TEMPORARY MEMORANDUM
80PA, 150PA, and 250PA PLUG-IN POWER UNITS
PROCEDURE FOR INSPECTING AND REPLACING
KS-21936 LIST 2 (MALLORY) CAPACITORS

CONTENTS

1. GENERAL

1.1 Certain 80PA, 150PA, and 250PA plug-in power units, the dc to dc converters listed in Attachment A, may contain defective capacitors that can cause a localized, self-extinguishing fire and subsequent loss of service.

1.1.1 The units in question were manufactured by the Kearny Works during the period of June, 1982 through March, 1983. They are general purpose in nature and may be used in a variety of electronic switching, transmission, and customer premise products. A listing of "used-on" equipment is provided in Attachment B.

1.1.2 The defective capacitors are the KS-21936 List 2 type manufactured by P. R. Mallory and Co., Inc., during the period of April through December, 1982. These capacitors are electrolytic and do not contain any PCB. All of the defective capacitors must be located and replaced. This Temporary Memorandum (TM) will be terminated when there is sufficient evidence that this has been done.

1.2 This TM applies to all units in Western Electric hands. Its purpose is to describe procedures for inspecting the suspect power units and identifying and replacing the defective capacitors.

1.2.1 The procedures contained in this TM are also applicable to units turned over to the customer. No action shall be taken, however, regarding turned over units until an Engineering Complaint (EC) Order or a 96-Order has been issued to cover the required effort for the specific installation Orbit or customer location. In such cases, the Regional Quality Service Management (QSM) organization should be contacted for the necessary EC or 96-Order.

1.2.1.1 When the procedures contained in this TM are applied to turned over units, it shall be the customer's responsibility to remove the units from service, provide a sufficient number of spare units to replace the affected units if necessary, and return the units to service.

2. INSTALLING EQUIPMENT

2.1 The following items are needed to field replace the defective capacitors:

Installation Tool Set 563
which includes a copy of
Installation Handbook 261,
Section 906.1
(Order from IMDARC;
RAMAC No. 0483594,
Ordering No. 62056300)

ITE 5632 - Voltmeter
(Order from IMDARC;
RAMAC No. 0477653,
Ordering No. 40563200)

Replacement Capacitors
KS-21936 L2, 220uF, 60V
COMCODE 402015796
or
COMCODE 402958524
(Obtain from Kearny Works;
Mr. Murray Hasson
Phone: 201-465-4427
or
Mr. Len Klein
Phone: 201-465-5280)

Green "Stick-On" Dots
or
Green Paint and Small Brush
(Obtain locally)

3. CORRECTIVE ACTION

WARNING:	THE KS-21936 L2 CAPACITOR DOES NOT DISCHARGE IMMEDIATELY AFTER THE POWER UNIT IS TURNED OFF. WAIT ONE MINUTE BEFORE TOUCHING THE CAPACITOR. THE CIRCUIT MODULES, FURTHERMORE, ARE TO BE CONSIDERED SENSITIVE TO ELECTROSTATIC DISCHARGE; THEREFORE, THE NECESSARY PRE-CAUTIONS MUST BE TAKEN WHEN-EVER HANDLING A CIRCUIT MODULE (SEE INSTALLATION HANDBOOK 261, SECTION 906.1).

3.1 Identification:

3.1.1 The power units experiencing failure (see Attachment A) were manufactured by the Kearny Works between June, 1982 and March, 1983. Therefore, only those units stamped 82KY6 through 83KY3 (or 6KY82 through 3KY83) are affected. The identifying date stamp appears on the unit's heat sink below the SD number. No other units require the corrective actions prescribed in this TM.

3.1.2 The defective KS-21936 L2 Capacitors are identified by the following manufacturer's code and date designations:

235-8216[A to Z]
through
235-8252[A to Z]

The manufacturer's code and date designation are printed on the capacitor below the capacitance and working voltage markings. No other capacitors require the corrective actions prescribed in this TM.

