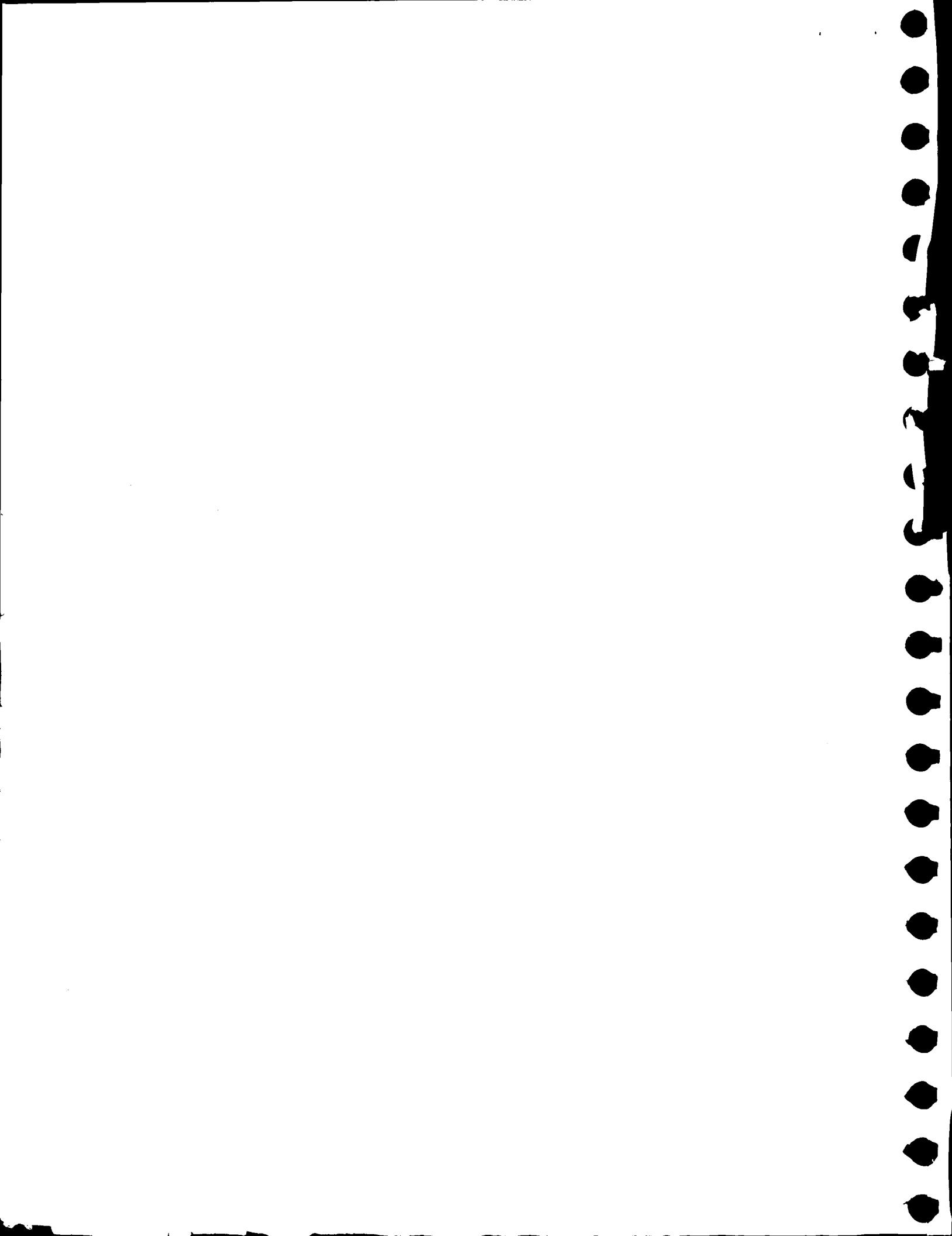


8TC15

OVERLAP CHANNEL OPERATION TEST

August 10, 1961



A. PURPOSE OF TEST

8TC15 tests for error free communication channel operation during the execution of TCT and LIP instructions, proper operation of the channel reset instruction, and proper operation on different channels of RD 01 simultaneously with WR 00.

B. REQUIREMENTS

The following areas of the machine are required:

7153 Console
7302 Memory
7102 CPU
7305 Storage and I/O Control

In addition, it is required that two Mod. IV tape drives (numbers 1 and 2) be ready on each channel that is to be included in the test, and that at least two channels be available for test.

C. LOADING PROCEDURE

(1) For card input, use load program 8LD01A with cards in the following order:

8LD01 2 cards
8TC15 123 cards
8TR02A 1 card
3 blank cards

(2) For tape input, use a tape file generated by 8TR06. See 8TR06 write-up for proper usage.

D. SWITCH SETTINGS

(1) Alteration Switches

911 ON - Bypass error type-outs and error halts.
912 ON - Loop in routine.
913 ON - Halt on error if 911 OFF.
914 ON - Loop in program.
915 - Not used.
916 ON - Type-out a more specific error indication if 911 OFF.

(2) Check Switches - 901 to program; 900, 2, 3, 4, 5 to automatic

(3) Other Switches

705 I/II - OFF
NON-STOP - OFF
40K - OFF
I/O - OFF

E. NORMAL TYPE-OUTS

- (1) MAKE READY TAPE UNITS 1 AND 2 ON ALL CHANNELS
MOD IV TAPES MUST BE USED
901 TO PROG.

Normal housekeeping type-out.

- (2) ONLY ONE TAPE UNIT READY ON CHANNEL XX

XX may be any channel; this type-out occurs when channel XX has one but not both tape units 1 and 2 ready.

- (3) NO TAPE UNITS 1 OR 2 READY

Occurs when no communication channel has a 1 or 2 tape unit ready.

- (4) 2 CHNS NOT RDY

Occurs when two channels not ready.

- (5) XXX - 100 PASSES

XXX may be any routine number; this type-out occurs when looping in routine XXX every time 100 passes have been made.

- (6) Z

Occurs when looping in program after every fifty passes.

F. NORMAL HALTS

- HALT 0000 Occurs after housekeeping type-outs
HALT 0502 Occurs when no tape units 1 or 2 are ready, and this fact is detected during routine 005.

