TABLE OF CONTENTS

01.00.00 INTRODUCTION.

THE BASIC DISKETTE, P/N1635001, TESTS ATTACHMENT(S) AND DEVICE(S) IN SERIAL MODE. THAT IS, ONE (1) AND ONLY ONE (1) ATTACHMENT OR DEVICE IS TESTED AT A TIME. THE SYSTEM TEST DISKETTE P/N 1635003, WILL TEST FROM A MAXIMUM OF THREE (3) UP TO A MAXIMUM OF FIFTEEN (15) ATTACHMENTS AND/OR DEVICES AT ONCE. THE INSTALLED STORAGE SIZE IS USED FOR THE NUMBER OF ATTACHMENTS/DEVICES THAT CAN BE RUN.

THIS IS A WORST CASE TEST OF THE PROCESSING UNIT AND ATTACHMENTS AND DEVICES UNDER A CUSTOMER TYPE APPLICATION. THIS TEST IS NOT A FIELD REPLACEMENT UNIT TEST. IT IS AN ERROR INDICATION TEST. THE PROBLEM FINDING MUST BE DONE BY THE C E, USING ECP ERROR MESSAGES AS AN AID.

02.00.00 DIAGNOSTIC FLOW:

- POWER UP ALL FILE(S) AND DEVICE(S).

MICRO DIAGNOSTICS WILL TEST THE BASIC PROCESSING UNIT.

- PRESS THE RESET KEY.

THE MICRO CODE WILL RESET THE SYSTEM AND DO A BASIC CHANNEL TEST.

- INSERT THE SYSTEM TEST DISKETTE.
- PRESS THE LOAD KEY.

A THIRD MICRO DIAGNOSTIC ROUTINE WILL START.

AT THE END OF THE MICRO ROUTINE, IPL WILL START AT CYLINDER 0, HEAD 0,RECORD 1, AND 256 BYTES OF DATA WILL BE READ INTO STORAGE. A HARDWARE BRANCH TO STORAGE LOCATION 0000 STARTS THE STORAGE PARITY TESTS.

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*                                                                        *
*  NOTE:    WHEN YOU IPL THE SYSTEM TEST DISKETTE WITHOUT THE SYSTEM     *
*           FIRST BEING INITIALIZED, PARITY ERROR(S) WILL OCCUR,         *
*           BECAUSE THE SYSTEM DOES NOT GENERATE PARITY IN STORAGE       *
*           (EXCEPT FOR THE FIRST 16K). IN THIS CASE THESE ERRORS MUST   *
*           BE IGNORED BECAUSE THEY ARE NOT A CORRECT INDICATION OF      *
*           THE CONDITION OF THE MACHINE.                                *
*           RUN MAP 2000 USING THE BASIC DISKETTE, OR SOME OTHER METHOD. *
*           THIS WILL INITIALIZE THE STORAGE.                            *
*                                                                        *
*                                                                        *
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AT THE END OF THE STORAGE PARITY TESTS, THE EXERCISER CONTROL PROGRAM (ECP) IS LOADED AND CONTROL IS PASSED TO IT.
IF PARITY ERRORS ARE FOUND, SEE SECTION 02.01.00.

IF DEVICE TYPE 'E4' IS TO BE TESTED, USE THE DISKETTE PART NUMBER 6826590 TO SET UP THE DEVICE FOR TESTING.

IF DEVICE TYPE 'E6' IS TO BE TESTED, USE THE DISKETTE PART NUMBER 6031185 TO SET UP THE DEVICE FOR ALTERNATE CONSOLE.

IF THE ASSIGNED ALTERNATE CONSOLE DEVICE TYPE IS '45' (FEATURE 4978), SEE THE NOTE BELOW.

IF NO PARITY ERRORS ARE FOUND, ECP WILL PROMPT 'RDY ENTER' (HALT CODE 3400).
TESTING OF THE I/O DEVICES CAN START.

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*                                                                        *
*  NOTE:    THE 4978 IS A RPQ DEVICE, BUT BECAUSE IT IS A SUPPORTED      *
*           ALTERNATE CONSOLE, IT IS TESTED BY THE BASIC AND SYSTEM      *
*           TEST DISKETTE. THE 4978 DISPLAY HAS A NUMBER OF              *
*           KEYBOARDS, SO ANY KEY MAY GENERATE ANY CODE. ECP MUST        *
*           KNOW WHAT CODE(S) ARE ASSOCIATED WITH THE FUNCTION(S)        *
*           AND CHARACTER(S) USED IN THE ALTERNATE CONSOLE ROUTINE.      *
*           THIS HALT CODE IS 3417 WHICH IS THE SAME AS 3817 UNDER DCP.  *
*           SEE MAP 0013, HALT 3817.                                     *
*                                                                        *
*                                                                        *
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02.01.00 STORAGE PARITY TEST

