

8CU31A

7080 - 705 COMPATIBILITY PROGRAM

April 15, 1961



7080 - 705 COMPATIBILITY PROGRAM**A. PURPOSE OF TEST**

To verify that the 7080 CPU will operate as a 705 I, 705 II, or 705 III 40K, as determined by console switch settings.

B. METHOD OF TEST

It is assumed that the 7080 CPU is in good working order in all areas other than the one tested in this program.

a. The test is divided in three independent sections:

1. 705 III 40K
2. 705 II
3. 705 I

b. List of Routines

1. The 705 III section consists of 7 routines which test the wrap around of:
 - a. MAC I when stepped -1, /1, /5 at 40K
 - b. MAC 2 when stepped /1, /5 at 40K
 - c. IC when stepped /5 at 40K

and a routine which tests the indirect address feature.

2. The 705 II section consists of 13 routines: Routines 1-6 are the same as 705 III. Routine 7 tests for Non Execution of indirect address. The remaining routines test the instructions; Add, TR 01, TRA 01-06, TRS 10-15, in 705 II mode.
3. The 705 I section is the same as 705 II, except that the wrap around takes place at 20K.

c. Running of Test

1. To completely test 7080 compatibility, run all the three sections of the program, i. e., obtain a 'Z' typeout in each of the three sections.
2. It is suggested that the following order be tried in running the program: 705 II, 705 I, 705 III.

~~It should be emphasized that it is not necessary to adhere to the above order. The program will run no matter in what order the sections are tested.~~

G. AREA OF MACHINE REQUIRED

a. Units

7080 - CPU

b. Memory Location

1.	00000 - 7897	Total Memory Load
2.	18200 - 18800	Load Program

D. LOADING PROCEDURE

a. Card

Use standard load program 8LD01 with cards in the following order:

8LD01	2 cards
8CU31	122 cards
8TR02	1 card
Blanks	3 cards

b. Tape

Use a tape generated by 8TR06. Refer to the 8TR06 write-up for complete details on generating and using this tape.

E. PROGRAM CONTROL

a. Check Switches - all in program

b. Alteration Switches

911 ON - Bypass Typeouts
912 ON - Repeat Routine
913 ON - Stop on Error
914 ON - Repeat Program
915 ON - Bypass Forced Errors
916 ON - Stop to Switch Sections

c. Manual Control

1. 705 III 40K

Turn 40K switch on, and 705 I/II switch off.
At 00179 store a '3'.

2. 705 II

Turn 40K switch on.
Turn 705 I/II switch on.
At 00179 store a '2'.

Note: On initial run after loading if Halt 9999 does not occur a 2 need not be stored for this version.
See comments.

3. 705 I

Turn 705 I/II switch on and 40K switch off.
At 00179 store a '1'.

4. To switch sections proceed as follows:

- I. Put 916 on
- II. When Halt 0000 occurs, set machine up to enter new desired section of program and restart.

F. NORMAL STOP

- a. Halt 0000. This stop occurs when 916 is on. Check switch setting for proper section, turn 916 off and start.
- b. Halt 6666. This occurs when 914 is off.
- c. Halts 7051, 7052, 7053. These halts occur only the first time a section of the program (705 I, 705 II, 705 III) is entered.
Hit start.

G. ERROR STOPS

- a. Halt X0XX indicates a failure of a routine. The high order 'X' stands for 1, 2, 3, indicating 705 I, II, III sections respectively. Low order 'XX' designate a routine number in that section, example: Halt 3005 means that routine 5 of 705 III section failed. To continue, hit start.

H. TYPEOUTS

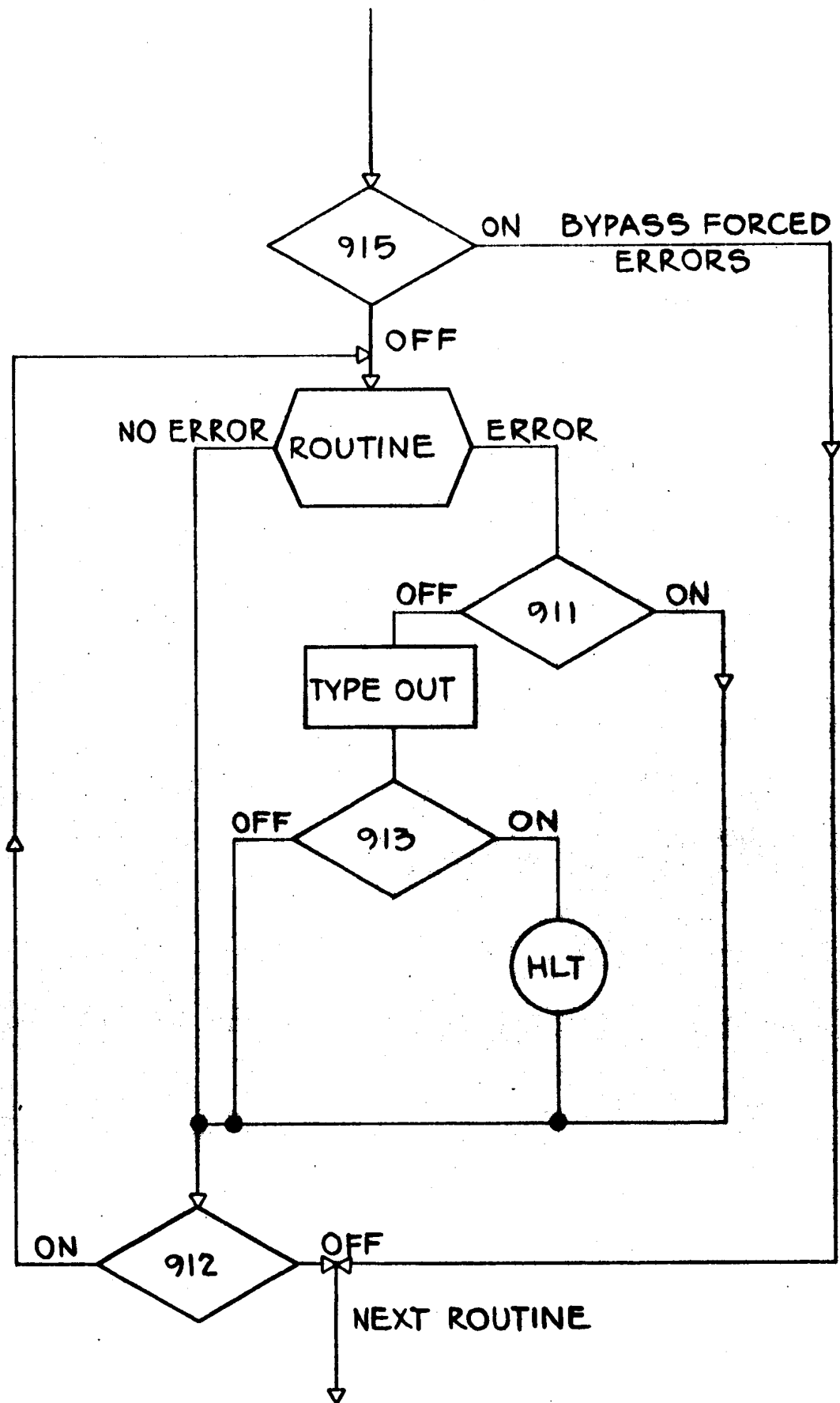
- a. Short typeout X0XX indicates failure of a routine. The high order 'X' stands for 1, 2, 3, indicating 705 I, II, III sections

respectively. Low order 'XX' designate a routine number in that section, example: 2006 means that routine 6 of 705 II section failed.

