	K5																		
2	K10																		
3	K14																		
4	K18																		
5	K22																		
6	K26																		



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Figure 4-3. Call director system logic set, interior view, relay location diagram.

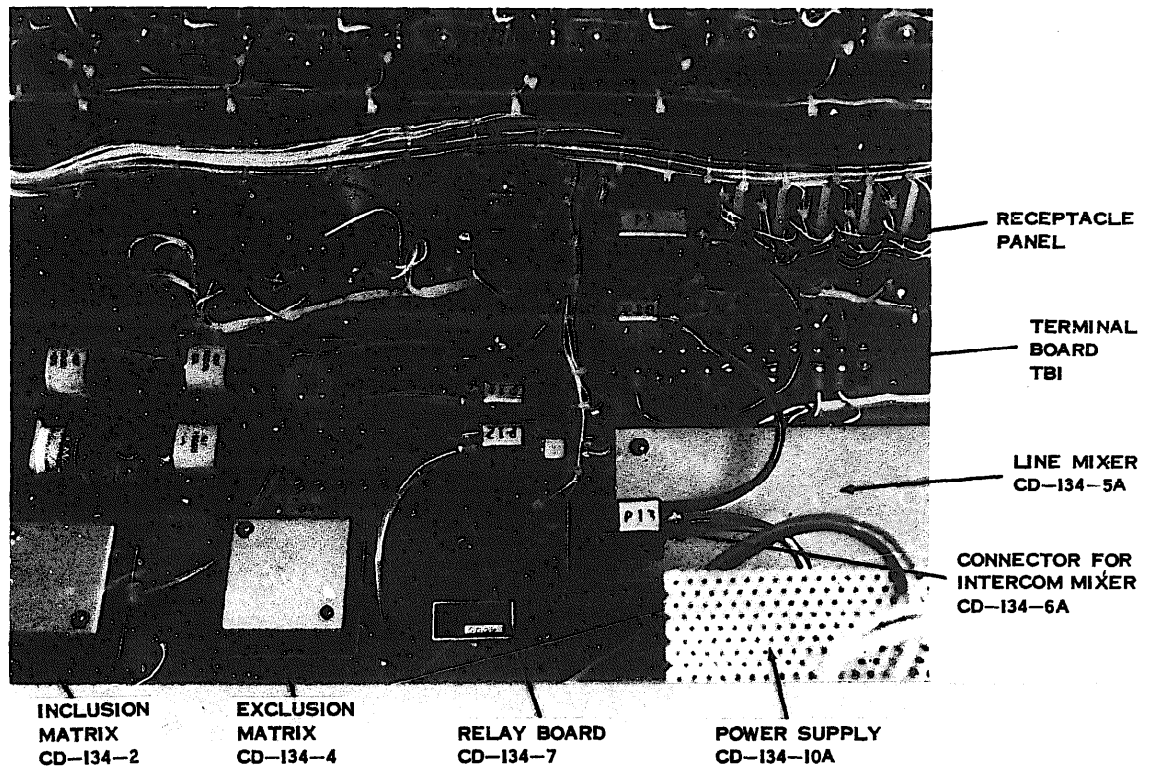


Figure 4-4. Call director system logic set, interior view, relay shelf open, parts location diagram.



A P P E N D I X A

R E F E R E N C E S

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	U.S. Army Equipment Index of Modification Work Orders.
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies, and Equipment Used by the Army.
TB 746-10	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 38-750	The Army Maintenance Management System (TAMMS) .
TM 740-90-I	Administrative Storage of Equipment.

## APPENDIX B

## MAINTENANCE ALLOCATION

## Section I INTRODUCTION

**B-1. General**

This appendix provides a summary of the maintenance operations covered in the equipment literature. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

**B-2. Maintenance Functions**

Maintenance functions will be limited to and defined as follows:

*a. Inspect.* To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.

*b. Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc. This is accomplished with external test equipment and does not include operation of the equipment and operator type tests using internal meters or indicating devices.

*c. Service.* To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.