G. ROUTINE 001-004

These four routines all work in basically the same way; they each modify and then transfer to a common tape movement program on page 08 . Depending on how it was modified, this common routine causes simultaneous reading/writing on all ready channels overlapped with TCT/LIP. It tests for channel checks, checks that the data read from or written on tape is correct, and checks that the channel address word is correct. Each of these routines is independent, and may be entered at any time.

In routine 001, TCT is overlapped with a WR 00 on all ready channels; in routine 002, TCT is overlapped with a RD 00 on all ready channels. In routine 003, LIP is overlapped with a WR 00 on all ready channels; in routine 004, LIP is overlapped with a RD 00 on all ready channels.

These routines provide worst case conditions because TCT is the only instruction which can delay a DWT for more than one ALU cycle, and because if TIP breaks in during rather than after a DWT, the Select-Register is set to the data being processed. The data being processed is ...26001...and...26002...and when it is in the Select-Register, the WTC or SAR 8 trigger is held in a reset condition.

The type-outs and halts associated with these routines are as follows:

Error Type-outs (XXX is routine number)

(1) XXX - LONG WRITE

A timing mechanism built into the program causes this type-out if a write operation lasts too long. It may be caused by tape drives not having Start-Stop times up to specs, or by using MOD II tape drives.

(2) CHAN CHK XXX - WR

This type-out occurs when a channel check indicator is on at the end of a write operation.

(3) CHAN CHK XXX - RD

This type-out occurs when a channel check indicator is on at the end of a read operation.

(4) XXX - WR YYYY

This type-out occurs when the final address word in any channel is incorrect after a write operation, or if the data written is incorrect. YYYY is the tape associated with the error.

(5) XXX - RD YYYY

This type-out occurs when the final address word in any channel is incorrect after a read operation, or if the data read is incorrect. YYYY is the tape associated with the error.

(6) XXX - TCT, 901

The type-out occurs if a 901 check occurred during the execution of the TCT instruction.

(7) XXX - 901

The type-out occurs if a 901 check occurred, but not during execution of a TCT instruction.

If 916 is on, the following type-outs also occur.

(8) CHANNEL ADDRESS WORD

ACTUAL -- WWWW

CORRECT - YYYYYY

This type-out occurs after "XXX - WR YYYY" or "XXX - RD YYYY," providing further information about the channel address word. WWWW is the actual final address word, unloaded from the channel word set at the end of the channel operation. YYYYYY is the expected final address word. If they are the same, then the type-out was due to the data being incorrect.

(9) STATUS TGRS -- 21, 22, 23, 24, 25

This type-out occurs after "CHAN CHK XXX-WR" or "CHAN CHK XXX-RD," providing further information about the channel check. In place of the channel numbers will appear letters or numbers to be interpreted as follows:

ZZ Indicates that the channel was not being used by this program.

88 Indicates that the channel was being used, but that no check occurred.

XX Indicates that a check did occur on this channel; XX are the two characters obtained by a RD 03 instruction, and are coded to indicate which checks constituted the channel check.

Error Halts (XX is last two digits of routine number)

| | |
|-----------|--|
| HALT XX01 | Occurs after channel-check during write operations. |
| HALT XX02 | Occurs if incorrect final address word after write operation. |
| HALT XX03 | Occurs after channel-check during read operations. |
| HALT XX04 | Occurs if incorrect final address word after read operation, or if data read is incorrect. |

H. ROUTINE 005

Routine 005 tests the operation of the CHR instruction by testing its ability to reset off an interrupt call trigger. The routine may be entered at any time. The associated error type-outs and halts are as follows:

Error Type-outs

(1) 005-CHR FAILURE

Occurs if the CHR instruction failed to reset-off the communication-channel interrupt call trigger.

Error Halts

HALT 0501 Occur after CHR instruction failure.

I. ROUTINES 006-010

Routines 006-010 test for proper operation when WR 00 and RD 01 occur simultaneously on different channels. Routine 006 tests with RD 01 on channel 20 (and WR 00 on another channel), Routine 007 test with RD 01 on channel 21, and so forth through channel 24. If a particular channel is not ready, the corresponding routine is automatically bypassed and if two channels are not ready, all five routines are bypassed.

If the RD01 line in a particular channel fails, it may either fail to block memory, thereby permitting data to be read into memory, or it may be on all of the time, thereby blocking channel access to memory. Another type of failure is a floating information gate line on a particular channel; this will cause the RD 01 line to block memory at all times that a RD 01 is being performed on that channel, rather than just at those times that the channel is being serviced. If a WR 00 is being performed simultaneously on another channel, it has been observed that it will be blocked from memory, and that the record which will actually be written is the instruction following the WR 00 instruction. Routines 006-010 will detect any of the above failures, and if the 916 switch is on, the program will further test to see if the instruction following the WR 00 is in the record written. If this type of failure is observed, it is suggested that you start looking for the failure on systems page 30.12.04.1.

These routines are written as a single routine which steps the routine number to correspond with the channel on which the RD 01 is taking place. Entry to these routines may be made only on page 24. The recommended running procedure is to run with 913 ON; then, if a failure occurs 912 may be put on to loop in the routine.

The type-outs and halts associated with these routines are as follows:

Error Type-outs (XXX is routine number)

- (1) XXX - CHAN CHK - RD 01 - CH - YY

This type-out occurs if a channel check was detected on channel YY during the RD 01.

- (2) XXX - FINAL ADDR WDS INCORRECT

This type-out occurs if the channel address word is not correct at the completion of the WR 00.

- (3) XXX - RD 01 FIELD OTHER THAN BLANKS

This type-out occurs when the RD 01 unload area is not blank.

- (4) XXX - WR 00 RECORD DOES NOT CMP

This type-out occurs if the record written (WR 00) simultaneously with the RD 01 is not correct.

If 916 is on, the following type-outs also occur.

- (5) ADDR WD-ROUT XXX INCORRECT - RD 01

ACTUAL -- YYYYYYY

CORRECT - 060250

ADDR WD - ROUT XXX INCORRECT - WR 00

ACTUAL -- ZZZZZZ

CORRECT - 037005

This type-out occurs after "XXX-FINAL ADDR WDS INCORRECT," to provide further information about the address words.

- (6) INSTR AFTER WR 00 IN RECORD

This type-out occurs after "XXX - WR 00 RECORD DOES NOT CMP" if the instruction after the WR 00 was found in the record.