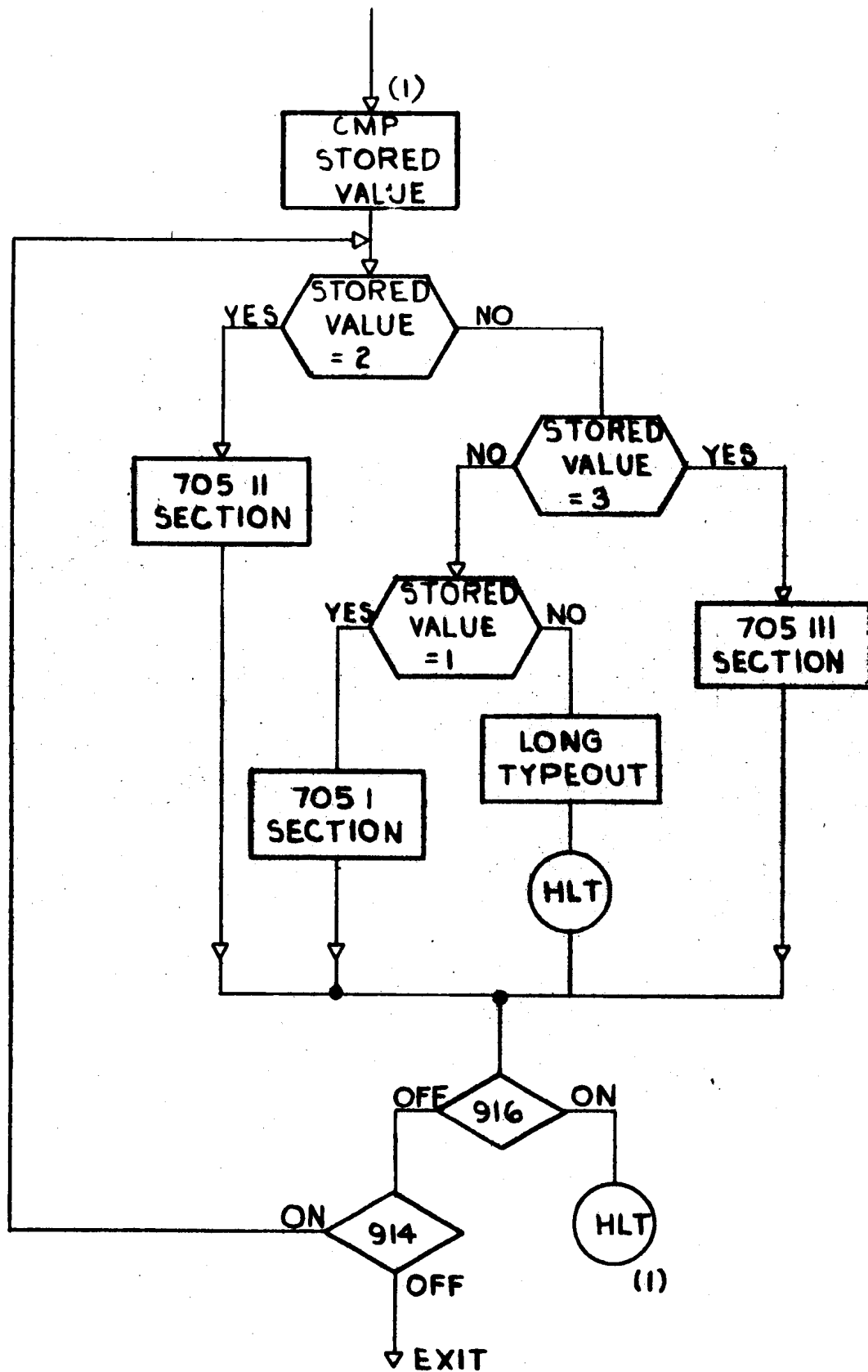
- b. Long typeout "STORED FIELD INCORRECT". At 00179 STORE 1 OR 2 OR 3 FOR 705 I, II, III AND START." This occurs when stored field is not any one of 1, 2, 3. To restart, follow the message.
- c. Typeouts 0900 - 0905 indicate corresponding error conditions in the program prior to routines where these errors are forced.
- d. After every 1000 passes a 'Z' will be typed out.
- e. Typeouts "705 I/II SW ON, 40K SW OFF, CHK SW ON PROGRAM 705 I" and similar ones for 705 II and 705 III occur the first time the particular section of the program is entered. Follow the instructions and hit start.
- f. "TURN 705 I/II AND 40K SW IF ON." This typeout occurs when 914 is off. Before leaving the program make sure this instruction is followed.

J. COMMENTS

- a. With the proper switch setting, the program when loaded will automatically run as 705 II. If another version is tried first or if HLT 9999 occurs, store a '2' at 00179 on switching back to 705 II.
- b. Do not switch sections without first putting 916 on. When Halt 0000 occurs, remember to have the proper switch settings for the section you wish to enter.



LAYOUT OF TYPICAL ROUTINE



GENERAL LAYOUT OF PROGRAM


```

2 005 00159 00000
2 005 00164 01000
2 005 00169 00000
2 001 00170 2
2 001 00171 3
2 001 00172 1
2 002 00174 XA
2 001 00175 Z
2 004 00179 H002
2 023 00202 STORED FIELD INCORRECT
2 024 00226 AT 00179 STORE 1,2 OR 3
2 027 00253 FOR 705 1,11 OR 111 & START
2 001 00254 H

```

A01.....
00259 NOP A 0344
00264 SGN T 0255
00269 SEL 2 0500
00274 WR R 0285
00279 HLT J 7053
00284 TR I 0344-----B03

2 035 00319
2 017 00336
2 001 00337

CONSTANTS & WORK AREA
705 I/II SW OFF, 40K SW ON, CHK SW ON
PROGRAM. 705 III
□

7080 VERSUS 705 111 40K
 COMPATIBILITY TEST
 705 I/II OFF ,40K SW ON
 ROUTINE 1
 WRAP AROUND OF MAC 1
 WHEN STEPPED MINUS 1
 USING LOAD INSTRUCTION

B02.....

```

00344 SET B 01 0005 00 5
00349 LOD 8 01 0004 00 4
00354 SET B 02 0005 00-5
00359 LOD 8 02 39999 19R9
00364 SET B 0005
00369 LOD 8 0494
00374 UNL 7 39999 1999
00379 SET B 0005
00384 LOD 8 0499
00389 UNL 7 0004
00394 SET B 0010
00399 LOD 8 0004
00404 UNL 7 0519
00409 SET B 0005
00414 LOD 8 0514
00419 CMP 4 39999 1999
00424 SET B 02 0005 00-5
00429 UNL 7 02 39999 19R9
00434 SET B 01 0005 00 5
00439 UNL 7 01 0004 00 4
00444 TRE L 0484
00449 NOP A 0000
00454 TRA I 01 0484 04Y4
00459 SEL 2 0500
00464 WR R 0520
00469 TRA I 03 0479 04G9
00474 TR 1 0484
00479 HLT J 3001
00484 TRA I 02 0344 03M4
00489 TR 1 0529
  
```

SAVE ORIGINAL FIELD

SAVE ORIGINAL FIELD

PUT AAAAA IN 39999

PUT BBBB8 IN 00004

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

C04.

CONSTANTS AND WORK AREA

```

2 010 00499
5 020 00519 00
2 004 00523
2 001 00524
  
```

AAAAABBBBB

3001

□

ROUTINE 2
705 111 40K
WRAP AROUND OF MAC¹
WHEN STEPPED PLUS 1 WITH TMT01

SAVE ORIGINAL FIELD

PUT AAAAA IN 39999

PUT BBBBB IN 00004

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

C03.....00529 SET B 02 0005 00-5
00534 LOD 8 02 0004 00-4
00539 SET B 03 0005 00&5
00544 LOD 8 03 39999 I9I9
00549 SET B 0005
00554 LOD 8 0679
00559 UNL 7 39999 I999
00564 SET B 0005
00569 LOD 8 0684
00574 UNL 7 0004
00579 SET B 01 0010 00/0
00584 RCV U 01 0690 06Z0
00589 TMT 9 01 39995 I9Z5
00594 SET B 0005
00599 LOD 8 0699
00604 CMP 4 0004
00609 SET B 02 0005 00-5
00614 UNL 7 02 0004 00-4
00619 SET B 03 0005 00&5
00624 UNL 7 03 39999 I9I9
00629 TRE L 0669
00634 NOP A 0000
00639 TRA I 01 0669 06W9
00644 SEL 2 0500
00649 WR R 0705
00654 TRA I 03 0664 06F4
00659 TR I 0669
00664 HLT J 3002
00669 TRA I 02 0529 05K9
00674 TR I 0714
  
```

2 010 00684
5 020 00704
2 004 00708
2 001 00709

AAAAABBBBB
3002
□

D05

ROUTINE 3
705 111 40K
WRAP AROUND OF MAC 1
WHEN STEPPED PLUS 5 USING SND

```

D04.....00714 SET B 01 0005 00 5
I 00719 LOD 8 01 0004 00 4
I 00724 SET B 02 0005 00-5
I 00729 LOD 8 02 39999 I9R9
I
I
I 00734 SET B 0005
I 00739 LOD 8 0864
I 00744 UNL 7 39999 I999
I 00749 SET B 0005
I 00754 LOD 8 0869
I 00759 UNL 7 0004
I 00764 SET B 0002
I 00769 RCV U 0879
I 00774 SND / 39999 I999
I 00779 SET B 0005
I 00784 LOD 8 0884
I 00789 CMP 4 0004
I
I
I 00794 SET B 01 0005 00 5
I 00799 UNL 7 01 0004 00 4
I 00804 SET B 02 0005 00-5
I 00809 UNL 7 02 39999 I9R9
I 00814 TRE L 0854
I
I
I 00819 NOP A 0000
I 00824 TRA I 01 0854 08V4
I 00829 SEL 2 0500
I 00834 WR R 0890
I 00839 TRA I 03 0849 08D9
I 00844 TR 1 0854
I 00849 HLT J 3003.....
I 00854 TRA I 02 0714 07J4.....
I 00859 TR 1 0899-----E06
I
I

```

SAVE ORIGINAL FIELDS

PUT AAAAA IN 39999

PUT BBBBB IN 00004

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 010 00869      AAAAABBBBB
2 020 00889
2 004 00893      3003
2 001 00894      □

```

ROUTINE 4
705 111 40K
WRAP AROUND OF MAC 11
WHEN STEPPED PLUS 1 USING
BLM 01

```

E05.....
00899 SET B 02 0005 00-5
00904 LOD 8 02 0004 00-4
00909 SET B 03 0005 00-5
00914 LOD 8 03 3999 1919
00919 SET B 0005
00924 LOD 8 1049
00929 UNL 7 3999 1999
00934 SET B 0005
00939 LOD 8 1054
00944 UNL 7 0004
00949 SET B 01 0010 0070
00954 RCV U 01 3999 1925
00959 BLM $ 01 0010 0070
00964 SET B 0005
00969 LOD 8 0004
00974 CMP 4 1069
00979 SET B 02 0005 00-5
00984 UNL 7 02 0004 00-4
00989 SET B 03 0005 00-5
00994 UNL 7 03 3999 1919
00999 TRE L 1039
01004 NOP A 0000
01009 TRA I 01 1039 10T9
01014 SEL 2 0500
01019 WR R 1075
01024 TRA I 03 1034 10C4
01029 TR 1 1039
01034 HLT J 3004
01039 TRA I 02 0899 08R9
01044 TR 1 1084
  