3.2 Capacitor Replacement:

3.2.1 Power units having a 132, 133, or 136 code (see Attachment A) and a defective capacitor (see Paragraphs 3.1.1 and 3.1.2) shall not be repaired in the field. These units must be sent to the Kearny Works Repair Shop via an Installer's Requisition. "Why Order" Code 7R with the additional notation, "Defective Capacitor - GEC 3507," shall be written on the Installer's Requisition.

3.2.1.1 Fill out a copy of Attachment C, listing:

a. Power Unit Code (e.g., 133A, 136H, etc.)
b. Manufacture Date of Power Unit (e.g., 82KY7)
c. Serial Number of Power Unit (if available)
d. Manufacture Code and Date of KS-21936 L2 Capacitor (e.g., 235-8216A)
e. Type of System Containing Power Unit and Location (e.g., DACS - Pittsburgh, Pa.)

Mail a completed copy of Attachment C to:

Mr. Murray Hasson
Western Electric
Bldg. 73SE Mezz
Dept. 83160
Kearny, NJ 07032

3.2.1.2 If the power unit does not have a defective capacitor, a green dot shall be placed immediately above the bar code label on the ON/OFF switch bracket.

3.2.2 Power units having a 131 or 135 code (see Attachment A) shall be repaired in the field per the following procedure.

3.2.2.1 Verify that the power unit and capacitor require corrective action in accordance with Paragraphs 3.1.1 and 3.1.2 of this TM.

3.2.2.2 If the power unit does not have a defective capacitor, a green dot shall be placed immediately above the bar code label on the ON/OFF switch bracket.

3.2.2.3 If the power unit does have a defective capacitor, it shall be removed from the circuit module, and the replacement capacitor shall be soldered in its place, in accordance with Installation Handbook 261, Section 906.1. The correct capacitor polarity must be maintained on the circuit module.

3.2.2.4 Provide power to the unit. When the unit is turned on, the ALM lamp shall extinguish.

3.2.2.5 Insert the ITE-5632 voltmeter probes into the test points located on the front panel of the power unit. With the power unit turned on, the output voltage normally associated with the unit shall be indicated by the voltmeter (see Attachment D).

3.2.2.6 Turn the power unit off and then back on. The ALM lamp shall come on when the unit is off, and shall extinguish when the unit is on.

3.2.2.7 If the results presented in Paragraphs 3.2.2.4 through 3.2.2.6 have been observed, place a green dot immediately above the bar code label on the power unit's ON/OFF switch bracket.

3.2.2.8 If any of the results presented in Paragraphs 3.2.2.4 through 3.2.2.6 have not been observed, and all work has been checked and verified, the power unit must be sent to the Kearny Works Repair Shop via an Installer's Requisition. "Why Order" Code 7R with the additional notation, "Defective Capacitor - GEC 3507," shall be written on the Installer's Requisition.

3.2.2.9 Fill out and mail a copy of Attachment C (see Paragraph 3.2.1.1).

4. DISPOSITION OF EXPENSE

4.1 If the amount of time spent performing the Corrective Action described above meets the requirements of CI 47.242, it shall be reported on the SD-4-1007 JIM for the issuance of a Type X Supplementary Estimate with the X-95 Code. The SD-4-1007 JIM shall clearly reference "Defective Capacitor - GEC 3507."

Engineering Planning Manager
(Installation)

Attachment:
A - D

Standard TM Distribution Plus:
One copy to holders of Installation
Engineering Handbooks 9 or 35.

POWER UNIT CODE	COMCODE	SD NUMBER	CIRCUIT MODULE (CM)
131AA1	103552493	82271-02	53
131AB1	103561346	"	"
131B1	103288585	"	"
131F1	102965472	"	"
131H1	102965480	"	"
131J1	102974300	"	"
131K1	102974318	"	"
131L1A	103235644	"	"
131N1A	103235651	"	"
131P1	103078929	"	"
131R1	103113908	"	"
131S1	103113759	"	"
131T1	103240958	"	"
131U1	103224895	"	"
131W1	103174215	"	"
131Y1	103288593	"	"
132AF	102965506	82272-01	42C1
132AG	102996634	"	"
132AJ	103322269	"	"
133A	102823408	82273-01	45B
133B	102965514	"	45G
133C	102965522	"	"
133D	102965530	"	"
133E	102965548	"	"
133F	102979895	"	45B
133G	103258661	"	"
133H	103322277	"	"
133J	103324893	"	"
133K	103551453	"	"
135A1	103168548	82275-02	53
136H	102996642	82272-01	42C1
136K	103049458	"	"
136M	103185427	"	"
136N	103322285	"	"