THE STORAGE PARITY TESTS REFERENCED IN SECTION 02.00.00 (THIS MAP) ARE A SET OF THREE PROGRAMS (PID 34A1, 34A2, 34A3) WHICH TEST FOR ERRORS AS FOLLOWS:

A) INNER STORAGE PARITY. (TESTED BY 34A1 AND 34A2)
B) INNER STORAGE PARITY FOUND WHEN THE TRANSLATOR IS ENABLED. (TESTED BY 34A3)
C) OUTER STORAGE PARITY. (TESTED BY 34A3)
D) INNER STORAGE PARITY FOUND AFTER A 60 SECOND DELAY. (TESTED BY 34A3)
E) INNER STORAGE PARITY FOUND WHEN THE TRANSLATOR IS ENABLED AFTER A 60 SECOND DELAY. (TESTED BY 34A3)
F) OUTER STORAGE PARITY FOUND AFTER A 60 SECOND DELAY. (TESTED BY 34A3)

THE TESTING IS PERFORMED IN THE FOLLOWING SEQUENCE:

WHEN YOU IPL, PROGRAM 34A1 IS LOADED IN STORAGE. 34A1 WILL TEST THE FIRST 16K BYTES OF STORAGE. IF AN ERROR IS FOUND, HALT CODE 342E WILL BE DISPLAYED IN THE LEDS. (SEE SECTION 02.02.00). IF NO ERROR(S) ARE FOUND, 34A2 IS LOADED FROM THE DISKETTE AND CONTROL IS PASSED TO IT. 34A2 WILL TEST THE REMAINING INNER STORAGE (RECORDING ALL ERRORS, IF ANY), THEN WILL LOAD IN 34A3 AND PASS CONTROL TO IT. PID 34A3 WILL FIRST TEST TO SEE IF A TRANSLATOR IS INSTALLED. IF NOT IT WILL DELAY 60 SECONDS THEN AGAIN TEST ALL INNER STORAGE (SEE NOTE BELOW). IF A TRANSLATOR IS INSTALLED THE TESTS ARE PERFORMED IN THE FOLLOWING SEQUENCE:

1) ENABLE THE TRANSLATOR
2) TEST INNER STORAGE
3) TEST OUTER STORAGE
4) DISABLE THE TRANSLATOR
5) DELAY 60 SECONDS (SEE NOTE BELOW)
6) TEST INNER STORAGE
7) ENABLE THE TRANSLATOR
8) TEST INNER STORAGE
9) TEST OUTER STORAGE
10) DISABLE THE TRANSLATOR

AFTER IT IS ENDED 34A3 WILL LOAD IN ECP AND TURN CONTROL OVER TO IT.

AFTER ECP IS LOADED AND HAS ASSIGNED AN ALTERNATE CONSOLE, BUT BEFORE THE 'RDY ENTER' MESSAGE (HALT 3400), ALL PARITY ERRORS FOUND WILL BE PRESENTED TO THE OPERATOR AS PER THE HALT CODES DESCRIBED IN SECTION 02.02.00 (THIS MAP).

NOTE: WHILE IN THE 60 SECOND DELAY THE LEDS WILL INDICATE (IN HEXADECIMAL) THE TIME OF THE DELAY IN SECONDS. IF THIS SECTION OF THE TEST IS NOT DESIRED, THE OPEPATOR CAN PRESS THE RESET KEY FOLLOWED BY THE START KEY. WHEN THIS IS DONE ALL PARITY ERRORS ARE IGNORED BY THE SYSTEM. THE SYSTEM WILL GO TO THE READY ENTER STATUS (HALT CODE 3400).

NOTE: WHEN YOU IPL THE SYSTEM TEST DISKETTE WITHOUT THE SYSTEM FIPST BEING INITIALIZED, PARITY ERROR(S) WILL OCCUR, BECAUSE THE SYSTEM DOES NOT GENEPATE PARITY IN STORAGE (EXCEPT FOR THE FIRST 16K). IN THIS CASE THESE ERRORS MUST BE IGNORED BECAUSE THEY ARE NOT A CORRECT INDICATION OF THE CONDITION OF THE MACHINE. RUN MAP 2000 USING THE BASIC DISKETTE, OR SOME OTHER METHOD. THIS WILL INITIALIZE THE SIORAGE.

NOTE: ON THE BASIC DISKETTE, THE STORAGE SIZE IS PASSED TO DCP. ON THE SYSTEM TEST DISKETTE, THE STORAGE SIZE PASSED TO ECP DOES NOT CONTAIN THE STORAGE COUNT OF OUTER STORAGE, BUT THE QUANTITY OF OUTER STORAGE THE TRANSLATOR CARD IS JUMPERED FOR. IF THE TRANSLATOR CARD IS JUMPERED FOR 48K (3 - 16K BLOC KS) AND THE MACHINE ONLY HAS 32K OF OUTER STORAGE (2 - 16K BLOCKS), WHEN YOU IPL THE SYSTEM TEST DISKETTE, IT WILL SHOW 3 - 16K BLCCKS FOUND WITH A PARITY ERROR IN THE THIRD 16K BLOCK.