```

SAVE ORIGINAL FIELDS

LOAD AAAAA IN 39999

LOAD BBBBB IN 00004

PUT BLANKS IN 00004 , 39999

COMPARE WITH BLANKS

PUT FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

2 010 01054
5 020 01074
2 004 01078
2 001 01079

AAAAABBBBB
3004
□

F07

705 111 40K
 ROUTINE 5
 WRAP AROUND OF MAC 11
 WHEN STEPPED PLUS 5 USING BLM

```

F06.....01084 SET B 01 0005 00 5
I 01089 LOD 8 01 0004 00 4
I 01094 SET B 02 0005 00-5
I 01099 LOD 8 02 39999 I9R9
I
I
I 01104 SET B 0005
I 01109 LOD 8 1234
I 01114 UNL 7 39999 I999
I 01119 SET B 0005
I 01124 LOD 8 1239
I 01129 UNL 7 0004
I 01134 SET B 0010
I 01139 RCV U 39999 I999
I 01144 BLM $ 0002
I 01149 SET B 0005
I 01154 LOD 8 0004
I 01159 CMP 4 1254
I
I
I 01164 SET B 01 0005 00 5
I 01169 UNL 7 01 0004 00 4
I 01174 SET B 02 0005 00-5
I 01179 UNL 7 02 39999 I9R9
I 01184 TRE L 1224
I
I
I 01189 NOP A 0000
I 01194 TRA I 01 1224 12S4
I 01199 SEL 2 0500
I 01204 WR R 1275
I 01209 TRA I 03 1219 12A9
I 01214 TR 1 1224
I 01219 HLT J 3005.....
I 01224 TRA I 02 1084 10Q4.....
I 01229 TR 1 1284-----G08
I
I

```

SAVE ORIGINAL FIELDS

PUT AAAAA IN 39999

PUT BBBBB IN 00004

PUT BLANKS IN 00004 & 39999

COMPARE WITH BLANKS

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

2 010 01239
 5 035 01274
 2 004 01278
 2 001 01279

AAAAABBBBB

3005
 □

ROUTINE 6
705 111 40K
WRAP AROUND OF IC USING TSL

```

G07.....01284 SET B 01 0010 00/0
I 01289 LOD 8 01 39999 1929
I 01294 SET B 01 0010
I 01299 LOD 8 1319
I 01304 UNL 7 39999 1999
I 01309 TR 1 39994 1994
I 01314 RCV U 01 1421
I 01319 TR 1 1324 13S4
I 01324 SET B 01 0004
I 01329 LOD 8 1424
I 01334 CMP 4 1429
I 01339 SET B 01 0004
I 01344 LOD 8 1419
I 01349 UNL 7 1424
I 01354 SET B 01 0010 00/0
I 01359 UNL 7 01 39999 1929
I 01364 TRE L 1404
I .....I .....
I .....I .....
I 01369 NOP A 0000
I 01374 TRA I 01 1404 14 4
I 01379 SEL 2 0500
I 01384 WR R 1410
I 01389 TRA I 03 1399 1319
I 01394 TR 1 1404
I 01399 HLT J 3006
I 01404 TRA I 02 1284 12Q4
I 01409 TR 1 1434 H09
I .....I .....

```

SAVE ORIGINAL FIELDS

PICK UP TR 01
UNLOAD IN 39999

ADDRESS PORTION OF RCV AREA
SHOULD BE 0004

COMPARE ADDRESSES

RESET RCV AREA

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 004 01413 3006
2 001 01414
5 010 01424
2 005 01429 00004

```


ROUTINE 7
 705 111 40K
 TEST THAT INDIRECT ADDRESS
 FUNCTIONS AS IN 705 111 80K

```

H08.....01434 TRA I 05 1559 1VV9-
I 01439 TRS O 10 1449 IMM9-
I 01444 TR 1 1464-
I 01449 TRA I 01 1464 14W4-
I 01454 SEL 2 0500
I 01459 WR R 1585
I 01464 SET B 01 0005 00 5.
I 01469 LOD 8 15WU
I 01474 SET B 0005
I 01479 LOD 8 1574
I 01484 UNL 7 1579
I 01489 SET B 01 0005 00 5
I 01494 CMP 4 01 1579 15X9
I 01499 TRE L 1509
I 01504 TR 1 1519
I 01509 LOD 8 156T.....
I 01514 TRS O 10 1554 1NN4-
I 01519 NOP A 0000.....
I 01524 TRA I 01 1554 15V4-
I 01529 SEL 2 0500
I 01534 WR R 1580
I 01539 TRA I 03 1549 15D9-
I 01544 TR 1 1554-
I 01549 HLT J 3007.....
I 01554 TRA I 02 1434 14L4-
I 01559 TR 1 7814-
  
```

BYPASS FORCED ERRORS

INDIRECT ADDRESS
 EFFECTIVE ADDRESS HOLDS 1111

UNLOAD 1111

INDIRECT ADDRESS

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 001 01560
3 001 01564 1569 1569
2 005 01569 11111
2 005 01574 11111
5 005 01579
2 004 01583 3007
2 001 01584
2 004 01588 0900
2 001 01589
  
```

```

J01.....01594 NOP A      2004      □
          01599 SGN T      1590      □
          01604 SEL 2      0500      □
          01609 WR R      1620      □
          01614 HLT J      7052      □
          01619 TR 1      2004-----K11
          01619 TR 1      2004-----K11
  
```

```

2 034 01653
2 016 01669
2 001 01670
  
```

```

CONSTANTS & WORK AREA
705 I/II SW ON,40K SW ON,CHK SW ON
PROGRAM.705 II
  
```

7080 VERSUS 705 11 40K
 COMPATIBILITY TEST
 705 I/II SW ON
 40K SW ON
 ROUTINE 1
 WRAP AROUND OF MAC 1
 WHEN STEPPED MINUS 1
 USING LOAD INSTRUCTION

```

K10.....
I 02004 SET B 01 0005 00 5
I 02009 LOD 8 01 0004 00 4
I 02014 SET B 02 0005 00-5
I 02019 LOD 8 02 39999 19R9
I 02024 SET B 0005
I 02029 LOD 8 2169
I 02034 UNL 7 39999 1999
I 02039 SET B 0005
I 02044 LOD 8 2174
I 02049 UNL 7 0004
I 02054 SET B 0010
I 02059 LOD 8 0004
I 02064 UNL 7 2194
I 02069 SET B 0005
I 02074 LOD 8 2189
I 02079 CMP 4 39999 1999
I
I
I 02084 SET B 02 0005 00-5
I 02089 UNL 7 02 39999 19R9
I 02094 SET B 01 0005 00 5
I 02099 UNL 7 01 0004 00 4
I 02104 TRE L 2154-----
I
I
I 02109 NOP A 0000
I 02114 SEL 2 0911
I 02119 TRS 0 2154-----
I 02124 SEL 2 0500
I 02129 WR R 2195
I 02134 SEL 2 0913
I 02139 TRS 0 2149-----
I 02144 TR 1 2154-----
I 02149 HLT J 2001.....
I 02154 SEL 2 0912.....
+ 02159 TRS 0 2004-----
I 02164 TR 1 2204-----L12
I
I

```

SAVE ORIGINAL FIELD

SAVE ORIGINAL FIELD

PUT AAAAA IN 39999

PUT BBBBB IN 00004

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 010 02174      AAAAABBBBB
5 020 02194 00
2 004 02198      2001
2 001 02199      □

```

ROUTINE 2
7C5 11 4CK
WRAP AROUND OF MAC 1
WHEN STEPPED PLUS 1 WITH TMT01

```
L11.....
I 02204 SET B 02 0005 00-5
I 02209 LOD 8 02 0004 00-4
I 02214 SET B 03 0005 00&5
I 02219 LOD 8 03 39999 I9I9
I
I
I 02224 SET B 0005
I 02229 LOD 8 2369
I 02234 UNL 7 39999 I999
I 02239 SET B 0005
I 02244 LOD 8 2374
I 02249 UNL 7 0004
I 02254 SET B 01 0010 0070
I 02259 RCV U 01 2380 23Y0
I 02264 TMT 9 01 39995 I9Z5
I 02269 SET B 0005
I 02274 LOD 8 2389
I 02279 CMP 4 0004
I
I
I 02284 SET B 02 0005 00-5
I 02289 UNL 7 02 0004 00-4
I 02294 SET B 03 0005 00&5
I 02299 UNL 7 03 39999 I9I9
I 02304 TRE L 2354-----
I
I
I 02309 NOP A 0000
I 02314 SEL 2 0911
I 02319 TRS O 2354-----
I 02324 SEL 2 0500
I 02329 WR R 2395
I 02334 SEL 2 0913
I 02339 TRS O 2349-----
I 02344 TR 1 2354-----
I 02349 HLT J 2002.....
I 02354 SEL 2 0912.....
I 02359 TRS O 2204
I 02364 TR 1 2404-----M13
I
I
```

SAVE ORIGINAL FIELD

PUT AAAAA IN 39999

PUT BBBBB IN 00004

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```
2 010 02374      AAAAAABBBBB
5 020 02394
2 004 02398      2002
2 001 02399      □
```