*d. Adjust.* To rectify to the extent necessary to bring into proper operating range.

*e. Align.* To adjust two or more components or assemblies of an electrical or mechanical system so that their functions are properly synchronized. This does not include setting the frequency control knob of radio receivers or transmitters to the desired frequency.

*f. Calibrate.* To determine the corrections to be made in the readings of instruments or test equip-

ment used in precise measurement. Consists of the comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.

*g. Install.* To set up for use in an operational environment such as an encampment, site, or vehicle.

*h. Replace.* To replace unserviceable items with serviceable like items.

*i. Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes, but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

*j. Overhaul.* Normally, the highest degree of maintenance performed by the Army in order to minimize time work is in process consistent with quality and economy of operation. It consists of that maintenance necessary to restore an item to completely serviceable condition as prescribed by maintenance standards in technical publications for each item of equipment. Overhaul normally does not return an item to like new, zero mileage, or zero hour condition.

*k. Rebuild.* The highest degree of materiel maintenance. It consists of restoring equipment as nearly as possible to new condition in accordance with original manufacturing standards. Rebuild is performed only when required by operational considerations or other paramount factors and then only at the depot maintenance category. Rebuild reduces to zero the hours or miles the equipment, or component thereof, has been in use.

*l. Symbols.* The uppercase letter placed in the appropriate column indicates the lowest level at

which that particular maintenance function is to be performed.

**B - 3 Explanation of Format**

**a. Column 1, Group Number.** Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

**b. Column 2, Functional Group.** Column 2 lists the noun names of components, assemblies, subassemblies, and modules on which maintenance is authorized.

**c. Column 3, Maintenance Functions.** Column 3 lists the maintenance category at which performance of the specific maintenance function is authorized. Authorization to perform a function at any category also includes authorization to perform that function at higher categories. The codes used represent the various maintenance categories as follows:

<i>Code</i>	<i>Maintenance Category</i>
C .....	Operator/crew
O .....	Organizational maintenance
F .....	Direct support maintenance
H .....	General support maintenance
D .....	Depot maintenance

**d. Column 4, Tools and Test Equipment.** Column

4 specifies, by code, those tools and test equipments required to perform the designated function. The numbers appearing **in** this column refer to specific tools and test equipment which are identified in table I.

**e. Column 5, Remarks.** Self-explanatory.

**B-4 Explanation of Format of Table I, Tool and Test Equipment Requirements**

The columns in table I are as follows:

**a. Tools and Equipment.** The numbers in this column coincide with the numbers used in the tools and equipment column of the maintenance allocation chart. The numbers indicate the applicable tool for the maintenance function.

**b. Maintenance Category.** The codes in this column indicate the maintenance category normally allocated the facility.

**c. Nomenclature.** This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

**d. Federal Stock Number.** This column lists the Federal stock number of the specific tool or test equipment.

**e. Tool Number.** Not used.

SECTION II. MAINTENANCE ALLOCATION CHART													
GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE					FUNCTION					TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL		
1	Call Director System	0	0				0	0		D	D	1,2,3,4,5,6,7,8,9,10,11	
1a	Chassis Mounted Parts							H				1,6	
2	Intercom Amplifier P/N CD-134-6A	0	0	0			0	0	D	D		1,2,3,4,7	
3	Supplementary Relay Board P/N CD-134-7	0	0	0			0	0		D		1,2,8	
4	Telephone Preamplifier P/N CD-134-8A	0	0	0			0	0		D		1,2,3,4,5,9	
5	Power Supply. P/N CD-134-10A	0	0	0			0	0		D		1,6	
6	Line Mixer Amplifier P/N CD-134-5A	0	0	0			0	0		D		1,2,3,4,10	
7	Inclusion Matrix, Exclusion Matrix P/N CD-134-2. P/N W-134-4	0	0				0	0		D		1,2,11	
8	Call Commander and Extension Phones	0	0				0	0		H		1,6	
8a	Lamps & Handset elements						0					1	