Error Halts (XXX is Routine number)

- | | |
|-----------|---|
| HALT XXX1 | Occurs if there is a channel check during the RD 01. |
| HALT XXX2 | Occurs if final address word incorrect, and 916 is OFF. |
| HALT XXX3 | Occurs if final address word incorrect, and 916 is ON. |
| HALT XXX4 | Occurs when the unload area for the RD 01 is not blank. |
| HALT XXX5 | Occurs when WR 00 record is incorrect and 916 is OFF or if 916 is ON the instruction after the WR 00 was not found in the record. |
| HALT XXX6 | Occurs when WR 00 record is incorrect, 916 is ON, and the instruction after the WR 00 was found in the record. |

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2099-20100

BKWD TR LOCATION OPN ASU ADDRESS

FWD TR

PAGE 01 OF 30

8TC15

8TC15

AUGUST 28, 1961

00004 CHR 3 13 0000 0& 0
00009 EEM 3 14 0000 0&-0
00014 LIM , 07 0000 0 &0
00019 SPC , 0000
I

CHANNEL RESET
ENTER 7080 MODE
KEEP OUT OF INTERRUPT MODE
RESET SPC TO 0000

00024 SEL 2 0500
00029 WR R 1400
00034 WR R 1466
00039 WR R 1453
00044 HLT J 0000
I

HOUSEKEEPING TYPE-OUTS

A03
A06.....

00049 SET B 01 0004 00 4
00054 LOD 8 01 1229 12\$9
00059 SET B 02 0004 00-4
00064 LOD 8 02 1229 12K9
00069 SET B 03 0004 00&4
00074 LOD 8 03 1244 12D4
00079 SET B 06 0006 0 -6
00084 LOD 8 06 1254 1SN4
00089 SET B 07 0006 0 &6
00094 LOD 8 07 1246 1SD6
00099 SET B 05 0004 0 4
00104 LOD 8 05 1254 1SV4
00109 SET B 08 0002 0-02
00114 LOD 8 08 1264 1K64
00119 SET B 04 0001 0 01
00124 LOD 8 04 1754 1X54
00129 RCV U 1300
00134 BLM \$ 01 0050 00V0
I

LOAD INITIAL ZEROES
INTO ASU 01 AND
ASU 02 BANK 01

STORE 0001 IN ASU 03
STORE 000005 IN ASU 06
STORE 000100 IN ASU 07
STORE 0005 IN ASU 05
STORE 24 IN ASU 08
STORE A IN ASU 04

00139 LFC , 02 1234 12L4
00144 UFC , 03 0219 02A9
00149 LFC , 02 1364 1304
00154 UFC , 03 0244 02D4
00159 LFC , 02 1239 12L9
00164 UFC , 03 0284 02H4
00169 LFC , 02 1369 1309
00174 UFC , 03 0309 03&9
00179 UNL 7 04 3065 3 65
00184 UNL 7 04 3245 3S45
00189 UNL 7 04 1160 1/60
00194 UNL 7 04 3690 3W90
00199 UNL 7 04 4275 4S75
00204 UNL 7 04 4900 4Z00
00209 UNL 7 04 5895 5Y95
00214 UNL 7 04 4710 4X10
I

RESTORING INITIAL
INSTRUCTION ADDRESSES

RESETTING
NOPS

NEXT PAGE

FROM PREVIOUS PAGE

PAGE 02 OF 30

8TC15

IDENTIFYING THE READY TAPE
UNITS, ADDRESSED 01

SET DENSITY HIGH

```
00219 SEL 2 2001
00224 TRR 0 01 0234 02T4
00229 TR 1 0264
00234 SET B 0004
00239 LOD 8 0219
00244 UNL 7 1304
00249 SDH 3 0038
00254 ADD G 01 1754 17V4
00259 AAM @ 06 0244 OSM4
00264 CMP 4 08 0217 OK17
00269 TRE L 0284
00274 AAM @ 07 0219 OSA9
00279 TR 1 0219
```

```
00284 SEL 2 2002
00289 TRR 0 01 0299 02Z9
00294 TR 1 0329
00299 SET B 0004
00304 LOD 8 0284
00309 UNL 7 1329
00314 SDH 3 0038
00319 ADD G 02 1754 17N4
00324 AAM @ 06 0309 OT-9
00329 CMP 4 08 0282 OK82
00334 TRE L 0349
00339 AAM @ 07 0284 OSH4
00344 TR 1 0284
```

IDENTIFYING THE READY TAPE
UNITS, ADDRESSED 02

SET DENSITY HIGH

```
00349 SET B 12 0004 0604
00354 LOD 8 12 2214 2B14
00359 CMP 4 12 1309 1C09
00364 TRE L 0374
00369 TR 1 0404
00374 CMP 4 12 1334 1C34
00379 TRE L 0389
00384 TR 1 0404
00389 SEL 2 0500
00394 WR R 2215
00399 SGN T 0640
```

TESTING FOR 2 CHANNELS READY

T-O *2 CHANS NOT RDY*

```
00404 CMP 4 01 1229 12S9
00409 TRE L 0419
00414 TR 1 0449
00419 CMP 4 02 1229 12K9
00424 TRE L 0434
00429 TR 1 0449
00434 SEL 2 0500
00439 WR R 1373
00444 TR 1 0659
```

CHECKING FOR AT LEAST
ONE READY TAPE UNIT

T-O *NO TAPE UNITS 1 OR 2 RDY
RE-IDENTIFY ALL RDY TAPE UNITS

B02.....

```

    00449 UNL 7 03 1279 12G9
    00454 UNL 7 03 1284 12H4
    00459 LFC 02 1504 15-4
    00464 UFC 03 0499 0419
    00469 LFC 02 1354 13N4
    00474 UFC 03 0484 04H4
    00479 SET B 0004
    00484 LOD 8 0000
    00489 UNL 7 0504
    00494 SET B 0002
    00499 LOD 8 1302
    00504 CMP 4 1327
    00509 TRE L 0559
    00514 CMP 4 05 1284 1SY4
    00519 TRE L 0539
    00524 ADM 6 03 1284 12H4
    00529 AAM @ 06 0504 0V-4
    00534 TR I 0494
    00539 UNL 7 1547
    00544 SEL 2 0500
    00549 WR R 1510
    00554 SGN T 15 0640 0FD0
    00559 UNL 7 03 1284 12H4
    00564 CMP 4 05 1279 1SX9
    00569 TRE L 0589
    00574 ADM 6 03 1279 12G9
    00579 AAM @ 06 0499 0UR9
    00584 TR I 0479