ROUTINE 4
705 11 40K
WRAP AROUND OF MAC 11
WHEN STEPPED PLUS 1 USING
BLM 01

```

N13.....
I 02604 SET B 02 0005 00-5
I 02609 LOD 8 02 0004 00-4
I 02614 SET B 03 0005 00&5
I 02619 LOD 8 03 39999 1919
I
I
I 02624 SET B 0005
I 02629 LOD 8 2769
I 02634 UNL 7 39999 1999
I 02639 SET B 0005
I 02644 LOD 8 2774
I 02649 UNL 7 0004
I 02654 SET B 01 0010 0070
I 02659 RCV U 01 39995 1925
I 02664 BLM $ 01 0010 0070
I 02669 SET B 0005
I 02674 LOD 8 0004
I 02679 CMP 4 2789
I
I
I 02684 SET B 02 0005 00-5
I 02689 UNL 7 02 0004 00-4
I 02694 SET B 03 0005 00&5
I 02699 UNL 7 03 39999 1919
I 02704 TRE L 2754-----
I
I
I 02709 NOP A 0000
I 02714 SEL 2 0911
I 02719 TRS O 2754-----
I 02724 SEL 2 0500
I 02729 WR R 2795
I 02734 SEL 2 0913
I 02739 TRS O 2749-----
I 02744 TR 1 2754-----
I 02749 HLT J 2004.....
I 02754 SEL 2 0912.....
I 02759 TRS O 2604
I 02764 TR 1 2804-----P15
I

```

SAVE ORIGINAL FIELDS

LOAD AAAAA IN 39999

LOAD BBBBB IN 00004

PUT BLANKS IN 00004 , 39999

COMPARE WITH BLANKS

PUT FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 010 02774      AAAAABBBBB
5 020 02794
2 004 02798      2004
2 001 02799      □

```

705 11 40K

ROUTINE 5

WRAP AROUND OF MAC 11

WHEN STEPPED PLUS 5 USING BLM

```

P14.....02804 SET B 01 0005 00 5
I 02809 LOD 8 01 0004 00 4
I 02814 SET B 02 0005 00-5
I 02819 LOD 8 02 39999 I9R9
I
I
I
I
I 02824 SET B 0005
I 02829 LOD 8 2969
I 02834 UNL 7 39999 I999
I 02839 SET B 0005
I 02844 LOD 8 2974
I 02849 UNL 7 0004
I 02854 SET B 0010
I 02859 RCV U 39999 I999
I 02864 BLM $ 0002
I 02869 SET B 0005
I 02874 LOD 8 0004
I 02879 CMP 4 2989
I
I
I
I
I 02884 SET B 01 0005 00 5
I 02889 UNL 7 01 0004 00 4
I 02894 SET B 02 0005 00-5
I 02899 UNL 7 02 39999 I9R9
I 02904 TRE L 2954-----
I
I
I
I
I 02909 NOP A 0000
I 02914 SEL 2 0911
I 02919 TRS O 2954-----
I 02924 SEL 2 0500
I 02929 WR R 3010
I 02934 SEL 2 0913
I 02939 TRS O 2949-----
I 02944 TR 1 2954-----
I 02949 HLT J 2005.....
I 02954 SEL 2 0912.....
I 02959 TRS O 2804
I 02964 TR 1 3019-----Q16
I
I
I
I

```

SAVE ORIGINAL FIELDS

PUT AAAAA IN 39999

PUT BBBBB IN 00004

PUT BLANKS IN 00004 , 39999

COMPARE WITH BLANKS

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 010 02974
5 035 03009
2 004 03013
2 001 03014

```

AAAAABBBBBB

2005

□

ROUTINE 6
705 11 40K
WRAP AROUND OF IC

CHECK THAT MACHINE
IS 40K

SAVE ORIGINAL FIELD

PUT NOP IN 0004 & 39999

CHANGE NOP TO TRANSFER
AT 0004

PUT FIELD BACK

ERROR ROUTINE

CONSTANTS & WORK AREA

```

Q15.....03019 SET B 0004
I 03024 LOD 8 000M
I 03029 CMP 4 0004
I 03034 TRE L 3044-----
I 03039 TR 1 3119-----
I 03044 CMP 4 3054.....
I 03049 TRE L 3119-----
I 03054 NOP A 3109
I 03059 SET B 01 0010 00/0
I 03064 LOD 8 01 0004 00 4
I 03069 SET B 0005
I 03074 LOD 8 3054
I 03079 UNL 7 0004
I 03084 UNL 7 39999 1999
I 03089 SET B 0001
I 03094 LOD 8 3179
I 03099 UNL 7 0000
I 03104 TR 1 39999 1999
I 03109 UNL 7 01 0004 00 4
I 03114 TR 1 3164-----
I 03119 NOP A 0000.....
I 03124 SEL 2 0911
I 03129 TRS 0 3164-----
I 03134 SEL 2 0500
I 03139 WR R 3180
I 03144 SEL 2 0913
I 03149 TRS 0 3159-----
I 03154 TR 1 3164-----
I 03159 HLT J 2006.....
I 03164 SEL 2 0912.....
+ 03169 TRS 0 3019
  03174 TR 1 3189-----R17
  
```

```

2 005 03179 00001
2 004 03183 2006
2 001 03184
  
```


705 11 40K

ROUTINE 7

CHECK THAT ZONES OVER UNIT
POSITION ARE IGNORED IN 705 11
AND A BIT DOES NOT INDICATE
INDIRECT ADDRESS

```

R16.....03189 SET B 02 0005 00-5
I 03194 LOD 8 02 335Z 33NZ
I 03199 SET B 0005
I 03204 LOD 8 3364
I 03209 UNL 7 3369
I 03214 SET B 02 0005 00-5
I 03219 CMP 4 02 3369 3309
I 03224 TRE L 3299-----
I 03229 SET B 02 0005 00-5
I 03234 LOD 8 02 337D 33PD
I 03239 SET B 0005
I 03244 LOD 8 3379
I 03249 UNL 7 3384
I 03254 SET B 02 0005 00-5
I 03259 CMP 4 02 3384 33Q4
I 03264 TRE L 3274-----
I 03269 TR 1 3299-----
I 03274 SET B 0001.....
I 03279 LOD 8 337T
I 03284 SEL 2 0900
I 03289 TRS 0 3299-----
I 03294 TR 1 3344-----
I 03299 NOP A 0000.....
I 03304 SEL 2 0911
I 03309 TRS 0 3344-----
I 03314 SEL 2 0500
I 03319 WR R 3385
I 03324 SEL 2 0913
I 03329 TRS 0 3339-----
I 03334 TR 1 3344-----
I 03339 HLT J 2007.....
I 03344 SEL 2 0912.....
I 03349 TRS 0 3189
I 03354 TR 1 3394-----S18

```

INDIRECT ADDRESS

IF A BIT IS IGNORED RESULT OF
COMPARISON SHOULD BE UNEQUAL

INDIRECT ADDRESS

IF ZONES ARE IGNORED RESULT
OF COMPARISON SHOULD BE EQUAL

INDIRECT ADDRESS

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 001 03355
3 03359 3139 3189
2 005 03364 B00-5
5 005 03369
2 001 03370
3 03374 3299 3299
2 001 03375
3 03379 3299 3299
5 005 03384
2 004 03388 2007
2 001 03389

```

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8CU31
705 11 40K
ROUTINE 8
CHECK THAT IN 705 11 ADDITION
OF SINGLE MINUS ZERO STRIPS
ZONES OFF STORAGE

```
S17.....03394 SET B      0005
I 03399 LOD 8      3484
I 03404 ADD G      3489
I 03409 SET B      0005
I 03414 CMP 4      3494
I 03419 TRE L      3469-----
I
I
I 03424 NOP A      0000
I 03429 SEL 2      0911
I 03434 TRS 0      3469-----
I 03439 SEL 2      0500
I 03444 WR R      3495
I 03449 SEL 2      0913
I 03454 TRS 0      3464-----
I 03459 TR 1      3469-----
I 03464 HLT J      2008.....
I 03469 SEL 2      0912.....
+ 03474 TRS 0      3394
  03479 TR 1      3504-----T19
I
```

PUT ABCDE IN STORAGE
ADD 234B- FROM MEMORY
COMPARE RESULT WITH 12345

ERROR ROUTINE

2	005	03484	ABCDE
2	005	03489	234B-
2	005	03494	12345
2	004	03498	2008
2	001	03499	

CONSTANTS AND WORK AREA

705 11 40K

ROUTINE 9

CHECK THAT TR01 IN 705 11 DOES
NOT STORE LOCATION