NOTE: IF IN INDICATING AN ERROR THE STORAGE SIZE PASSED TO THE OPERATOR IS NOT CORRECT, THE ADDRESS TRANSLATOR IS SUSPECT.

NOTE: THIS IS A CHART OF STORAGE IN 16K BLOCKS:

1. READ THE STORAGE ADDRESS IN THE LEFT COLUMN.
2. SEE THE STORAGE CARD/MODULE SIZE INSTALLED IN INNER STORAGE IN THE RIGHT COLUMNS.
3. THIS IS THE STORAGE CARD/MODULE THE ADDRESS IS INSTALLED ON. SEE THE AXXXX LOGICS.

STORAGE ADDRESS FROM	TO	K SIZE	16K BLOCK	CARD OR MODULE SIZE OF INNER SICRAGE INSTALLED 16K	32K	64K	128
INNER STORAGE							
0000	TO 3FFF	16K	1	1/4	1/4	1/4	1/4
4000	TO 7FFF	32K	2	2/4	1/4	1/4	1/4
8000	TO BFFF	48K	3	3/4	2/4	1/4	1/4
C000	TO FFFF	64K	4	4/4	2/4	1/4	1/4
OUTER STORAGE							
10000	TO 13FFF	80K	1	5/4	3/4	2/4	1/4
14000	TO 17FFF	96K	2	6/4	3/4	2/4	1/4
18000	TO 1BFFF	112K	3	7/4	4/4	2/4	1/4
1C000	TO 1FFFF	128K	4	8/4	4/4	2/4	1/4
20000	TO 23FFF	144K	5	*	*	3/4	2/4
24000	TO 27FFF	160K	6	*	*	3/4	2/4
28000	TO 2BFFF	176K	7	*	*	3/4	2/4
2C000	TO 2FFFF	192K	8	*	*	3/4	2/4
30000	TO 33FFF	208K	9	*	*	4/4	2/4
34000	TO 37FFF	224K	A	*	*	4/4	2/4
38000	TO 3BFFF	240K	B	*	*	4/4	2/4
3C000	TO 3FFFF	256K	C	*	*	4/4	2/4
40000	TO 43FFF	272K	D	*	*	*	3/4
44000	TO 47FFF	288K	E	*	*	*	3/4
48000	TO 4BFFF	304K	F	*	*	*	3/4
4C000	TO 4FFFF	320K	10	*	*	*	3/4
50000	TO 53FFF	336K	11	*	*	*	3/4
54000	TO 57FFF	352K	12	*	*	*	3/4
58000	TO 5BFFF	368K	13	*	*	*	3/4
5C000	TO 5FFFF	384K	14	*	*	*	3/4
60000	TO 63FFF	400K	15	*	*	*	4/4
64000	TO 67FFF	416K	16	*	*	*	4/4
68000	TO 6BFFF	432K	17	*	*	*	4/4
6C000	TO 6FFFF	448K	18	*	*	*	4/4
70000	TO 73FFF	464K	19	*	*	*	4/4
74000	TO 77FFF	480K	1A	*	*	*	4/4
78000	TO 7BFFF	496K	1B	*	*	*	4/4
7C000	TO 7FFFF	512K	1C	*	*	*	4/4

* NOT APPLICABLE

02.02.00 STORAGE PARITY TESTS HALT CODES

34A1 (NO MESSAGE)
PID 34A1 IS IN STORAGE AND RUNNING (THIS SHOULD ONLY APPEAR IN THE LEDS FOR A SHORT PERIOD OF TIME)

34A2 (NO MESSAGE)
PID 34A2 IS IN STORAGE AND RUNNING (THIS SHOULD ONLY APPEAR IN THE LEDS FOR A SHORT PERIOD OF TIME)

34A3 (NO MESSAGE)
PID 34A3 IS IN STORAGE AND RUNNING. THIS IS THE PROGRAM THAT DOES A RUNNING COUNT FOR 60 SECONDS.