```

CHECKING FOR TWO READY
TAPE UNITS ON ALL
AVAILABLE CHANNELS

COMPARE ALL
READY 02 UNITS
WITH EACH READY
01 UNIT

T-0 ONLY ONE TAPE UNIT
READY ON CHANNEL XX

```

    00589 UNL 7 03 1279 12G9
    00594 NOP A 0639
    00599 SGN T 15 0590 0E10
    00604 LFC 02 1504 15-4
    00609 UFC 03 0504 05&4
    00614 LFC 02 1509 15-9
    00619 UFC 03 0499 0419
    00624 LFC 02 1359 13N9
    00629 UFC 03 0484 04H4
    00634 TR I 0494
    00639 UNL 7 04 0590 0V90
    00644 NOP A 0654
    00649 TR I 0669
    00654 UNL 7 04 0640 0W40
    00659 TAD I 04 0049 0 49-----A01
    00664 TR I 18219 Y219

```

MODIFY PREVIOUS ROUTINE

TO THE REWINDING ROUTINE
914 SWITCH

C02.....

```

    00669 LFC 02 1364 1304
    00674 UFC 03 0689 06H9
    00679 UNL 7 03 1279 12G9
    00684 SET B 0004
    00689 LOD 8 0000
    00694 UFC 03 0699 0619
    00699 SEL 2 0000
    00704 IOF 3 0000
    00709 TRS O 0714
    00714 RWD 3 0002
    00719 ADM 6 15 2405 2D&5
    00724 ADM 6 15 2455 2DE5
    00729 CMP 4 01 1279 12X9
    00734 TRE L 0754-----E04
    00739 ADM 6 03 1279 12G9
    00744 AAM @ 06 0689 0WQ9
    00749 TR I 0684

```

REWINDING TAPE UNITS
ADDRESSED 01

TO NEXT REWINDING ROUTINE

D14

D27.....

REWINDING TAPE UNITS
ADDRESSED 02

E03.....
00754 LFC , 02 1369 1309 □
00759 UFC , 03 0774 07G4 □
00764 UNL 7 03 1279 12G9 □
00769 SET B 0004 □
00774 LOD 8 0000 □
00779 UFC , 03 0784 07H4 □
00784 SEL 2 0000 □
00789 IOF 3 0000 □
00794 TRS O 0799 -----
00799 RWD 3 0002 -----
00804 ADM 6 15 2620 2FB0 □
00809 CMP 4 02 1279 12P9 □
00814 TRE L 0834 -----
00819 ADM 6 03 1279 12G9 □
00824 AAM @ 06 0774 0XP4 □
00829 TR I 0769 □
----- F05 TO FIELD-GENERATION ROUTINE

FIELD GENERATION ROUTINE
GENERATES 7 2,000 CHARACTER
FIELDS

F04
F06
00834 SET B 0006
00839 LFC , 02 1024 10K4
00844 UFC , 03 0909 09&9
00849 LOD 8 1030
00854 ULA * 0899
00859 ULA * 0919
00864 ULA * 0929
00869 SET B 12 0002 0&02
00874 LOD 8 12 1038 1&38
00879 SET B 13 0006 0& 6
00884 LOD 8 13 1036 1&T6
00889 SET B 14 0006 0&-6
00894 LOD 8 14 1042 1&M2

RESTORING ADDRESSES

PUT 00 IN ASU 12
PUT 002500 IN ASU 13
PUT 000010 IN ASU 14

| | | | |
|-------|-----|------|------|
| 00899 | RCV | U | 0000 |
| 00904 | SET | B | 0002 |
| 00909 | SND | / | 0000 |
| 00914 | SET | B | 0198 |
| 00919 | SND | / | 0000 |
| 00924 | SET | B | 0200 |
| 00929 | SND | / | 0000 |
| 00934 | SET | B | 0002 |
| 00939 | SND | / | 1124 |
| 00944 | AAM | @ 13 | 0899 |
| 00949 | AAM | @ 13 | 0919 |
| 00954 | AAM | @ 13 | 0929 |
| 00959 | AAM | @ 14 | 0909 |
| 00964 | ADD | G 12 | 1045 |
| 00969 | CMP | 4 12 | 1047 |
| 00974 | TRE | L | 0984 |
| 00979 | TR | 1 | 0899 |

GENERATION OF FIELDS

INCREMENT ADDRESSES

ADD 01 TO ASU 12
COMPARE 07 TO ASU 12
TRANSFER ON EQUAL

| | | | | | |
|-------|-----|---|-------|------|---|
| 00984 | RCV | U | 25004 | N004 | • |
| 00989 | SET | B | 0002 | | □ |
| 00994 | SND | / | 1054 | | ■ |
| 00999 | SET | B | 0048 | | □ |
| 01004 | SND | / | 25004 | N004 | □ |
| 01009 | SET | B | 0002 | | □ |
| 01014 | SND | / | 1124 | | □ |
| 01019 | TR | 1 | 1134 | | □ |

GENERATE A FIELD OF 250
CHARACTERS AT 25,000

| | | |
|----------------|-----------|------------|
| 2 001 01020 | 1054 1054 | |
| 3 006 01024 | | 030004 |
| 2 006 01030 | | 002500 |
| 2 006 01036 | | 000010 |
| 2 006 01042 | | AOA |
| 2 003 01045 | | 07 |
| 2 002 01047 | | MMMM66666M |
| 2 010 01059 00 | | LLLL88888L |
| 2 010 01069 00 | | QQQQ44444Q |
| 2 010 01079 00 | | XXX33333X |
| 2 010 01089 00 | | HHHH22222H |
| 2 010 01099 00 | | 2600126001 |
| 2 010 01109 00 | | 2600226002 |
| 2 010 01119 00 | | |
| 2 001 01120 | | □ |
| 2 001 01121 | | □ |
| 2 001 01122 | | □ |
| 2 001 01123 | | □ |
| 2 001 01124 | | □ |
| 2 001 01125 | | □ |
| 2 001 01126 | | □ |
| 2 001 01127 | | □ |
| 2 001 01128 | | □ |
| 2 001 01129 | | □ |