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
1	O,D	<b>Tool Kit, Electronic Equipment TK-101/G</b>	5180-064-5178	
2	O,D	Power Supply PP-3940/G	6130-985-8136	
3	O,D	Signal Generator SG-71/FCC	6625-669-0255	
4	O,D	<b>Oscilloscope AN/USM-117</b>	6625-787-0304	
5	O,D	Voltmeter, Electronic ME-30/U	6625-669-0742	
6	O,D	Multimeter, TS-352B/U	6625-553-0142	
7	O,D	Test Fixture, Inclusion Matrix	NSN	
8	O,D	Test Fixture, Supplementary Relay Board	NSN	
9	O,D	Test Fixture, Preamplifier	NSN	
10	O,D	Test Fixture, Line Mixer	NSN	
11	O,D	Test Fixture, Inclusion and Exclusion Matrix	NSN	
		NOTE: The maintenance functions allocated up to and including General Support Maintenance are authorized to the organization using the equipment		

APPENDIX C

ORGANIZATIONAL REPAIR PARTS LIST

Section I. INTRODUCTION

C - 1 . S c o p e

This manual lists repair parts required for the performance of organizational maintenance of the call director system.

C - 2 R e p a i r P a r t s - S e c t i o n I I

**This is a list** of repair parts authorized for the performance of maintenance at the organizational level.

C - 3 . E x p l a n a t i o n o f C o l u m n s

The following provides an explanation of columns in the tabular list:

**a. Source, Maintenance, and Recoverability Codes (SMR), Column 1.**

(1) Source code indicates the selection status and source for the listed item. Source codes are -

<b>Code</b>	<b>Explanation</b>
P-	Repair parts which are stocked in or supplied from the GSA/DSA, or Army supply system and authorized for use at indicated maintenance categories.
P2-	Repair parts which are procured and stocked for insurance purposes because the combat <b>or</b> military essentiality of the end item dictates that a minimum quantity be available in the supply system.
PS-	Assigned to items which are NSA design controlled : unique repair parts, special tools, test, measuring and diagnostic equipment, which are stocked and supplied by the Army COMSEC logistic system, and which are not subject to the provisions of AR 380-41.
P10---	Assigned to items which are NSA design controlled : special tools, test, measuring and diagnostic equipment for COMSEC support, which are accountable under

**Explanation**

the provisions of AR 380-41, and which are stocked and supplied by the Army COMSEC logistic system.

M-Repair parts which are not procured or stocked, but are to be manufactured in indicated maintenance levels.

A-Assemblies which are not procured or stocked as such, but are made up of two or more units. Such component units carry individual stock numbers and descriptions, are procured and stocked separately, and can be assembled to form the required assembly at indicated maintenance categories.

X-Parts and assemblies which are not procured or stocked and. the mortality of which normally is below that of the applicable end item or component. The failure of such part or assembly should result in retirement of the end item from the supply system.

X1-Repair parts which are not procured or stocked. The requirement for such items will be filled by use of the next higher assembly or component.

X2-Repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain same through cannibalization. Where such repair parts are not obtainable through cannibalization, requirements will be requisitioned, with accompanying justification, through normal supply channels.

G-Major assemblies that are procured with PEP A funds for initial issue only as exchange assemblies at DSU and GSU level These assemblies will not be stocked above DS and GS level or returned. to depot supply level.

(2) Main lance code indicates the lowest

category of maintenance authorized to install the listed item. The maintenance level code is-

<b>Code</b>	<b>Explanation</b>
<b>0</b>	Organizational maintenance

(3) Recoverability code indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are-

<b>code</b>	<b>Explanation</b>
R-	Repair parts and assemblies that are economically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.
S-	Repair parts and assemblies which are economically repairable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined by a GSU to be uneconomically repairable, they will be evacuated to a depot for evaluation and analysis before final disposition.
T-	High dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts normally are repaired or overhauled at depot maintenance activities.
U-	Repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, or high dollar value reusable casings or castings.

**b. Federal Stock Number, Column 2.** This col-

umn indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

**c. Description, Column 3.** Indicates the Federal item name and a minimum description of the item required to identify the item. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses.