KNOWN "USED ON" EQUIPMENT (AS OF 6-1-83)
HAVING PLUG-IN POWER UNITS
WITH KS-21936 L-2 CAPACITORS

SYSTEM	EQUIPMENT TITLE	DRAWING	UNIT#
OSS	+5V CONVR UN, 1A AMARC	J1P040WC-1	13 J1A (6)
"	+12V CONVR UN, 1A AMARC	J1P040WD-1	13 J1 (2) 13 K1 (2)
OSS TRANS	MINI RTTU, NO. 3 ESS REMOTE OFC TST LINE	J1P060A-1	131F1
" "	MINI RTTU, 5XB REM OFC T.L.	J1P060B-1	131F1
" "	MINI RTTU, SXS REM OFC T.L.	J1P060C-1	131F1
" "	PWR CONVR PNL, REM TRK TST	J1P051AB-1	131H1, 133A
" "	REM TRK TST BAY	J1P051 A-1	(J1P051AB-1)
" "	REM TRK TST BAY 1A ESS (2 & 4 W HILO) SYS	J1P051B-1	(J1P051AB-1)
OSS-SMAS	5/RTS 5A RTS CONT & R.T. PORT	J1P033A-1	131H1, 132M, 135A1
"	5/RTS 5A RTS BAY SARTS	J1P033C-1	131H1, 132M, 135A1
OSS ARSB	MLT-2	J1P023AH-1	131F1, 131S1
"	MLT-2	J1P023AG-1	131F1, 131S1
OSS	E TELEM, ADV TELEM PROC UN	J1P057A-1	131F1
TRAF MGT SYS	POLLABLE DATA TERM 2A, PDT UN	J3B034B-1	131F1
FACIL MGT SYS	POLLABLE DATA TERM 2A, AFFIRM-3	J3B034C-1	131F1
" " "	POLLABLE DATA TERM 2A, AFFIRM-3	J3B034D-1	131F1
" " "	POLLABLE DATA TERM 2A, BOFADS-DLL	J3B034E-1	131F1
ESS 1/1A	PERIF UN CONT DCT UN	J1A098B-1	131F1 131L1A
"	PERIF UN CONT DCT UN	J1A098A-1	(J1A098B-1)
"	PERIF UN CONT FRAME, DL OPRNS	J1A099A-1	(J1A099AB-1)
"	PERIF UN CONT-DL PWR & PSE UN	J1A099AB-1	131H1
"	INTERNATIONAL TRK INTERCON UNIT-KOREA	J1A104EC-1	131F1
ESS	RSS FR	J4H001A-1	131B1 131H1
"	NO. 10A RSS FSE UN, D4 SPL SVCS	J4H001AF-1, AF-2	131N1A, 131L1A
ESS 4	NET SVCS FR	J4A017A-1	(J1A017AG1)
"	AUDIO BRIDGE FR	J4A017B-1	(J1A017BB-1)
"	DATA BRIDGE FR	J4A017C-1	(J1A017CC-1)
"	NET SVCS FUSE PNL	J4A017AG-1	131J1, 131N1A
"	AUDIO BRIDGE FUSE PNL	J4A017BB-1	131J1
"	DATA BRIDGE FUSE PNL	J4A017CC-1	131J1
"	MODEM LINK	J4A017E-1	133K
ESS 1A PROC	I/O PROC FR	J5A006D-1	(J5A006CE-1, DB-1)
"	MICROPROC GROWTH UN, I/O	J5A006CE-1, CB-1	136H, 136K
"	I/O LOGIC UN	J5A006DB-1, CB-2	136H, 136K
TSPS-1 REM	SUB SYS 2 REM TRJ ARGT 1 POS & TRK CONT FR	J1B043A-1	(J1B043AM-1)
"	VIS IMP OPR INTFC	J1B043AM-1	131F1
API		J5A012AA-1	133J
ESS 5	MISC.	J5D005AB-1	131N1A
5XB	ACD AUX LINE FR 2A DAS/C	J29280A-50	(J29280AB-50)
"	ACD PWR CONVR & TST UN	J29280AB-50	133F
COMM SYS TIC CARR	TIC AUTO PROT SW COM SHELF	J98725K-1	131L1A (6)
COMM SYS	DCT CHAN BK, 48 CH PCM BK BAY	J98732A-1	(J1A098A-1)
"	MULTI LOC CONF TERM FR	J98744A-1	133H, 131J1, 131W1
OSS E TELEM	DIG ALM SCNR	J1P056A-1	131F1
COMM SYS	DIG TRANS FAC (RADIO) TERM BAY	J5X014A-1	(J5X014AA-1)
"	"	J5X014B-1	(J5X014AA-1)
"	DIGITAL RADIO PWR & FUSE SHELF	J5X014AA-1	131L1A, 131T1, 131B1
"	DIGITAL RADIO PWR & FUSE SHELF	J5X014AK-1	131L1A, 131T1, 131B1