G05..... 01134 SET B 0010 □
 □ 01139 LOD 8 1939 □
 □ 01144 UNL 7 1499R U99R □
 □ 01149 TR 1 4969 -----AA19

STORE RECORD MARKS AT
END OF TCT FIELD
TRANSFER TO ROUTINE 001

H25
 H26..... 01154 TAD I 04 1164 1/64-----
 □ 01159 TR 1 18219 Y219 □ I
 □ 01164 NOP A 1179
 □ 01169 SGN T 15 1160 1AF0 □
 □ 01174 UNL 7 03 1299 1219 □
 □ 01179 SET B 0004 □
 □ 01184 LOD 8 1255 □
 □ 01189 CMP 4 1299 □
 □ 01194 TRE L 1209 -----
 □ 01199 ADM 6 03 1299 1219 □ I
 □ 01204 TR 1 0834 -----F05
 □ 01209 UNL 7 04 1160 1/60 . . . I
 □ 01214 SEL 2 0500 □
 □ 01219 WR R 2208 □
 □ 01224 TR 1 0049 -----A01

END-OF-PROGRAM ROUTINE

T-O *Z* AFTER EVERY
50 PASSES OF THE PROGRAM

DATA AND WORKING AREAS

2 005 01229 00 00000
 2 005 01234 00 02001
 2 005 01239 00 02002
 2 005 01244 00 A0001
 2 010 01254 00 0004000005
 2 005 01259 00 00000
 2 005 01264 00 00024
 2 005 01269 00 00012
 2 005 01274 00 00016
 2 005 01279 00 A COUNTING AREA-A
 2 005 01284 00 A COUNTING AREA-B
 2 005 01289 00 A CH CHK 3-PASS COUNTING AREA
 5 005 01294 00 MULTI-PASS COUNTING AREAS
 5 005 01299 00
 5 025 01324 00 WORKING AREA USED FOR STORING
 5 025 01349 00 CHANNEL SELECT ADDRESSES
 2 001 01350
 3 01354 00 1509 1509
 2 001 01355
 3 01359 00 1504 1504
 2 001 01360
 3 01364 00 1304 1304
 2 001 01365
 3 01369 00 1329 1329
 2 029 01398 NO TAPE UNITS 1 OR 2 READY
 2 001 01399
 2 045 01444 MAKE READY TAPE UNITS 1 AND 2 ON ALL CHANNELS
 2 005 01449
 2 015 01464 901 TO PROG.
 2 001 01465
 2 025 01490 MOD IV TAPES MUST BE USED
 2 001 01491
 2 005 01499 00 00000
 2 001 01500
 3 01504 00 1302 1302
 2 001 01505
 3 01509 00 1327 1327 ONLY ONE TAPE UNIT READY ON CHANNEL XX
 2 038 01547
 2 002 01549
 2 005 01554 00 0-00- 60,000
 2 005 01559 00 00080
 2 005 01564 00 00600
 2 005 01569 00 00250
 2 005 01574 00 00003
 2 010 01584 00 000020000
 2 005 01589 00 0-00M 60,004
 2 005 01594 00 OK99- 62,990
 2 005 01599 00 00000 30000*30000*42500*45000
 2 005 01604 00 02500
 5 025 01629 00 CH-CHK TYPE-OUT WORK AREA
 2 025 01654 ZZ ZZ ZZ ZZ ZZ
 2 029 01683 STATUS TRGRS-- , , , ,
 2 001 01684
 2 020 01704 00 CHAN CHK 001-WR
 2 001 01705
 2 005 01710
 2 011 01721
 2 001 01722
 2 020 01744 00 CHAN CHK 001-RD
 2 001 01745
 2 005 01754 00 A000A
 5 005 01759 00 FINAL-ADDRESS-WORD WORK AREA
 2 024 01783 CHANNEL ADDRESS WORD
 2 001 01784
 2 014 01798 ACTUAL--ZZZZZ
 2 001 01799
 2 014 01813 CORRECT-ZZZZZ
 2 001 01814
 2 014 01828 005-100 PASSES
 2 001 01829
 2 014 01843 00X-100 PASSES
 2 001 01844

| | | | |
|----------------|-----------|---------------------------|--------|
| 2 009 01853 | | 005-901 | |
| 2 001 01854 | | □ -24R | 60,249 |
| 2 005 01859 00 | | □ &249 | 30,249 |
| 2 005 01864 00 | | □ O | |
| 2 001 01865 | | | |
| 3 01869 00 | 1874 1874 | | |
| 2 025 01894 00 | | OK00-0N00-0Q00-0A00-0D00- | |
| 2 015 01909 00 | | 001-RD ZZZZ | |
| 2 005 01914 | | □0000 | |
| 2 006 01920 | | 001250 | |
| 2 009 01929 | | 000750000 | |
| 2 001 01930 | | # | |
| 2 001 01931 | | # | |
| 2 001 01932 | | # | |
| 2 001 01933 | | # | |
| 2 005 01938 | | # | |
| 2 001 01939 | | # | |
| 2 014 01953 | | 00X-TCT,901 | |
| 2 001 01954 | | □ 00X-901 | |
| 2 009 01963 | | □ 00X-WR ZZZZ | |
| 2 001 01964 | | □ 00000 | |
| 2 015 01979 00 | | | |
| 2 005 01984 00 | | | |
| 2 001 01985 | | | |
| 3 01989 00 | 2159 2159 | | |
| 2 001 01990 | | | |
| 3 01994 00 | 2149 2149 | | |
| 2 001 01995 | | | |
| 3 01999 00 | 2154 2154 | Z | |
| 2 001 02000 | | | |
| 3 02004 00 | 2859 2859 | Z | |
| 2 001 02005 | | | |
| 3 02009 00 | 2994 2994 | Z | |
| 2 001 02010 | | | |
| 3 02014 00 | 3499 3499 | | |
| 2 001 02015 | | | |
| 3 02019 00 | 3479 3479 | | |
| 2 005 02024 00 | | 08000 | |
| 2 005 02029 00 | | 0X500 | 17,500 |
| 2 005 02034 00 | | 01500 | 1,500 |
| 2 005 02039 00 | | 04250 | 4,250 |
| 2 005 02044 00 | | 12345 | |
| 2 005 02049 00 | | 67890 | |
| 2 001 02050 | | Z | |
| 3 02054 00 | 4099 4099 | | |
| 2 001 02055 | | Z | |
| 3 02059 00 | 3974 3974 | | |
| 2 005 02064 00 | | 06249 | 30,249 |
| 2 005 02069 00 | | 0274R | 42,749 |
| 2 005 02074 00 | | 0524R | 45,249 |
| 2 005 02079 00 | | 06000 | 30,000 |
| 2 005 02084 00 | | 0250- | 42,500 |
| 2 005 02089 00 | | 0500- | 45,000 |
| 2 001 02090 | | Z | |
| 3 02094 00 | 4584 4584 | | |
| 2 001 02095 | | Z | |
| 3 02099 00 | 4574 4574 | | |
| 2 001 02100 | | Z | |
| 3 02104 00 | 2809 2809 | | |
| 2 001 02105 | | Z | |
| 3 02109 00 | 2799 2799 | | |
| 2 001 02110 | | Z | |
| 3 02114 00 | 5149 5149 | | |
| 2 001 02115 | | Z | |
| 3 02119 00 | 5329 5329 | | |
| 2 001 02120 | | Z | |
| 3 02124 00 | 5509 5509 | | |
| 2 001 02125 | | Z | |
| 3 02129 00 | 5689 5689 | | |
| 2 001 02130 | | Z | |
| 3 02134 00 | 4969 4969 | 00750 | |
| 2 005 02139 00 | | 00560 | |
| 2 005 02144 00 | | | |