```

T18.....03504 SET B 0004
I 03509 LOD 8 3634
I 03514 UNL 7 3639
I 03519 RCV U 3636
I 03524 TR 1 01 3529 35S9
I 03529 SET B 0004
I 03534 LOD 8 3629
I 03539 CMP 4 3639
I 03544 TRE L 3569
I 03549 SET B 0005
I 03554 LOD 8 3639
I 03559 CMP 4 3634
I 03564 TRE L 3614
I
I
I 03569 NOP A 0000
I 03574 SEL 2 0911
I 03579 TRS 0 3614
I 03584 SEL 2 0500
I 03589 WR R 3640
I 03594 SEL 2 0913
I 03599 TRS 0 3609
I 03604 TR 1 3614
I 03609 HLT J 2009
I 03614 SEL 2 0912
I 03619 TRS 0 3504
I 03624 TR 1 3654
I
I

```

IF LOCATION IS STORED THE
BLANK AREA SHOULD RECEIVE AN
ADDRESS 5 HIGHER THAN TR 01

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 001 03625
3 010 03629
5 010 03639
2 004 03643
2 001 03644
2 005 03649

```

3529 3529

2009
□

U20

705 11 40K
ROUTINE 10
CHECK THAT IN 705 11 TRA 01-06
WILL CAUSE A TRANSFER IF ANY
TRIGGER IS ON ALSO IF THE
APPROPRIATE ALTERATION
SWITCH IS PREVIOUSLY SELECTED

U19.....03654 TRA I 3659-----
V21.....03659 SEL 2 0915.....
03664 TRS O 3934-----Y21
03669 SEL 2 0901
03674 TRS O 3684-----
03679 TR 1 3704-----
03684 SEL 2 0911.....
03689 TRS O 3704-----
03694 SEL 2 0500
03699 WR R 3940
I

BYPASS FORCED ERRORS

I
03704 TRA I 01 3879 38X9-----W21
03709 TRA I 02 3879 38P9-----W21
03714 TRA I 03 3879 38G9-----W21
03719 TRA I 04 3879 3Y79-----W21
03724 TRA I 05 3879 3YX9-----W21
03729 TRA I 06 3879 3YP9-----W21
I

TRA 01-06 ARE NOPS IN 705 11
IF ANY TRIGGER IS OFF
IF TR IS EFFECTED WITH ANY
TRIGGER OFF ERROR IS INDICATED

I
03734 SB % 08 3939 3R39
03739 SB % 09 3939 3RT9
03744 TRA I 01 3754 37V4-----
03749 TR 1 3864-----
03754 SET B 0001.....
03759 SB % 08 3939 3R39
03764 SB % 09 3939 3RT9
03769 TRA I 02 3779 37P9-----
03774 TR 1 3864-----
03779 SB % 08 3939 3R39
03784 SB % 09 3939 3RT9
03789 TRA I 03 3799 37I9-----
03794 TR 1 3864-----
03799 SB % 08 3939 3R39
03804 SB % 09 3939 3RT9
03809 TRA I 04 3819 3Y19-----
03814 TR 1 3864-----
03819 SB % 08 3939 3R39
03824 SB % 09 3939 3RT9
03829 TRA I 05 3839 3YT9-----
03834 TR 1 3864-----
03839 SB % 08 3939 3R39
03844 SB % 09 3939 3RT9
03849 SEL 2 0901
03854 TRS O 3859-----
03859 TRA I 06 3924 3ZK4-----X21
03864 TRA I 3869-----
03869 SEL 2 0901.....
03874 TRS O 3879-----W21
I

REDUNDANCY CREATED

LAST REDUNDANCY CREATED
LAST REDUNDANCY CORRECTED

NEXT PAGE

FROM PREVIOUS PAGE

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8CU31

ERROR ROUTINE

```

W20.....03879 NOP A 0000
           03884 SEL 2 0911
           03889 TRS 0 3924-----
           03894 SEL 2 0500
           03899 WR R 3945
           03904 SEL 2 0913
           03909 TRS 0 3919-----
           03914 TR 1 3924-----
           03919 HLT J 2010.....
X20.....03924 SEL 2 0912.....
           03929 TRS 0 3659-----
Y20.....03934 TR 1 3954-----
           03939 TR 1 3954-----

```

CONSTANTS AND WORK AREA

```

2 005 03939 11111
2 004 03943 0901
2 001 03944
2 004 03948 2010
2 001 03949

```

705 11 40K
ROUTINE 11
CHECK THAT IN 705 11 TRA 01-06
TURNS OFF ANY TRIGGER IF IT IS
ON

```

Z21.....03954 SEL 2 0915
I 03959 TRS 0 4239-----
I 03964 SEL 2 0901-----
I 03969 TRS 0 3979-----
I 03974 TR 1 3999-----
I 03979 SEL 2 0911.....
I 03984 TRS 0 3999-----
I 03989 SEL 2 0500-----
I 03994 WR R 4245-----
I
I 03999 SET B 0001.....
I 04004 SB % 08 4244 4K44
I 04009 SB % 09 4244 4KU4
I 04014 TRA I 01 4024 40S4-----
I 04019 TR 1 4169-----
I 04024 TRA I 4169-----
I 04029 SB % 08 4244 4K44
I 04034 SB % 09 4244 4KU4
I 04039 TRA I 02 4049 40M9-----
I 04044 TR 1 4169-----
I 04049 TRA I 4169-----
I 04054 SB % 08 4244 4K44
I 04059 SB % 09 4244 4KU4
I 04064 TRA I 03 4074 40G4-----
I 04069 TR 1 4169-----
I 04074 TRA I 4169-----
I 04079 SB % 08 4244 4K44
I 04084 SB % 09 4244 4KU4
I 04089 TRA I 04 4099 4 99-----
I 04094 TR 1 4169-----
I 04099 TRA I 4169-----
I 04104 SB % 08 4244 4K44
I 04109 SB % 09 4244 4KU4
I 04114 TRA I 05 4124 4/S4-----
I 04119 TR 1 4169-----
I 04124 TRA I 4169-----
I 04129 SB % 08 4244 4K44
I 04134 SB % 09 4244 4KU4
I 04139 TRA I 06 4149 4/M9-----
I 04144 TR 1 4169-----
I 04149 TRA I 4169-----
I 04154 SEL 2 0901-----
I 04159 TRS 0 4164-----
I 04164 TR 1 4229-----
I 04169 TRA I 4174-----
I 04174 SEL 2 0901-----
I 04179 TRS 0 4184-----
I
I 04184 NOP A 0000.....
I 04189 SEL 2 0911-----
I 04194 TRS 0 4229-----
I 04199 SEL 2 0500-----
I 04204 WR R 4250-----
I 04209 SEL 2 0913-----
I 04214 TRS 0 4224-----
I 04219 TR 1 4229-----
I 04224 HLT J 2011.....
I 04229 SEL 2 0912.....
I 04234 TRS 0 3954-----
I 04239 TR 1 4259-----AA24

```

BYPASS FORCED ERRORS

CREATED REDUNDANCY TO BRING U
ANY TRIGGER

TURN OFF ANY TRIGGER

ERROR ROUTINE

CONSTANTS AND WORK AREA

2	005	04244
2	004	04248
2	001	04249
2	004	04253
2	001	04254

BBBBB
0901
□
2011
□

705 11 40K
ROUTINE 12
CHECK THAT IN 705 11 ON TRS 10
11,14,15 NO TRANSFER TAKES
PLACE IF APPROPRIATE CHECKS
ARE NOT PREVIOUSLY SELECTED
AND I/O IS NOT ON

AA22.....

```

04259 SEL 2 0915
04264 TRS 0 4544-----
04269 SEL 2 0900
04274 TRS 0 4279-----
04279 SEL 2 0901.....
04284 TRS 0 4289-----
04289 SEL 2 0904.....
04294 TRS 0 4299-----
04299 SEL 2 0905.....
04304 TRS 0 4314-----
04309 TR 1 4334-----
04314 SEL 2 0911.....
04319 TRS 0 4334-----
04324 SEL 2 0500
04329 WR R 4550

```

BYPASS FORCED ERRORS

```

04334 TR 1 4340.....
04339 TRS 0 10 4444 4MM4-----
04344 TRA I 10 4349-----
04349 SB % 08 4546 4N46.....
04354 SB % 09 4546 4NU6.....
04359 TRS 0 11 4444 4MD4-----
04364 TRA I 11 4369-----
04369 SET B 0001.....
04374 LOD 8 4580
04379 ADD G 4584
04384 TRS 0 14 4444 4DM4-----
04389 TRA I 14 4394-----
04394 SEL 2 0500.....
04399 RAD H 4589
04404 TRS 0 15 4444 4DD4-----
04409 EEM 3 14 0000 0&-0
04414 TRS 0 10 4419 4MJ9-----
04419 TRS 0 11 4424 4MB4-----
04424 TRS 0 14 4429 4DK9-----
04429 TRS 0 15 4434 4DC4-----
04434 LEM 3 15 0000 0&0
04439 TRA I 4534
04444 SEL 2 0900.....
04449 TRS 0 4454-----
04454 SEL 2 0901.....
04459 TRS 0 4464-----
04464 SEL 2 0904.....
04469 TRS 0 4474-----
04474 SEL 2 0905.....
04479 TRS 0 4484-----
04484 TRA I 4489-----

```

4330 000 11-7-61

901 CHECK ON

904 CHECK ON

905 CHECK ON

```

04489 NOP A 0000.....
04494 SEL 2 0911
04499 TRS 0 4534-----
04504 SEL 2 0500
04509 WR R 4575
04514 SEL 2 0913
04519 TRS 0 4529-----
04524 TR 1 4534-----
04529 HLT J 2012.....
04534 SEL 2 0912.....
04539 TRS 0 4259
04544 TR 1 4594-----