3424 INNER STORAGE PARITY ERROR(S)
PARITY ERROR(S) WERE FOUND WHEN TESTING INNER STORAGE. THESE ERRORS WILL BE INDICATED BY THE FOLLOWING 342A HALT(S).
(PROGRAMMERS CONSOLE USE '6' TO CONTINUE EXECUTION)

3425 INNER STORAGE PARITY ERROR(S) WITH TRANSLATOR ENABLED
PARITY ERROR(S) WERE FOUND WHEN TESTING INNER STORAGE WITH THE TRANSLATOR ENABLED. THESE ERRORS WILL BE INDICATED BY THE FOLLOWING 342A HALT(S).
(PROGRAMMERS CONSOLE USE '6' TO CONTINUE EXECUTION)

3426 OUTER STORAGE PARITY ERROR(S)
PARITY ERROR(S) WERE FOUND WHEN TESTING OUTER STORAGE. THESE ERRORS WILL BE INDICATED BY THE FOLLOWING 342A HALT(S).
(PROGRAMMERS CONSOLE USE '6' TO CONTINUE EXECUTION)

3427 INNER STORAGE PARITY ERROR(S) AFTER DELAY
PARITY ERROR(S) WERE FOUND WHEN TESTING INNER STORAGE AFTER A 60 SECOND DELAY. THESE ERRORS WILL BE INDICATED BY THE FOLLOWING 342A HALT(S).
(PROGRAMMERS CONSOLE USE '6' TO CONTINUE EXECUTION)

3428 OUTER STORAGE PARITY ERROR(S) AFTER DELAY.
PARITY ERROR(S) WERE FOUND WHEN TESTING OUTER STORAGE AFTER A 60 SECOND DELAY. THESE ERRORS WILL BE INDICATED BY THE FOLLOWING 342A HALT(S).
(PROGRAMMERS CONSOLE USE '6' TO CONTINUE EXECUTION)

3429 INNER STORAGE PARITY ERROR(S) TRANSLATOR ENABLED AFTER DELAY
PARITY ERROR(S) WERE FOUND WHEN TESTING INNER STORAGE WITH THE TRANSLATOR ENABLED AFTER A 60 SECOND DELAY. THESE ERRORS WILL BE INDICATED BY THE FOLLOWING 342A HALTS(S).
(PROGRAMMERS CONSOLE USE '6' TO CONTINUE EXECUTION)

342A XXXXXX --> LOCATED IN THE 16K BLOCK NUMBER X'YYYY'
A PARITY ERROR WAS FOUND (PROGRAMMERS CONSOLE USE '6' TO CONTINUE EXECUTION). REGISTER 1 AND 2 WILL CONTAIN ADDRESS XXXXXX WHILE REGISTER 3 WILL CONTAIN THE 16K BLOCK NUMBER YYYY.)

342B (NO MESSAGE)
PARITY ERRORS WERE FOUND. IF THE ERRORS ARE TO BE DISPLAYED TO THE OPERATOR, RESPOND WITH A 1 (YES). IF THESE ERROR(S) ARE TO BE IGNORED, RESPOND WITH A 0 (NO). THIS MESSAGE WILL ONLY BE ISSUED WHEN THERE IS NO ALTERNATE CONSOLE AND THE PROGRAMMERS CONSOLE IS THE ONLY METHOD OF INPUT/OUTPUT.

342E (NO MESSAGE)
AN ERROR WAS FOUND IN THE FIRST 16K OF STORAGE WHILE EXECUTING PID 34A1. PRESS INTERRUPT TO OBTAIN THE ADDRESS IN THE LEDS, THEN PRESS THE INTERRUPT KEY TO CONTINUE RUNNING.

03.00.00 EXERCISER CONTROL PROGRAM (ECP) COMMANDS:

0 REPLY TO QUESTION WITH A 'NO'

1 REPLY TO QUESTION WITH A 'YES'

2 IGNORE ERROR LIMIT WHILE RUNNING SYSTEM TEST

3 RESET ERROR LIMIT TO FIVE (5) ERRORS

6 CONTINUE AT NEXT SEQUENTIAL INSTRUCTION.

7 STOP SYSTEM TEST.
STOP ALL SYSTEM TEST AND COME TO A NORMAL TERMINATION.

8 DUMP EXECUTION AND ERROR NUMBER WHILE TESTING

9 TERMINATE THE PROGRAM AND/OR DEVICE ADDRESS.
NOTE: WHILE THE SYSTEM TEST SUPERVISOR IS IN STORAGE THIS COMMAND MUST BE FOLLOWED BY A DEVICE ADDRESS. THE PROGRAM TESTING THIS ADDRESS WILL THEN BE TERMINATED.

B START PROGRAM.
USE 'B' FOR LOAD AND GO. FOR EXAMPLE 'B 3410' WILL CAUSE THE SYSTEM TEST SUPERVISOR TO LOAD AND EXECUTE.
NOTE: WHILE THE SYSTEM TEST SUPERVISOR IS IN STORAGE THIS COMMAND MUST BE FOLLOWED BY A DEVICE ADDRESS. THE PROGRAM NEEDED FOR TESTING THIS ADDRESS WILL THEN BE LOADED INTO STORAGE AND START TESTING THE INDICATED DEVICE ADDRESS.

D DUMP STORAGE TO ALTERNATE CONSOLE.

F RESPOND TO PROGRAM WITH SUITABLE INFORMATION

04.00.00 COMMON HALT LIST:

04.01.00 EXERCISER CONTROL PROGRAM (ECP) HALTS

3400 RDY ENTER

ECP WILL TAKE ANY VALID COMMAND.