| | | |
|----------------------|---------------------------|--------|
| 2 005 02149 00 | 0451- | 44,510 |
| 2 005 02154 00 | 0701- | |
| 2 025 02179 00 | OB0100D5100G0100I5100201- | |
| 2 001 02180 | Z | |
| 3 02184 00 4049 4049 | Z | |
| 2 001 02185 | | |
| 3 02189 00 2934 2934 | | |
| 2 001 02190 | | |
| 3 02194 00 1989 1989 | | |
| 2 001 02195 | | |
| 3 02199 00 1994 1994 | | |
| 2 001 02200 | | |
| 3 02204 00 1999 1999 | | |
| 2 004 02208 00 | 000Z | |
| 2 001 02209 | □ | |
| 2 005 02214 | | |
| 2 015 02229 | 2 CHNS NOT RDY | |

START OF COMMON TAPE MOVEMENT
PROGRAM FOR ROUTINES 001-004J18
J19
J20
J21

```
#####
#02234 SET B 07 0004 0 &4
#02239 LOD 8 07 1563 1VF3
#02244 SET B 08 0006 0-06
#02249 LOD 8 08 1569 1N69
#02254 SET B 03 0004 00&4
#02259 LOD 8 03 1244 12D4
#02264 LFC , 02 1589 15Q9
#02269 UFC , 03 2304 23&4
#02274 UNL 7 03 1279 12G9
#02279 SET B 0250
#02284 UNL 7 27249 P249
#02289 SET B 0010
#02294 LOD 8 1939
#02299 UNL 7 27259 P259
#02304 RCV U 0000
#02309 TMT 9 27004 P004
#02314 CMP 4 07 1279 1SG9
#02319 TRE L 2339 -----
#02324 AAM @ 08 2304 2L04
#02329 ADM 6 03 1279 12G9
#02334 TR 1 2304
#####
```

BLANKING
READ IN
AREAS WITH
ZEROES0001 STORED IN ASU 03
0060 STORED IN ASU 07
000250 STORED IN ASU 08
STORE 10 RECORD MARKS
AT END OF MASTER ZERO-
GENERATING AREA

ZERO-BLANKING COMPLETED

```
#####
#02339 UNL 7 03 1289 12H9
#02344 UNL 7 03 1279 12G9
#02349 LFC , 02 1594 15R4
#02354 UFC , 03 2374 23G4
#02359 SET B 08 0006 0-06
#02364 LOD 8 08 1577 1N77
#02369 SET B 13 0010 0&/0
#02374 RCV U 0000
#02379 TMT 9 13 1120 1AS0
#02384 CMP 4 01 1279 12X9
#02389 TRE L 2409 -----
#02394 ADM 6 03 1279 12G9
#02399 AAM @ 08 2374 2L74
#02404 TR 1 2369
#####
```

RESET 3-PASS CHAN-CHK COUNTER
STORING 10
GROUP MARKS
IN FRONT OF
EACH UNLOADING AREA003000 IN ASU 08
K10 GROUP-MARK STORAGE COMPLETED
INCREMENT RCV ADDR BY 3000

X09
X14...
 02409 NOP A 2579
 02414 UNL 7 03 1279 12G9
 02419 LFC , 02 1364 1304
 02424 UFC , 03 2434 24C4
 02429 SET B 0004
 02434 LOD 8 0000
 02439 UFC , 03 2444 24D4
 02444 SEL 2 0000
 02449 TRR 0 01 2459 24V9
 02454 TR 1 2579
 02459 NOP A 2539
 02464 SET B 0004
 02469 LOD 8 1364
 02474 UNL 7 2484
 02479 SET B 0004
 02484 LOD 8 1304
 02489 UNL 7 2494
 02494 SEL 2 0000
 02499 SET B 0001
 02504 LOD 8 2494
 02509 CMP 4 1450
 02514 TRE L 2534
 02519 SKP 3 0009
 02524 AAM @ 06 2484 2UQ4
 02529 TR 1 2479
 02534 SGN T 15 2455 2DE5
 02539 CMP 4 01 1279 12X9
 02544 TRE L 2564
 02549 ADM 6 03 1279 12G9
 02554 AAM @ 06 2434 2UL4
 02559 TR 1 2434
 02564 LFC , 02 1364 1304
 02569 UFC , 03 2764 27F4
 02574 TR 1 2744
 L11 CHANNELS XX01 READY TO WRITE