```

ERROR ROUTINE

-AB26

CONSTANTS AND WORK AREA

2 005 04549
2 024 04573
2 001 04574
2 004 04578
2 001 04579
2 010 04589

333B1
900 OR 901 OR 904 OR 905
2012
900AA00000

705 11 40K
ROUTINE 13
CHECK THAT IN 705 11 ON TRS 12
AND 13 NO TRANSFER TAKES
PLACE IF APPROPRIATE CHECKS
ARE NOT PREVIOUSLY SELECTED
AND I/O IS NOT ON

```

AB24.....04594 SEL 2 0915
I 04599 TRS 0 4819-----
I 04604 SEL 2 0902
I 04609 TRS 0 4614-----
I 04614 SEL 2 0903.....
I 04619 TRS 0 4629-----
I 04624 TR 1 4649-----
I 04629 SEL 2 0911.....
I 04634 TRS 0 4649-----
I 04639 SEL 2 0500
I 04644 WR R 4834
I .....
I 04649 EEM 3 14 0000 06-0.....
I 04654 SPC , 3700
I 04659 SET B 0008
I 04664 LOD 8 4829
I 04669 SET B 0032
I 04674 LIP , 15 0009 06&9
I 04679 SPC , 3700
I 04684 SET B 0008
I 04689 LOD 8 4859
I 04694 SET B 0032
I 04699 SPC , 0000
I 04704 LEM 3 15 0000 06&0
I 04709 TRS 0 12 4744 4G44-----
I 04714 TRS 0 13 4744 4GU4-----
I 04719 SEL 2 0902
I 04724 TRS 0 4734-----
I 04729 TR 1 4744-----
I 04734 SEL 2 0903.....
I 04739 TRS 0 4809-----
I 04744 EEM 3 14 0000 06-0.....
I 04749 TRS 0 12 4754 4G54-----
I 04754 TRS 0 13 4759 4GV9-----
I 04759 LEM 3 15 0000 06&0.....
I .....
I 04764 NOP A 0000
I 04769 SEL 2 0911
I 04774 TRS 0 4809-----
I 04779 SEL 2 0500
I 04784 WR R 4845
I 04789 SEL 2 0913
I 04794 TRS 0 4804-----
I 04799 TR 1 4809-----
I 04804 HLT J 2013.....
I 04809 SEL 2 0912.....
I 04814 TRS 0 4594
I 04819 TR 1 7814-----AW44
I .....

```

BYPASS FORCED ERRORS

ENTER 7080 MODE TO BRING UP
902 AND 903 TRIGGERS

SET UP CASU 15

BRING UP 902 AND 903
CLEAR STORAGE

RESET SPC
REENTER 705 11 MODE

ENTER 7080 MODE
TURN OFF 903
REENTER 705 11 MODE

ERROR ROUTINE

```

2 006 04825
3 04829 4679 4679
2 005 04834
2 009 04843
2 001 04844
2 004 04848
2 001 04849
2 010 04859

```

-&D-

A
902 OR903
2013
0000000000

CONSTANTS & WORK AREA

```
AC01.....04864 NOP A 4949
04869 SGN T 4860
04874 SEL 2 0500
04879 WR R 4890
04884 HLT J 7051
04889 TR 1 4949-----AD28
```

2 035 04924
2 015 04939
2 001 04940

CONSTANTS & WORK AREA
705 I/II SW ON, 40K SW OFF, CHK SW ON
PROGRAM. 705 I

7080 VERSUS 705 1 20K
 COMPATIBILITY TEST
 705 I/II ON
 40K SW OFF
 ROUTINE 1
 WRAP AROUND OF MAC 1
 WHEN STEPPED MINUS 1
 USING LOAD INSTRUCTION

```

AD27.....04949 SET B 01 0005 00 5
I 04954 LOD 8 01 0004 00 4
I 04959 SET B 02 0005 00-5
I 04964 LOD 8 02 19999 Z9R9
I 04969 SET B 0005
I 04974 LOD 8 5114
I 04979 UNL 7 19999 Z999
I 04984 SET B 0005
I 04989 LOD 8 5119
I 04994 UNL 7 0004
I 04999 SET B 0010
I 05004 LOD 8 0004
I 05009 UNL 7 5139
I 05014 SET B 0005
I 05019 LOD 8 5134
I 05024 CMP 4 19999 Z999
I
I
I 05029 SET B 02 0005 00-5
I 05034 UNL 7 02 19999 Z9R9
I 05039 SET B 01 0005 00 5
I 05044 UNL 7 01 0004 00 4
I 05049 TRE L 5099-----
I
I
I 05054 NOP A 0000
I 05059 SEL 2 0911
I 05064 TRS O 5099-----
I 05069 SEL 2 0500
I 05074 WR R 5140
I 05079 SEL 2 0913
I 05084 TRS O 5094-----
I 05089 TR 1 5099-----
I 05094 HLT J 1001.....
I 05099 SEL 2 0912.....
I 05104 TRS O 4949
I 05109 TR 1 5149-----AE29
I

```

SAVE ORIGINAL FIELD

SAVE ORIGINAL FIELD

PUT AAAAA IN 19999

PUT BBBBB IN 00004

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 010 05119      AAAAABBBBB
5 020 05139 00
2 004 05143
2 001 05144      1001

```

CONSTANTS AND WORK AREA

ROUTINE 3
705 1 20K
WRAP AROUND OF MAC 1
WHEN STEPPED PLUS 5 USING SND

```
AF29.....05349 SET B 01 0005 00 5
05354 LOD 8 01 0004 00 4
05359 SET B 02 0005 00-5
05364 LOD 8 02 19999 Z9R9
05369 SET B 0005
05374 LOD 8 5514
05379 UNL 7 19999 Z999
05384 SET B 0005
05389 LOD 8 5519
05394 UNL 7 0004
05399 SET B 0002
05404 RCV U 5529
05409 SND / 19999 Z999
05414 SET B 0005
05419 LOD 8 5534
05424 CMP 4 0004
05429 SET B 01 0005 00 5
05434 UNL 7 01 0004 00 4
05439 SET B 02 0005 00-5
05444 UNL 7 02 19999 Z9R9
05449 TRE L 5499-----
05454 NOP A 0000
05459 SEL 2 0911
05464 TRS 0 5499-----
05469 SEL 2 0500
05474 WR R 5540
05479 SEL 2 0913
05484 TRS 0 5494-----
05489 TR 1 5499-----
05494 HLT J 1003.....
05499 SEL 2 0912.....
-05504 TRS 0 5349
05509 TR 1 5549-----AG31
```

SAVE ORIGINAL FIELDS

PUT AAAAA IN 19999

PUT BBBBB IN 00004

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```
2 010 05519      AAAAAABBBBB
5 020 05539
2 004 05543      1003
2 001 05544      □
```

ROUTINE 4
 705 1 20K
 WRAP AROUND OF MAC-11
 WHEN STEPPED PLUS 1 USING
 BLM 01

AG30.....

```

05549 SET B 02 0005 00-5
05554 LOD 8 02 0004 00-4
05559 SET B 03 0005 00-5
05564 LOD 8 03 19999 Z919
05569 SET B 0005
05574 LOD 8 5714
05579 UNL 7 19999 Z999
05584 SET B 0005
05589 LOD 8 5719
05594 UNL 7 0004
05599 SET B 01 0010 00/0
05604 RCV U 01 19995 Z925
05609 BLM $ 01 0010 00/0
05614 SET B 0005
05619 LOD 8 0004
05624 CMP 4 5734
05629 SET B 02 0005 00-5
05634 UNL 7 02 0004 00-4
05639 SET B 03 0005 00-5
05644 UNL 7 03 19999 Z919
05649 TRE L 5699-----
05654 NOP A 0000
05659 SEL 2 0911
05664 TRS O 5699-----
05669 SEL 2 0500
05674 WR R 5740
05679 SEL 2 0913
05684 TRS O 5694-----
05689 TR 1 5699-----
05694 HLT J 1004.....
05699 SEL 2 0912.....
05704 TRS O 5549
05709 TR 1 5749-----AH32

```

SAVE ORIGINAL FIELDS

LOAD AAAAA IN 19999

LOAD BBBBB IN 00004

PUT BLANKS IN 00004 , 19999

COMPARE WITH BLANKS

PUT FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```

2 010 05719
5 020 05739
2 004 05743
2 001 05744

```

AAAAABBBBB

```

1004

```

705 1 20K
ROUTINE 5
WRAP AROUND OF MAC 11
WHEN STEPPED PLUS 5 USING BLM

```
AH31.....
I 05749 SET B 01 0005 00 5
I 05754 LOD 8 01 0004 00 4
I 05759 SET B 02 0005 00-5
I 05764 LOD 8 02 19999 Z9R9
I
I
I 05769 SET B 0005
I 05774 LOD 8 5914
I 05779 UNL 7 19999 Z999
I 05784 SET B 0005
I 05789 LOD 8 5919
I 05794 UNL 7 0004
I 05799 SET B 0010
I 05804 RCV U 19999 Z999
I 05809 BLM $ 0002
I 05814 SET B 0005
I 05819 LOD 8 0004
I 05824 CMP 4 5934
I
I
I 05829 SET B 01 0005 00 5
I 05834 UNL 7 01 0004 00 4
I 05839 SET B 02 0005 00-5
I 05844 UNL 7 02 19999 Z9R9
I 05849 TRE L 5899-----
I
I
I 05854 NOP A 0000
I 05859 SEL 2 0911
I 05864 TRS 0 5899-----
I 05869 SEL 2 0500
I 05874 WR R 5955
I 05879 SEL 2 0913
I 05884 TRS 0 5894-----
I 05889 TR 1 5899-----
I 05894 HLT J 1005.....
I 05899 SEL 2 0912.....
I 05904 TRS 0 5749
I 05909 TR 1 5969-----AJ33
I
```

SAVE ORIGINAL FIELDS

PUT AAAAA IN 19999

PUT BBBBB IN 00004

PUT BLANKS IN 00004 , 19999

COMPARE WITH BLANKS

PUT ORIGINAL FIELDS BACK

ERROR ROUTINE

CONSTANTS AND WORK AREA