3401 (NO MESSAGE)

BAD CONDITION CODE RECEIVED FROM ALTERNATE CONSOLE. USE THE PROGRAMMER CONSOLE TO GIVE A CONTINUE (B),6,(I),(I), SEE SECTION 05.01.00. ECP WILL ASSIGN AS THE ALTERNATE CONSOLE THE PROGRAMMER CONSOLE AND CONTINUE THE PROGRAM.

3402 PCK ROUTINE=XXXX CHECKPOINT=XXXX PSW=XXXX IAR=XXXX

0260	IAR	AKR	LSR	REG0	REG1	REG2	REG3	REG4
0270	REG5	REG6	REG7	PSW	SAR	0000	0000	0000

PROGRAM CHECK HAS OCCURRED --> GO TO MAP 3871 ENTRY POINT A, OR IF OPERATING UNDER FRIEND SELECT THE LOOP ON PCK OPTION.
NOTE: IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE, PRESS 'STOP', SELECT LEVEL 3, THEN: R0 WILL CONTAIN THE PROGRAM ID, R1 WILL CONTAIN THE CHECKPOINT, R2 WILL CONTAIN THE PROGRAM STATUS WORD AT THE TIME OF THE PCK INTERRUPT, AND R3 WILL CONTAIN THE ADDRESS OF THE INSTRUCTION FOLLOWING THE FAILURE. THE INFORMATION IN THE LEVEL STATUS BLOCK (LSB) CAN BE FOUND AT HEXADECIMAL STORAGE LOCATION '0260' IN THE ABOVE ORDER.
IF THE ROUTINE = 3400, THE PCK OCCURRED WHILE LOADING A PROGRAM.

3403 MCK ROUTINE=XXXX CHECKPOINT=XXXX PSW=XXXX IAR=XXXX

0260	IAR	AKR	LSR	REG0	REG1	REG2	REG3	REG4
0270	REG5	REG6	REG7	PSW	SAR	0000	0000	0000

MACHINE CHECK HAS OCCURRED --> GO TO MAP 3871 ENTRY POINT A, OR IF OPERATING UNDER FRIEND SELECT THE LOOP ON MCK OPTION.
NOTE: (IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE, PRESS 'STOP', SELECT LEVEL 3, THEN: R0 WILL CONTAIN THE PROGRAM ID, R1 WILL CONTAIN THE CHECKPOINT, R2 WILL CONTAIN THE PROGRAM STATUS WORD AT THE TIME OF THE MCK INTERRUPT, R3 WILL CONTAIN THE IAR AT THE TIME OF THE INTERRUPT. THE INFORMATION IN THE LEVEL STATUS BLOCK (LSB) CAN BE FOUND AT HEXADECIMAL STORAGE LOCATION '0260' IN THE ABOVE ORDER.

3404 POWER THERMAL WARNING

0260	IAR	AKR	LSR	REG0	REG1	REG2	REG3	REG4
0270	REG5	REG6	REG7	PSW	SAR	0000	0000	0000

POWER/THERMAL CHECK (IF NO BATTERY BACKUP THE SYSTEM WILL POWER DOWN BEFORE THE MESSAGE CAN BE DISPLAYED ON AN ALTERNATE CONSOLE.) GO TO MAP 1470, ENTRY POINT A, OR IF OPERATING UNDER FRIEND SELECT THE LOOP ON POWER THERMAL WARNING OPTION (IF THE THERMAL WARNING IS A WRONG INDICATION OF THE PROBLEM).
NOTE: (IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE, PRESS 'STOP'. THE INFORMATION IN THE LEVEL STATUS BLOCK (LSB) CAN BE FOUND AT HEXADECIMAL STORAGE LOCATION '0260' IN THE ABOVE ORDER.

3405 PT

THE PROGRAM HAS BEEN TERMINATED. ECP WILL TAKE ANY VALID COMMAND/OPTION.
WHEN THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE THIS HALT WILL BE DISPLAYED TO INDICATE CORRECT TERMINATION OF A PROGRAM.

3406 REQUEST NOT VALID

ECP RECEIVED A WRONG COMMAND.

3407 ALTERNATE CONSOLE OFF

THE ALTERNATE CONSOLE (A CONSOLE ASSIGNED BY THE CONFIGURATION PROGRAM) IS BEING TESTED. ANY MESSAGES WILL BE DISPLAYED ON THE PROGRAMMER CONSOLE.

3408 ALTERNATE CONSOLE ON

TESTING OF THE ALTERNATE CONSOLE IS COMPLETE. MESSAGES ARE BEING DISPLAYED ON THE ALTERNATE CONSOLE.