KNOWN "USED ON" EQUIPMENT (AS OF 6-1-83)
HAVING PLUG-IN POWER UNITS
WITH KS-21936 L-2 CAPACITORS

SYSTEM	EQUIPMENT TITLE	DRAWING	UNIT#
COMM SYS	DIGITAL RADIO 90A REGEN BAY	J5X046E-1	(J5X046EA-1)
"	DIGITAL RADIO PWR COND SHELF	J5X046EA-1	131B
"	DIG TRANS OPTICAL ORD CH (OOCAT)	J98741A-1	131H1, 131L1A, 131T1
"	DIG TRANS FAC, 90B DIG REGEN BAY	J98745A-1	(J98745AA-1)
"	DIG TRANS FAC DIG, REGEN SH ASSEM	J98745AA-1	131F1, 131W1
"	DIG TRANS FAC PWR UN (OOCAT)	J98741A-2	131H1, 131L1A, 131T1
TOLL SYS TASI-E	INTERNATIONAL SYS FR	J68963A-1	131J1, 131K1, 133K
COMM SYS	DIG TRANS FAC, MX3 LIGHTWAVE MON & CONT BAY	J98734A-2	131L1A, 131T1
"	DIG TRANS FAC, MX3 FUNCT BAY	J98734B-2	131L1A, 131T1
COMM SYS	DIG TRANS FAC, MX3C LIGHTWAVE TERM, MON, CONT BAY	J98734C-2	131F1, 131L1A, 131T1, 131AB1
"	DIG TRANS FAC, MX3C LIGHTWAVE TERM GROWTH BAY	J98734D-2	BIT 1, 131AB1
"	DIG TRANS FAC, MX3 MON & CONT BAY	J98734E-1	131L1A, 131T1
COMM SYS	DIG TRAN FAC, MX3 LIGHTWAVE UN	J98734L-2	131L1A
"	DIG TRAN FAC, MX3 LIGHTWAVE UN	J98734M-2	131L1A
"	DIG TRAN FAC, FT3 LINE REP BAY	J98734R-1	131L1A, 131T1
"	DIG TRAN FAC, LSTA	J98734N-1	131T1, 131AB1
"	DIG TRANS FAC, RPTS	J98734S-2	131L1A, 131T1
"	DIG TRAN FAC, MX3/FT3C MX3C/FT3C PLUG-IN UNITS	J98734Y-1	131F1, 131L1A, 131T1, 131AB1
"	NO. 1A VOICE STORAGE	ED5C019-30	131F1
"	NO. 1A VOICE STORAGE	ED5C019-31	131F1
"	RTS-E PWR UN	J93016DS-1	131S1, 131R1
"	NO. 1A VOICE STORAGE	J5C001BJ-1	131F1
COMMON SYS	DIG TRANS FAC DACS PLUG-IN SPEC	J98735AA-1	131J1, 131W1, 131Y1, 133H
COMMON SYS	M1C-A DIG MX SYS PLUG-IN SPEC	J98737D-1	131U1
COMMON SYS	DIG TRANS FAC OOCAT LINE ASSEM	J98741B-1	131H1, 131L1A, 131T1
"	DIG TRANS FAC OOCAT LINE ASSEM	J98741B-2	131H1, 131L1A, 131T1
"	DIG TRANS FAC OOCAT TERM AND LINE	J98741P-1	131L1A, 131T1, 131H1
"	DIG TRANS FAC LIGHTWAVE TERM MX ASSEM SYS TESTED BAY	NJ04003B-1	131L1A
"	3B PROCESSOR PWR UN	J1C129AE-1	132AJ, 132AG
"	DISK FILE CONT UN	J1C130AC-1	133J, 133A
"	3B PROC IOP BASIC UN	J1C130AA-1, AB-1, BA-1	136H, 136N
"	3B PROC IOP GROWTH UN	J1C130BB-1	136H, 136N
NOTE: 3B20 USED IN ESS-5, TSPS, ESS-4, NCP, LADT, PTN, EPSCS, STAND ALONE UNITS ARE NOT FIELD REPAIRABLE.			
STATION SYS	E-911 ANSWR POINT BASIC 3 CARRIER CAB	J53060A-1	(J53060BA-1)
"	E-911 ANSWR POINT PWR UN	J53060BA-1	131L1A