```
2 010 05919      AAAAAABBBBB
5 035 05954
2 004 05958
2 001 05959      1005
                    □
```


ROUTINE 6
705 1 20K
WRAP AROUND OF IC

```

AJ32.....
05964 NOP A 0000
05969 SET B 0004
05974 LOD 8 0004
05979 CMP 4 20004 -004
05984 TRE L 5994-----
05989 TR 1 6069-----
05994 CMP 4 6004.....
05999 TRE L 6069-----
06004 NOP A 6059
06009 SET B 01 0010 00/0
06014 LOD 8 01 0004 00 4
06019 SET B 0005
06024 LOD 8 6004
06029 UNL 7 0004
06034 UNL 7 19999 Z999
06039 SET B 0001
06044 LOD 8 6129
06049 UNL 7 0000
06054 TR 1 19999 Z999
06059 UNL 7 01 0004 00 4
06064 TR 1 6114-----
06069 NOP A 0000.....
06074 SEL 2 0911-----
06079 TRS 0 6114-----
06084 SEL 2 0500
06089 WR R 6130
06094 SEL 2 0913
06099 TRS 0 6109-----
06104 TR 1 6114-----
06109 HLT J 1006.....
06114 SEL 2 0912.....
06119 TRS 0 5969
06124 TR 1 6139-----AK34

```

CHECK THAT MACHINE
IS 20K

SAVE ORIGINAL FIELD

PUT NOP IN 0004 & 19999

CHANGE NOP TO TRANSFER
AT 0004

PUT FIELD BACK

ERROR ROUTINE

CONSTANTS & WORK AREA

2 005 06129
2 004 06133
2 001 06134

00001
1006
□

705 1 20K
7080 VERSUS 705 1 20K
COMPATIBILITY TEST
ROUTINE 7
CHECK THAT ZONES OVER UNIT
POSITION ARE IGNORED IN 705 1

```
AK33.....06139 SET B 02 0005 00-5
I 06144 LOD 8 02 630Z 63-Z
I 06149 SET B 0005
I 06154 LOD 8 6314
I 06159 UNL 7 6319
I 06164 SET B 02 0005 00-5
I 06169 CMP 4 02 6319 63J9
I 06174 TRE L 6249-----
I 06179 SET B 02 0005 00-5
I 06184 LOD 8 02 632D 63KD
I 06189 SET B 0005
I 06194 LOD 8 6329
I 06199 UNL 7 6334
I 06204 SET B 02 0005 00-5
I 06209 CMP 4 02 6334 63L4
I 06214 TRE L 6224-----
I 06219 TR 1 6249-----
I 06224 SET B 0001.....
I 06229 LOD 8 632T
I 06234 SEL 2 0900
I 06239 TRS 0 6249-----
I 06244 TR 1 6294-----
I.....
I.....
I 06249 NOP A 0000.....
I 06254 SEL 2 0911
I 06259 TRS 0 6294-----
I 06264 SEL 2 0500
I 06269 WR R 6335
I 06274 SEL 2 0913
I 06279 TRS 0 6289-----
I 06284 TR 1 6294-----
I 06289 HLT J 1007.....
I 06294 SEL 2 0912.....
I 06299 TRS 0 6139
I 06304 TR 1 6344-----AL35
I.....
```

INDIRECT ADDRESS

IF A BIT IS IGNORED RESULT OF
COMPARISON SHOULD BE UNEQUAL

INDIRECT ADDRESS

IF ZONES ARE IGNORED RESULT
OF COMPARISON SHOULD BE EQUAL

INDIRECT ADDRESS

ERROR ROUTINE

CONSTANTS AND WORK AREA

```
2 001 06305
3 06309 6139 6139
2 005 06314 B00-5
5 005 06319
2 001 06320
3 06324 6249 6249
2 001 06325
3 06329 6249 6249
5 005 06334
2 004 06338 1007
2 001 06339
```

705 1 20K

ROUTINE 8

CHECK THAT IN 705 1 ADDITION
OF SINGLE MINUS ZERO STRIPS
ZONES OFF STORAGE

```

AL34.....06344 SET B      0005
            06349 LOD  8      6434
            06354 ADD  G      6439
            06359 SET  B      0005
            06364 CMP  4      6444
            06369 TRE  L      6419-----
            06374 NOP  A      0000
            06379 SEL  2      0911
            06384 TRS  0      6419-----
            06389 SEL  2      0500
            06394 WR   R      6445
            06399 SEL  2      0913
            06404 TRS  0      6414-----
            06409 TR   1      6419-----
            06414 HLT  J      1008.....
            06419 SEL  2      0912.....
            06424 TRS  0      6344
            06429 TR   1      6454-----AM36
  
```

PUT ABCDE IN STORAGE
ADD 234B- FROM MEMORY

COMPARE RESULT WITH 12345

ERROR ROUTINE

```

2 005 06434
2 005 06439
2 005 06444
2 004 06448
2 001 06449
  
```

```

ABCDE
234B-
12345
1008
  
```

CONSTANTS AND WORK AREA

705 1 20K
ROUTINE 9
CHECK THAT TR01 IN 705 1 DOES
NOT STORE LOCATION

AM35.....
I 06454 SET B 0004
I 06459 LOD 8 6584
I 06464 UNL 7 6589
I 06469 RCV U 6586
I 06474 TR 1 01 6479 64X9
I 06479 SET B 0004
I 06484 LOD 8 6579
I 06489 CMP 4 6589
I 06494 TRE L 6519
I 06499 SET B 0005
I 06504 LOD 8 6589
I 06509 CMP 4 6584
I 06514 TRE L 6564
I 06519 NOP A 0000
I 06524 SEL 2 0911
I 06529 TRS O 6564
I 06534 SEL 2 0500
I 06539 WR R 6590
I 06544 SEL 2 0913
I 06549 TRS O 6559
I 06554 TR 1 6564
I 06559 HLT J 1009
I 06564 SEL 2 0912
I 06569 TRS O 6454
I 06574 TR 1 6604
AN37

IF LOCATION IS STORED THE
BLANK AREA SHOULD RECEIVE AN
ADDRESS 5 HIGHER THAN TR 01

ERROR ROUTINE

CONSTANTS AND WORK AREA

2 001 06575
3 003 06579 6479 6479
5 010 06589
2 004 06593 1009
2 001 06594
2 005 06599

705 1 20K

ROUTINE 10

CHECK THAT IN 705 1 TRA 01-06

WILL CAUSE A TRANSFER IF ANY

TRIGGER IS ON ALSO IF THE

APPROPRIATE ALTERATION

SWITCH IS PREVIOUSLY SELECTED

AN36.....06604 TRA I 6609-----
AP38.....06609 SEL 2 0915.....
06614 TRS 0 6884-----AS38
06619 SEL 2 0901-----
06624 TRS 0 6634-----
06629 TR 1 6654-----
06634 SEL 2 0911.....
06639 TRS 0 6654-----
06644 SEL 2 0500-----
06649 WR R 6890-----

BYPASS FORCED ERRORS

06654 TRA I 01 6829 68S9-----AQ38
06659 TRA I 02 6829 68K9-----AQ38
06664 TRA I 03 6829 68B9-----AQ38
06669 TRA I 04 6829 6Y29-----AQ38
06674 TRA I 05 6829 6YS9-----AQ38
06679 TRA I 06 6829 6YK9-----AQ38

TRA 01-06 ARE NOPS IN 705 1
IF ANY TRIGGER IS OFF
IF TR IS EFFECTED WITH ANY
TRIGGER OFF ERROR IS INDICATED

06684 SB % 08 6889 6Q89
06689 SB % 09 6889 6QY9
06694 TRA I 01 6704 67 4-----
06699 TR 1 6814-----
06704 SET B 0001.....
06709 SB % 08 6889 6Q89
06714 SB % 09 6889 6QY9
06719 TRA I 02 6729 67K9-----
06724 TR 1 6814-----
06729 SB % 08 6889 6Q89
06734 SB % 09 6889 6QY9
06739 TRA I 03 6749 67D9-----
06744 TR 1 6814-----
06749 SB % 08 6889 6Q89
06754 SB % 09 6889 6QY9
06759 TRA I 04 6769 6X69-----
06764 TR 1 6814-----
06769 SB % 08 6889 6Q89
06774 SB % 09 6889 6QY9
06779 TRA I 05 6789 6XY9-----
06784 TR 1 6814-----
06789 SB % 08 6889 6Q89
06794 SB % 09 6889 6QY9
06799 SEL 2 0901-----
06804 TRS 0 6809-----
06809 TRA I 06 6874 6YP4-----AR38
06814 TRA I 6819-----
06819 SEL 2 0901.....
06824 TRS 0 6829-----AQ38

REDUNDANCY CREATED

LAST REDUNDANCY CREATED
LAST REDUNDANCY CORRECTED

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```

AQ37.....06829 NOP A 0000
           06834 SEL 2 0911
           06839 TRS 0 6874-----
           06844 SEL 2 0500
           06849 WR R 6895
           06854 SEL 2 0913
           06859 TRS 0 6869-----
           06864 TR 1 6874-----
           06869 HLT J 1010.....
AR37.....06874 SEL 2 0912.....
           06879 TRS 0 6609-----
AS37.....06884 TR 1 6904-----
           06889
  