3409 NOT EXPECTED INTERRUPT ISB=XXXX

ECP HAS BEEN INTERRUPTED BY A DEVICE THAT SHOULD NOT BE ACTIVE. THE RIGHT MOST BYTE OF THE ISB IS THE ADDRESS OF THE INTERRUPTING DEVICE. IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE R0 (LEVEL = 3) WILL CONTAIN THE ISB.

340A ST

THE PROGRAM HAS STARTED.

340B DISKETTE ERROR

AN OIO ERROR OCCURRED WHILE ADDRESSING THE CE LOAD DEVICE. ATTEMPT THE ECP COMMAND AGAIN. IF THE PROBLEM REMAINS, IPL THE BASIC DIAGNOSTIC DISKETTE THEN, GO TO THE 4964 ENTRY MAP. AFTER THIS IF NO FAILURE VERIFY THE DISKETTE.

340C PNF

NO VTOC ENTRY FOR THE REQUESTED PROGRAM.
IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE R3 WILL CONTAIN A POINTER TO THE REQUESTED PROGRAM NAME IN STORAGE.

340D XXXXX LOADED

REQUESTED PROGRAM HAS BEEN LOADED. (XXXXX LOADED AT = YYYY). THIS MESSAGE WILL BE DISPLAYED IF THE PROGRAM JUST LOADED CAN BE LOADED AT ANY LOCATION IN STORAGE. THE 'AT' ADDRESS (YYYY) IS THE START ADDRESS OF THE LOADED PROGRAM.

3410 NO REPLY EXPECTED

THE CONSOLE DATA WAS RECEIVED AND ECP WAS NOT EXPECTING 'REPLY' DATA.

3413 (NO MESSAGE)

A COMMAND SEQUENCE HAS BEEN ENTERED FROM THE PROGRAMMER CONSOLE. IF CORRECT, PRESS CONSOLE INTERRUPT. ECP WILL EXECUTE THE COMMAND. TO CHANGE (CONSOLE DELETE), CHANGE THE BUFFER CONTENTS AND PRESS CONSOLE INTERRUPT. ECP WILL DISPLAY 3414. START THE COMMAND SEQUENCE AGAIN.

3414 ENTER

A COMMAND OR REPLY SEQUENCE HAS BEEN STARTED AND MORE DATA IS NEEDED. INSERT THE DATA.
NOTE: THIS HALT IS ALSO DISPLAYED AFTER A PROGRAMMER CONSOLE DELETE. (SEE SECTION 05.01.00).

3415 (NO MESSAGE)

ECP HAS RECEIVED A WRONG SEQUENCE OF 'SVC' REQUESTS FROM THE I/O PROGRAM.
YOU CANNOT CONTINUE FROM THIS HALT. GO TO MAP 0070, ENTRY POINT A.

341D (NO MESSAGE)

ECP HAS RECEIVED A COMMAND TO DUMP STORAGE AND IS NOW DUMPING TO THE ALTERNATE CONSOLE.

05.00.00 OPERATING THE SYSTEM:

IF THE ONLY CE COMMUNICATION DEVICE IS THE PROGRAMMER CONSOLE SEE - PROGRAMMER CONSOLE OPERATION, SECTION 05.01.00, FOR MESSAGE DECODE AND COMMAND ENTRY.

IF A KEYBOARD CONSOLE IS BEING USED, ANSWER(S) WILL HAVE TO BE ENTERED THROUGH THE PROGRAMMER CONSOLE IF:
(1) THE DISKETTE HAS NEVER BEEN CONFIGURED, OR
(2) THE KEYBOARD CONSOLE HAS BEEN ASSIGNED A NEW ADDRESS, OR
(3) THE KEYBOARD CONSOLE IS KNOWN TO BE FAILING.

WHEN THE CONFIGURATION IS CORRECT AND A KEYBOARD CONSOLE HAS BEEN ASSIGNED, YOU CAN COMMUNICATE THROUGH THE CONSOLE KEYBOARD EXCEPT WHILE THE CONSOLE DEVICE IS UNDER TEST. WHILE TESTING THE ASSIGNED KEYBOARD CONSOLE ECP WILL COMMUNICATE THROUGH THE PROGRAMMER CONSOLE SEE SECTION 05.01.00.

KEYBOARD COMMUNICATION IS AS INDICATED: AT ANY 'ENTER' PROMPT, KEY THE ECP COMMAND/OPTION CHARACTER, FOLLOWED BY A 'SPACE', FOLLOWED BY DATA (IF NEEDED) AND END THE INPUT WITH RETURN/ENTER/TRANSMIT.

NOTE THE SPACE IS NOT NECESSARY IF NO DATA FOLLOWS.

FOR EXAMPLE '7 RETURN' WILL SET THE STOP SYSTEM TEST BIT.
'F XXXX XXXX, RETURN' WILL ANSWER A PROGRAM'S REQUEST FOR 4 BYTES OF HEXADECIMAL INFORMATION (A PROGRAM MAY REQUEST UP TO 32 BYTES EBCDIC, 64 BYTES HEXADECIMAL OR DECIMAL.
'1 RETURN' WILL ANSWER A ROUTINE QUESTION 'YES'.
'0 RETURN' WILL ANSWER A ROUTINE QUESTION 'NO'.