TESTING CHANNEL
READINESS PRIOR
TO WRITING OF
RECORDS

01 NOT READY TEST 02

ALL CHANNELS READY

CONTINUED

02NOT READY--TEST 01

02579 UNL 7 03 1284 12H4
 02584 LFC , 02 1369 1309
 02589 UFC , 03 2599 2519
 02594 SET B 0004
 02599 LOD 8 0000
 02604 UFC , 03 2609 26&9
 02609 SEL 2 0000
 02614 TRR 0 01 2624 26S4
 02619 TR 1 2409
 02624 NOP A 2709
 02629 SET B 0004
 02634 LOD 8 1369
 02639 UNL 7 2649
 02644 SET B 0004
 02649 LOD 8 1329
 02654 UNL 7 2659
 02659 SEL 2 0000
 02664 SET B 0001
 02669 LOD 8 2659
 02674 CMP 4 1450
 02679 TRE L 2699
 02684 SKP 3 0009
 02689 AAM @ 06 2649 2WM9
 02694 TR 1 2644
 02699 SGN T 15 2620 2FB0
 02704 SGN T 15 2405 2D&5
 02709 CMP 4 02 1284 12Q4
 02714 TRE L 2734
 02719 ADM 6 03 1284 12H4
 02724 AAM @ 06 2599 2VR9
 02729 TR 1 2599
 02734 LFC , 02 1369 1309
 02739 UFC , 03 2764 27F4

ALL CHANNELS READY

FROM PREVIOUS PAGE

PAGE 11 OF 30

8TC15

10..... 02744 UNL 7 03 1279 12G9 □
□ 02749 SET B 07 0005 0 &5 □
□ 02754 LOD 8 07 1604 1W&4 □
□ 02759 SBN 8 14 2763 2G03 □
□ 02764 NOP A 0000 □
□ 02769 TMC O 11 2779 2PG9---
□ 02774 TR 1 2789-----
□ 02779 SEL 2 0500----
□ 02784 WR R 1957 □ I
□ 02789 LFC 02 2764 2704 . . . I
□ 02794 UFC 03 2809 28&9 □
□ 02799 LFC 02 1599 15R9 □
□ 02804 UFC 03 2824 28B4 □
I 02809 LFC 02 0000 00-0 □
I 02814 UFC 03 2819 28A9 □
I 02819 SEL 2 0000 □
I 02824 WR R 0000 □
I 02829 CMP 4 01 1279 12X9 □
I 02834 TRE L 2859---
I 02839 ADM 6 03 1279 12G9 □ I
I 02844 AAM @ 06 2809 2Y-9 □
I 02849 AAM @ 07 2824 2YB4 □ I
+-- 02854 TR 1 2809 □ I
□□□□□□□□□□□□□□□□□□□□□ I

WRITE 2000-CHARACTER RECORDS ON ALL AVAILABLE CHANNELS

ST LOCATION OF 2001/2002 HERE

T-O *00X-901*

□ 02859 SET B 2200 I
□ 02864 UNL 7 03 1279 12G9 □
□ 02869 SET B 12 0004 0&04 □
□ 02874 LOD 8 12 1274 1B74 □
I 02879 RCV U 1500R VOOR □
I 02884 TCT , 08 1000R -OR □
I 02889 CMP 4 12 1279 1B79 □
I 02894 TRE L 2909---
I 02899 ADM 6 03 1279 12G9 □ I
+-- 02904 TR 1 2879 □ I
□ 02909 TMC O 11 2919 2RA9 ---
□ 02914 TR 1 2994-----M12
I 02919 SEL 2 0500----
I 02924 WR R 1943 □
I 02929 TR 1 2994-----M12
□□□□□□□□□□□□□□□□□□□□□ I

WRITING BEGUN ON ALL CHANNELS

INCREMENT WR ADDR BY 2500

2.48 MILLI-SEC DELAY

16 5000-CHARACTER TCT INSTRUCTIONS,
DESIGNED TO OVERLAP CHANNEL WRITE OPERATIONS
---CALCULATED TO LAST ABOUT 32 TO 38 MILLI-SEC

T-O *00X-TCT,901*

□ 02934 SET B 2200 □
□ 02939 SET B 09 0004 0- 4 □
□ 02944 LOD 8 09 2139 2JT9 □
□ 02949 UNL 7 03 1279 12G9 □
□ 02954 SPC 3710 □
□ 02959 SET B 0004 □
□ 02964 SPC , 0000 □
I 02969 LIP , 15 3700 3G&0 □
I 02974 CMP 4 09 1279 1KX9 □
I 02979 TRE L 2994-----M12 LEAVE TIP-LIP LOOP
I 02984 ADM 6 03 1279 12G9 □
+-- 02989 TR 1 2969 □
□□□□□□□□□□□□□□□□□□□□□ I

2.48 MILLI-SECOND DELAY

REPEATING LIP, DESIGNED TO OVERLAP CHAN WRITE OPERATIONS---CALCULATED TO LAST ABOUT 32 MILLI-SEC

M11.....

| | | | |
|-------|----------|------------------|-------------------|
| 02994 | SET B | 0025 | □ |
| 02999 | LOD 8 | 1654 | □ |
| 03004 | UNL 7 | 1629 | □ |
| 03009 | UNL 7 04 | 3245 3S45 | □ |
| 03014 | UNL 7 04 | 3690 3W90 | □ |
| 03019 | LFC , 02 | 2764 2704 | □ |
| 03024 | UFC , 03 | 3034 30C4 | □ |
| 03029 | UNL 7 03 | 1279 12G9 | □ |
| 03034 | LFC , 02 | 0000 00-0 | □ |
| 03039 | UFC , 03 | 3044 30D4 | □ |
| 03044 | SEL 2 | 0000 | □ |
| 03049 | UNL 7 04 | 3065 3 65 | □ |
| 03054 | TRR O 01 | 3104 31 4----- | I |
| 03059 | SET B | 4600 | □ I |
| 03064 | SET B | 0000 | □ I |
| 03069 | NOP A | 3084 | □ I |
| 03074 | SGN T 15 | 3065 3&F5 | □ I |
| 03079 | TR 1 | 3054 | □ I |
| 03084 | TAA I 01 | 3099 30Z9-----I | I |
| 03089 | SEL 2 | 0500 | □ II |
| 03094 | WR R | 1707 | □ II |
| 03099 | TR 1 | 3044 | ••••••••••••••• I |
| 03104 | TRS O 03 | 3144 31D4-----I | I |
| 03109 | TRR O 01 | 3119 31/9-----I | I |
| 03114 | TR 1 | 3109 | □ I |
| 03119 | CMP 4 01 | 1279 12X9•••I | I |
| 03124 | TRE L | 3249-----N13 | I |
| 03129 | ADM 6 03 | 1279 12G9 | I |
| 03134 | AAM @ 06 | 3034 3 L4 | I |
| 03139 | TR 1 | 3034 | □ |
| 03144 | TRS O | 3154-----••••• I | I |
| 03149 | TR 1 | 3159-----■■■ I | I |
| 03154 | SGN T 15 | 3690 3FI0•••I | I |
| 03159 | TTC O 02 | 3169 3109-----I | I |
| 03164 | TR 1 | 3109 | □ I |
| 03169 | SGN T 15 | 3245 3BD5•••I | I |
| 03174 | RCV U | 3042 | □ |
| 03179 | TZB • 04 | 3194 3/94----- | I |
| 03184 | RD Y 03 | 1605 16&5 | □ I |
| 03189 | TR 1 | 3109 | □ I |
| 03194 | TZB • 03 | 3209 32&9-----I | I |
| 03199 | RD Y 03 | 1625 16B5 | □ I |
| 03204 | TR 1 | 3109 | □ I |
| 03209 | TZB • 02 | 3229 32K9-----I | I |
| 03214 | TZB • 01 | 3239 32T9-----I | I |
| 03219 | RD Y 03 | 1620 16B0 | □ II |
| 03224 | TR 1 | 3109 | □ II |
| 03229 | RD Y 03 | 1610 16AO••I | I |
| 03234 | TR 1 | 3109 | □ I |
| 03239 | RD Y 03 | 1615 16A5••I | I |
| 03244 | TR 1 | 3109 | □ |