```

ERROR ROUTINE

AP37
AT39

CONSTANTS AND WORK AREA

```

2 005 06889 11111
2 004 06893 0901
2 001 06894
2 004 06898 1010
2 001 06899
  
```

705 1 20K

ROUTINE 11

CHECK THAT IN 705 1 TRA 01-06
TURNS OFF ANY TRIGGER IF IT IS
ON

AT38.....

```

06904 SEL 2 0915
06909 TRS O 7189-----
06914 SEL 2 0901
06919 TRS O 6929-----
06924 TR 1 6949-----
06929 SEL 2 0911.....
06934 TRS O 6949-----
06939 SEL 2 0500
06944 WR R 7195

```

```

06949 SET B 0001.....
06954 SB % 08 7194 7J94
06959 SB % 09 7194 7JZ4
06964 TRA I 01 6974 69X4---
06969 TR 1 7119-----
06974 TRA I 7119-----
06979 SB % 08 7194 7J94
06984 SB % 09 7194 7JZ4
06989 TRA I 02 6999 69R9---
06994 TR 1 7119-----
06999 TRA I 7119-----
07004 SB % 08 7194 7J94
07009 SB % 09 7194 7JZ4
07014 TRA I 03 7024 70B4---
07019 TR 1 7119-----
07024 TRA I 7119-----
07029 SB % 08 7194 7J94
07034 SB % 09 7194 7JZ4
07039 TRA I 04 7049 7 49---
07044 TR 1 7119-----
07049 TRA I 7119-----
07054 SB % 08 7194 7J94
07059 SB % 09 7194 7JZ4
07064 TRA I 05 7074 7 X4---
07069 TR 1 7119-----
07074 TRA I 7119-----
07079 SB % 08 7194 7J94
07084 SB % 09 7194 7JZ4
07089 TRA I 06 7099 7 R9---
07094 TR 1 7119-----
07099 TRA I 7119-----
07104 SEL 2 0901
07109 TRS O 7114-----
07114 TR 1 7179.....
07119 TRA I 7124-----
07124 SEL 2 0901.....
07129 TRS O 7134-----

```

```

07134 NOP A 0000.....
07139 SEL 2 0911
07144 TRS O 7179-----
07149 SEL 2 0500
07154 WR R 7200
07159 SEL 2 0913
07164 TRS O 7174-----
07169 TR 1 7179-----
07174 HLT J 1011.....
07179 SEL 2 0912.....
07184 TRS O 6904
07189 TR 1 7209-----

```

AU41

BYPASS FORCED ERRORS

CREATED REDUNDANCY TO BRING UP
ANY TRIGGER

TURN OFF ANY TRIGGER

ERROR ROUTINE

CONSTANTS AND WORK AREA

2 005 07194
2 004 07198
2 001 07199
2 004 07203
2 001 07204

BBBBB
0901
□
1011
□

705 1 20K
ROUTINE 12
CHECK THAT IN 705 1 ON TRS 10
11,14,15 NO TRANSFER TAKES
PLACE IF APPROPRIATE CHECKS
ARE NOT PREVIOUSLY SELECTED
AND I/O IS NOT ON

BYPASS FORCED ERRORS

AU39.....
07209 SEL 2 0915
07214 TRS 0 7494
07219 SEL 2 0900
07224 TRS 0 7229
07229 SEL 2 0901
07234 TRS 0 7239
07239 SEL 2 0904
07244 TRS 0 7249
07249 SEL 2 0905
07254 TRS 0 7264
07259 TR 1 7284
07264 SEL 2 0911
07269 TRS 0 7284
07274 SEL 2 0500
07279 WR R 7500
07284 TR 1 7299
07289 TRS 0 10 7394 7LR4
07294 TRA I 7299
07299 SB % 08 7496 7M96
07304 SB % 09 7496 7MZ6
07309 TRS 0 11 7394 7LI4
07314 TRA I 7319
07319 SET B 0001
07324 LOD 8 7530
07329 ADD G 7534
07334 TRS 0 14 7394 7CR4
07339 TRA I 7344
07344 SEL 2 0500
07349 RAD H 7539
07354 TRS 0 15 7394 7CI4
07359 EEM 3 14 0000 0E-0
07364 TRS 0 10 7369 7LO9
07369 TRS 0 11 7374 7LG4
07374 TRS 0 14 7379 7CP9
07379 TRS 0 15 7384 7CH4
07384 LEM 3 15 0000 0E&0
07389 TRA I 7484
07394 SEL 2 0900
07399 TRS 0 7404
07404 SEL 2 0901
07409 TRS 0 7414
07414 SEL 2 0904
07419 TRS 0 7424
07424 SEL 2 0905
07429 TRS 0 7434
07434 TRA I 7439
07439 NOP A 0000
07444 SEL 2 0911
07449 TRS 0 7484
07454 SEL 2 0500
07459 WR R 7525
07464 SEL 2 0913
07469 TRS 0 7479
07474 TR 1 7484
07479 HLT J 1012
07484 SEL 2 0912
07489 TRS 0 7209
07494 TR 1 7544
AV43

- 7280 000 11 2 61

901 CHECK ON

904 CHECK ON

905 CHECK ON

ERROR ROUTINE

CONSTANTS AND WORK AREA

2 005 07499
2 024 07523
2 001 07524
2 004 07528
2 001 07529
2 010 07539

333B1
900 OR 901 OR 904 OR 905
□
1012
□
900AA00000

705 1 20K
ROUTINE 13
CHECK THAT IN 705 1 ON TRS 12
AND 13 NO TRANSFER TAKES
PLACE IF APPROPRIATE CHECKS
ARE NOT PREVIOUSLY SELECTED
AND I/O IS NOT ON

BYPASS FORCED ERRORS

ENTER 7080 MODE TO BRING UP
902 AND 903 TRIGGERS

SET UP CASU 15

BRING UP 902 AND 903
CLEAR STORAGE

RESET SPC
REENTER 705 1 MODE

ENTER 7080 MODE

TURN OFF 903
REENTER 705 1 MODE

ERROR ROUTINE

```
AV41.....07544 SEL 2 0915
07549 TRS 0 7769
07554 SEL 2 0902
07559 TRS 0 7564
07564 SEL 2 0903
07569 TRS 0 7579
07574 TR 1 7599
07579 SEL 2 0911
07584 TRS 0 7599
07589 SEL 2 0500
07594 WR R 7784
07599 EEM 3 14 0000 06-0
07604 SPC , 3700
07609 SET B 0008
07614 LOD 8 7779
07619 SET B 0032
07624 LIP , 15 0009 06&9
07629 SPC , 3700
07634 SET B 0008
07639 LOD 8 7809
07644 SET B 0032
07649 SPC , 0000
07654 LEM 3 15 0000 06&0
07659 TRS 0 12 7694 7F94
07664 TRS 0 13 7694 7FZ4
07669 SEL 2 0902
07674 TRS 0 7684
07679 TR 1 7694
07684 SEL 2 0903
07689 TRS 0 7759
07694 EEM 3 14 0000 06-0
07699 TRS 0 12 7704 7G04
07704 TRS 0 13 7709 7G 9
07709 LEM 3 15 0000 06&0
07714 NOP A 0000
07719 SEL 2 0911
07724 TRS 0 7759
07729 SEL 2 0500
07734 WR R 7795
07739 SEL 2 0913
07744 TRS 0 7754
07749 TR 1 7759
07754 HLT J 1013
07759 SEL 2 0912
07764 TRS 0 7544
07769 TR 1 7814
AW44
```

CONSTANTS & WORK AREA

```

2 006 07775
3      07779      7629 7629      -&D-
2 005 07784      A
2 009 07793      902 OR903
2 001 07794      □
2 004 07798      1013
2 001 07799      □
2 010 07809      0000000000
    
```

```

AW01  □
AW09  □
AW26  □
AW43  ..... 07814 SEL 2      0916      □
        07819 TRS 0      7829      □
        07824 TR 1      7834      □
        07829 HLT J      0000..... 11
        07834 SEL 2      0914..... 1
        07839 TRS 0      0014      □
        07844 EEM 3 14    0000 06-0  □
        07849 SEL 2      0500      □
        07854 WR  R      7865      □
        07859 HLT J      6666      □
        07864 TR 1      18219 Y219  □
        □
    
```

```

2 032 07896
2 001 07897
    
```

TURN OFF 705 1/11 & 40K SW IF ON

CONSTANTS & WORK AREA