**d. Unit of Measure, Column 4.** A two-character alphabetic abbreviation indicating the amount of quantity of the item upon which the allowances are based; e.g., ft, ea, pr, etc.

**e. Quantity Incorporated in Unit, Column 5.** Indicates the quantity of the item used.

**f. Allowance 15-Day Organizational Maintenance).** Items authorized for requisition as required are identified by an asterisk in the allowance column.

**g. Illustrations.** This column is divided as follows :

(1) **Figure number.** Indicates the figure number of the illustration in which the item is shown.

(2) **Item number.** Not used.

**C-4. Federal Supply Codes for Manufacturers**

<b>Code</b>	<b>Manufacturer</b>
02002	Cooke Engineering Co
58854	Sylvania Electric Products Inc
72619	Dialight Corp
75915	Littelfuse Inc

SECTION II. REPAIR PARTS LIST

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION  Reference Number & Mfr Code	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 15-DAY ORGANIZATIONAL MAINTENANCE ALW				(7) ILLUSTRATIONS		
					(a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100	(a) FIG NO.	(b) ITEM NO. OR REFERENCE DESIGNATION	
		CALL DIRECTOR SYSTEM CD131A (02002)								1-1	
P--0--		LAMP, INCANDESCENT: 10V. 40MA 507-3911 (72619)	EA	1	*	*	*	*		1-4	
P--0--	5920-199-3968	FUSE, CARTRIDGE: 8/10 A, 250V 1402-120 (75915)	EA	1	*	*	*	*		1-5	
P--0--		LAMP, INDICATOR: 10V, 0.40W, 0.040A, 28 OHMS 10ESB (58854)	EA	24	*	*	*	*		4-1	
P--0--		CAP, LENS: Red 38001 (58854)	EA	2	*	*	*	*		4-1	
P--0--		CAP, LENS: Yellow 38002 (58854)	EA	2	*	*	*	*		4-1	



BY Order of the Secretaries of the Army, the Navy, and the Air Force:

BRUCE PALMER, JR.  
**General, U.S. Army**  
**Acting Chief of Staff**

**Official:**

VERNE L. BOWERS  
 Major General, **United States Army**  
**The Adjutant General**

JOSEPH E. RICE  
**Rear Admiral, United States Navy**  
**Commander, Naval Electronic Systems**  
**Command**

Official :

DWIGHT W. COVELL, **Colonel, USAF**  
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 USASTRATCOM-EUR (15)  
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 USASTRATCOM-SO (10)  
 USASTRATCOM-SIG GP-Korea (5)  
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 USASTRATCOM-SIG-GP-Taiwan (5)  
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 OS Maj Comd (5)  
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 Corps (10)  
 1st Sig Bde (10)  
 CINCSTRIKE (J6-FC) (2)  
 CONARC ( ATOPS-C-E) (2)  
 USAESC (30)

Army Dep (1) except  
 TOAD (15)  
 SAAD (30)  
 LEAD (7)  
 LBAD (5)  
 ATAD (10)  
 USA Dep (2)  
 Sig Sec USA Dep (5)  
 Sig Dep (5)  
 Pirmasean Dep (10)  
 USACSA (6)  
 USASG (Aus) (2)  
 USASG (CA) (2)  
 USASG (UK) (2)  
 Sig FLDMS (1)  
 Fort Gordon (10)  
 Fort Huachuca (10)  
 Fort Carson (10)  
 Units org under fol TOE  
 (2 copies to each unit):  
 11-158  
 1 1-302  
 1 1-347  
 11-357  
 29-119  
 29-134  
 29-136

NG: None.

USAR : None.

For explanation of abbreviations used, see AR 310-50.