NOTE: IF THE MAINTENANCE LOAD DEVICE IS USED TO IPL THE SYSTEM TEST DISKETTE, YOU MUST VERIFY THAT THE CUSTOMER PROGRAM WILL LOAD AND EXECUTE AFTER REMOVING THE MAINTENANCE LOAD DEVICE.

05.01.00 PROGRAMMER CONSOLE OPERATION:

THE SEQUENCE FOR COMMAND/REPLY/OPTION ENTRY THROUGH THE PROGRAMMER CONSOLE WILL CHANGE WITH THE COMMAND.

THESE COMMANDS ARE GROUPED INTO FOUR SECTIONS AS FOLLOWS:

(1) SINGLE CHARACTER COMMAND(S) (NO ASSOCIATED DATA).
COMMAND(S) '2','3','7', AND '8' ARE ENTERED BY PRESSING FOUR KEY'S AS FOLLOWS:

(B)=DATA BUFFER KEY, (I)=CONSOLE INTERRUPT KEY.

COMMAND	KEY SEQUENCE	DESCRIPTION
2	(B),2,(I),(I)	IGNORE ERROR LIMIT.

(B) WILL SELECT THE DATA BUFFER FOR COMMAND/OPTION ENTRY.
(I) INSERT THE COMMAND CHARACTER (2), INTO BIT(S) 12-15 OF THE DATA BUFFER.
SECOND CONSECUTIVE INTERRUPT CAUSES ECP TO EXECUTE THE COMMAND
ECP WILL 'ON CONDITION' TAKE THE '2' COMMAND. IF YOU WANT TO CHANGE: SELECT THE DATA BUFFER (B), CHANGE THE VALUE OF THE RIGHTMOST HEXADECIMAL CHARACTER (BIT(S) 12 THROUGH 15) AND PRESS INTERRUPT (I). THIS WILL TRANSMIT A 'DELETE', START THE COMMAND SEQUENCE AGAIN.

3	(B),3,(I),(I)	RESET ERROR LIMIT OPTION.
6	(B),6,(I),(I)	CONTINUE.
7	(B),7,(I),(I)	STOP SYSTEM TEST.
8	(B),8,(I),(I)	DUMP SYSTEM TEST INFORMATION.

NOTE: COMMAND 8 IS NOT RECOGNIZED WITHOUT AN ALTERNATE CONSOLE .

(2) COMMAND(S) NEEDING A PROGRAM NAME OR DEVICE ADDRESS.
COMMAND(S) '9' AND 'B' CAUSE ECP TO LOAD OR TERMINATE A PROGRAM, THEREFORE, THE FOUR DIGIT PROGRAM ID OR TWO DIGIT DEVICE ADDRESS MUST BE SUPPLIED WITH THE COMMAND CHARACTER.

(B)=DATA BUFFER KEY, (I)=CONSOLE INTERRUPT KEY.

COMMAND	KEY SEQUENCE	DESCRIPTION
B	(B),B,(I),(B),Y,Z,X,X,(I),(I)	LOAD & GO PROGRAM YZXX OR DEVICE ADDRESS YZ

(B) SELECT DATA BUFFER FOR ENTRY.
CAUSES ECP TO READ THE COMMAND.
BECAUSE COMMAND='9-B-F' ECP NEEDS DATA.
(I) INSERT COMMAND 'B' INTO DATA BUFFER.
WILL SELECT THE DATA BUFFER FOR COMMAND ENTRY.
PROGRAM/DEVICE ADDRESS
YZ=DEVICE ADDRESS XX=00
SECOND CONSECUTIVE INTERRUPT, ECP WILL EXECUTE THE COMMAND.
ECP HAS 'ON CONDITION' TAKEN THE COMMAND. FOR 'DELETE' SEE COMMAND '2' ABOVE.

9	(B),9,(I),(B),Y,Z,X,X,(I),(I)	TERMINATE DEVICE ADDRESS YZ FROM SYSTEM TEST.

(3) COMMAND(S) NEEDING A VARIABLE AMOUNT OF DATA.

COMMAND 'D' DUMP STORAGE NEEDS TWO WORDS OF DATA --> A FROM ADDRESS FOLLOWED BY THE TO ADDRESS.

THE 'D' COMMAND CAN BE ENTERED AS FOLLOWS:
(1) ALTERNATE CONSOLE -> 'D FFFFTTTT' OR 'D FFFF TTTT
(2) PROGRAMMERS CONSOLE -> (B),D,(I),(B),F,F,F,F,(I),(B),T,T,T,T,(I),(I)

COMMAND 'F' CAN NEED FROM ONE TO FIFTEEN 'WORDS' OF REPLY DATA
THIS COMMAND IS ENTERED AS FOLLOWS:

(B)=DATA BUFFER KEY,(I)=CONSOLE INTERRUPT KEY,< >=OPTIONAL ENTRY.