KNOWN "USED ON" EQUIPMENT (AS OF 6-1-83)
HAVING PLUG-IN POWER UNITS
WITH KS-21936 L-2 CAPACITORS

SYSTEM	EQUIPMENT TITLE	DRAWING	UNIT#
TELEVISION SYS	DIG TV LIGHTWAVE, DTLS TRANS,	J44111A-1	131U1, 131B1
"	DTLS RCVR	J44111B-1	131U1, 131B1
POWER SYS	663A CONVR PWR PLT	J86912A-1	133D, 133E
"	663B CONVR PWR PLT	J86913A-1	133B, 133C
"	664A CONVR PWR PLT	J86920A-1	133G
"	PWR SUP BAY & LOAD TRANSFER BAY	ED82992-30	133G
ACS	NET ACCESS CONT	J70194AC-1	131F1
LOOP RANGE EXTENSION		J2H048AB-1	136K
MF COMPELLED TRANSCEIVER		J4A016AA-1	131F1
ACS	SPARES	ED73666-30	131F1
1/1A ESS	SPARES	H510-056	131F1, 131H1, 131L1A, 133J, 136H
4ESS	SPARES	H510-057	136H
4ESS	SPARES	H510-063	131F1, 133J
3B20D	SPARES	H510-058	132AJ, 133J, 136N
3B20D	SPARES	ED-4C45830	132AJ
3B20S	SPARES	H510-101	132AJ, 133J, 136N
3B20S	SPARES	ED-4C416-30	132AJ, 133J, 136N
NSC	SPARES	H510-102	133K

Power Unit Code	Manufacture Date of Power Unit	Serial Number of Power Unit	Manufacture Code and Date of KS21936L2 Capacitor	Type of System and Location

MAIL DATA FORM TO: M. R. HASSON
WESTERN ELECTRIC
BLDG 73SE MEZZ
DEPT 83160
KEARNY, NJ 07032

POWER UNIT CODE	OUTPUT VOLTAGE
131AA1	-48.0 ± 0.96
131AB1	-2.50 ± 0.05
131B1	-2.10 ± 0.05
131F1	+5.1 ± 0.1
131H1	+12.0 ± 0.6
131J1	+12.20 ± 0.24
131K1	-12.20 ± 0.24
131L1A	+5.1 ± 0.1
131N1A	+25.0 ± 0.5
131P1	+130.0 ± 2.6
131R1	+15.00 + 0.75 -15.00 ∓ 0.75
131S1	+150.0 ± 3.0
131T1	-5.45 ± 0.10
131U1	+5.00 ± 0.05
131W1	-5.40 ± 0.11
131Y1	+5.25 ± 0.11
135A1	+26.00 + 3.9 -24.00 ∓ 0.48