**END**

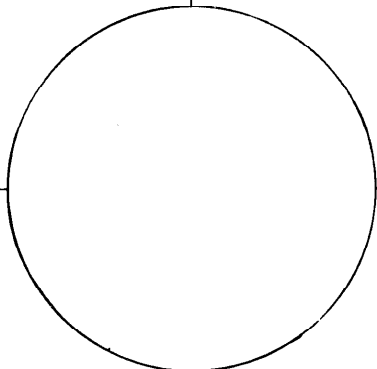
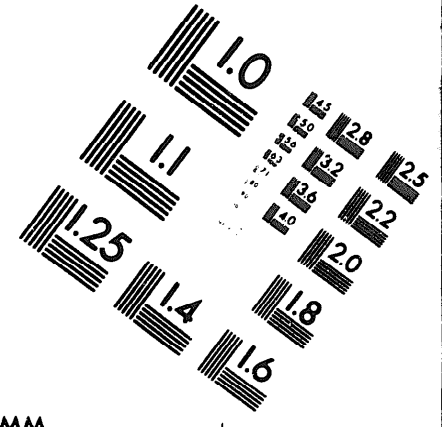
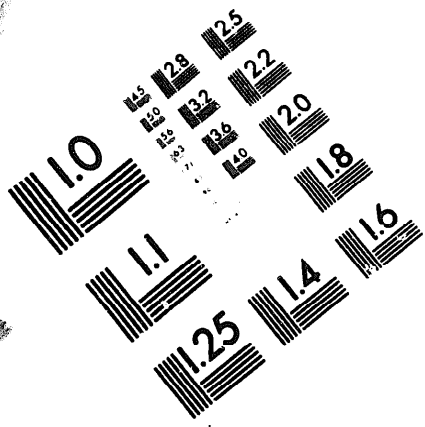
**DATE**

**11-10-82**





MICROFORM  
TEST TARGET



150 MM

1.0 mm (e= .81 mm)

ABCDEFGHIJKLMN**OP**QRSTUVWXYZ1234567890  
abcdefghijklmnopqrstu**vwxyz**\$%&/'%# 1/2 1/4 3/4 —=+ x&@\*

1.5 mm (e= 1.09 mm)

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abcdefghijklmnopqrstu**vwxyz**\$%&/'%# 1/2 1/4 3/4 —=+ x&@\*

2.0 mm (e= 1.37 mm)

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abcdefghijklmnopqrstu**vwxyz**  
1234567890\$%&/'%# 1/2 1/4 3/4 —=+ x&@\*

2.5 mm (e= 1.77 mm)

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abcdefghijklmnopqrstu**vwxyz**  
1234567890\$%&/'%# 1/2 1/4 3/4 —=+ x&@\*

1.0 mm (e= .81 mm)

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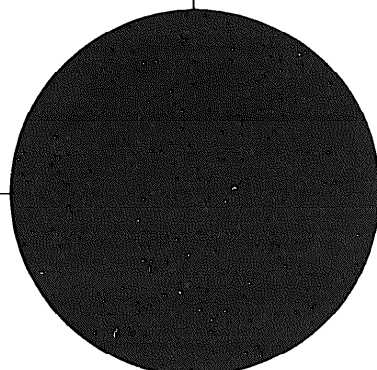
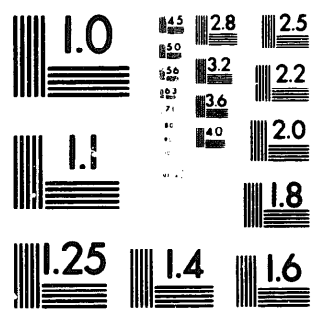
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abcdefghijklmnopqrstu**vwxyz**\$%&/'%# 1/2 1/4 3/4 —=+ x&@\*

2.0 mm (e= 1.37 mm)

ABCDEFGHIJKLMN**OP**QRSTUVWXYZ  
abcdefghijklmnopqrstu**vwxyz**  
1234567890\$%&/'%# 1/2 1/4 3/4 —=+ x&@\*

2.5 mm (e= 1.77 mm)

ABCDEFGHIJKLMN**OP**QRSTUVWXYZ  
abcdefghijklmnopqrstu**vwxyz**  
1234567890\$%&/'%# 1/2 1/4 3/4 —=+ x&@\*



200 MM

250 MM