COMMAND 'F', REPLY TO PROGRAM.

ALL UTILITY AND CONTROL PROGRAMS MAY REQUEST 'REPLY DATA' (DEVICE ADDRESS, TEST DATA, AND SO ON.) THIS IS DONE BY THE 'F' COMMAND.

```
(B),X,F,(I),(B),X,X,X,X,(I),<(B),X,X,X,X,(I),>(I)
    ---         -------       -------------
     |             |               |    |INSERT UP TO FIFTEEN
     |             |                    |(BECAUSE OF THE
     |             |                    |NUMBER) MORE WORDS OF
     |             |                    |REPLY DATA.
     |             |    |FIRST WORD OF REPLY DATA.  (IF ONLY TWO
     |                  |CHARACTERS WERE REQUESTED INSERT XX00.)
     |    |NUMBER ENTRY. PROGRAM CAN REQUEST UP TO
          |FIFTEEN WORDS OF REPLY DATA (ENTRY = 'FF').
```

(4) COMMAND(S) USED TO ANSWER A QUESTION.

COMMAND '1' WILL ANSWER A QUESTION 'YES'.
COMMAND '0' WILL ANSWER A QUESTION 'NO'.

```
1      (B),1,(I),(I)           ANSWER     QUESTION YES.
0      (B),0,(I),(I)           ANSWER     QUESTION NO.
```

THE CONSOLE/PROCESSING UNIT HARDWARE INTERFACE IS SUCH THAT YOU MAY FIND IT DIFFICULT TO CAUSE AN INTERRUPT FROM THE PROGRAMMER CONSOLE WHEN PROGRAMS ARE EXECUTING. PRESS THE INTERRUPT KEY SLOWLY --- WHEN THE INTERRUPT IS TAKEN THE AUDIBLE DEVICE WILL SOUND.

05.02.00 HALT AND DATA CODES:

HALT CODES HAVE BEEN ASSOCIATED WITH A DEVICE WHERE POSSIBLE. (SEE MAP 0012)

A REFERENCE FOR PROGRAM HALTS FOLLOWS:

HALT CODES	PROGRAM AND REFERENCE	
3400-341F	ECP	SEE SECTION 04.01.00 MAP 0015
3420-342F	SYSTEM IPL PARITY CHECK	SEE SECTION 02.02.00 MAP 0015
3430-343F	SYSTEM TEST	SEE SECTION 02.01.00 MAP 0016
3460-347F	SYSTEM TEST UTILITY	SEE SECTION 03.01.00 MAP 0016
3480-34DF	FRIEND TEST	SEE SECTION 02.02.00 MAP 0017

REPLY WITH '1', '0', '6', OR DATA AS NEEDED.

IF YOU ARE USING THE C.E. MAINTENANCE CONSOLE:
VERIFY THE MACHINE AFTER REMOVING THE CONSOLE:

SET THE MODE SWITCH TO 'DIAG'.
OBSERVE THE IPL INDICATOR AS YOU IPL THE BASIC DIAGNOSTIC DISKETTE PART NUMBER 1635001.

THE IPL INDICATOR SHOULD FLASH 'ON' THEN 'OFF' AND THE RUN INDICATOR SHOULD REMAIN 'ON'. IF THE IPL INDICATOR DOES NOT FLASH, OR THE 'RUN' INDICATOR DOES NOT REMAIN 'ON', A FAILURE HAS OCCURRED. CHECK THE SEATING OF THE CARD(S) AND/OR CABLE(S) WHICH MAY HAVE BEEN LOOSENED AS THE RESULT OF REMOVING THE MAINTENANCE CONSOLE.

RESET THE MODE SWITCH TO ITS ORIGINAL PLACE BEFORE RETURNING THE SYSTEM TO THE CUSTOMER.

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***** CAUTION *****
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IT IS RECOMMENDED THAT THE C.E. MAINTENANCE CONSOLE NEVER BE LEFT INSTALLED WHILE THE CUSTOMER PROGRAM IS EXECUTING. THIS IS BECAUSE A CONSOLE INTERRUPT IS A 'CLASS INTERRUPT', WHICH STARTS HARDWARE ACTION TO STORE THE LEVEL CONTROL BLOCK AND BRANCH TO AN INTERRUPT ROUTINE. IF THE CUSTOMER PROGRAM DOES NOT INITIALIZE STORAGE IN PREPARATION FOR A CONSOLE INTERRUPT, THE RESULTS ARE NOT PREDICTABLE.

06.00.00 SYSTEM TEST
START UP AND EXECUTION --- SEE MAP 0016