TEST FOR CHANNEL
CHECK AND/OR END-
OF-FILE---IF CHANNEL
CHECK, THEN MAKE THREE PASSES
AT WRITE ROUTINE BEFORE
TRANSFER TO 912 SWITCH
--IF END-OF-FILE,
THEN REWIND TAPES AND TRANSFER
TO TEST CHANNEL READINESS
PRIOR TO WRITING OF RECORDS

IF WRITE LASTS TOO LONG,
THEN THIS DELAY MECHANISM
WILL CAUSE T-0
BYPASS T-0
T-0 *XXX-LONG WRITE*
CHAN CHK OR END-OF-FILE

N13 ALL CHANNELS TESTED

END-OF-FILE

CHAN CHK

STORE TWO CHARACTERS FROM
READ 03 IN THE CHAN CHK
TYPE-OUT WORKING-AREA

SST FOR CHAN 24

SST FOR CHAN 23

SST FOR CHAN 21

SST FOR CHAN 22

N12.....
 03249 NOP A 3259
 03254 TR 1 3694 P14
 03259 TAA I 01 3429 34S9
 03264 SEL 2 0500
 03269 WR R 1690
 03274 TAF I 06 3284 3SQ4
 03279 TR 1 3414
 03284 UNL 7 03 1279 12G9
 03289 LFC 02 2764 2704
 03294 UFC 03 3299 3219
 03299 LFC 02 0000 00-0
 03304 UFC 03 3309 33&9
 03309 SEL 2 0000
 03314 TRR 0 01 3324 33S4
 03319 TR 1 3314
 03324 CMP 4 01 1279 12X9
 03329 TRE L 3349
 03334 ADM 6 03 1279 12G9
 03339 AAM @ 06 3299 3SR9
 03344 TR 1 3299

PROCESSING OF CHAN CHKS

T-0 CHAN CHK 00X-WR

03349 SET B 0002
 03354 LOD 8 1606
 03359 UNL 7 1671
 03364 LOD 8 1611
 03369 UNL 7 1674
 03374 LOD 8 1616
 03379 UNL 7 1677
 03384 LOD 8 1621
 03389 UNL 7 1680
 03394 LOD 8 1626
 03399 UNL 7 1683
 03404 SEL 2 0500
 03409 WR R 1656
 03414 TAC I 03 3424 34B4
 03419 TR 1 3429
 03424 HLT J 0001

STORING RD 03
CHARACTERS IN
CHAN-CHK STATUS-
TRGRS TYPE-OUTT-0 *STATUS TRGRS--20,21,
22,23,24

03429 CHR 3 13 0000 0& 0
 03434 SET B 09 0004 0- 4
 03439 LOD 8 09 1574 1NX4
 03444 CMP 4 09 1289 1KY9
 03449 TRE L 4869 Z18
 03454 ADM 6 03 1289 12H9
 03459 TR 1 3694 P14

CHAN CHK 3-PASS COUNTER--
IF CHAN CHK PERSISTS AFTER
3 PASSES, THEN TRANSFER TO
912 SWITCH AT END OF
ROUTINE

CHECKING FINAL ADDRESS WORD
IN EACH COMMUNICATION CHANNEL

| | | | | | | |
|-----------|-----|---|----|------|-------|--------|
| 03464 | UNL | 7 | 03 | 1284 | 12H4 | □ |
| 03469 | LFC | , | 02 | 2764 | 2704 | □ |
| 03474 | UFC | , | 03 | 3499 | 34I9 | □ |
| 03479 | SET | B | | 0004 | | □ |
| 03484 | LOD | 8 | | 0000 | | □ |
| 03489 | UNL | 7 | | 3544 | | □ |
| 03494 | UNL | 7 | | 3614 | | □ |
| 03499 | LFC | , | 02 | 0000 | 00-0 | □ |
| 03504 | UFC | , | 03 | 3509 | 3569 | □ |
| 03509 | SEL | 2 | | 0000 | | □ |
| 03514 | LFC | , | 02 | 3507 | 35-7 | □ |
| 03519 | UFC | , | 03 | 3522 | 35B2 | □ |
| 03524 | SPC | , | | 0010 | | □ |
| 03529 | UFC | , | 03 | 1759 | 17E9 | □ |
| 03534 | SPC | , | | 0000 | | □ |
| 03539 | SET | B | | 0004 | | □ |
| 03544 | LOD | 8 | | 2149 | | □ |
| 03549 | CMP | 4 | | 1759 | | □ |
| 03554 | TRE | L | | 3659 | ----- | □ |
| 03559 | TAA | I | 01 | 3659 | 36V9 | -----* |
| 03564 | LFC | , | 02 | 3509 | 35-9 | □ |
| 03569 | UFC | , | 03 | 1979 | 19G9 | □ |
| 03574 | SEL | 2 | | 0500 | | □ |
| 03579 | WR | R | | 1969 | | □ |
| 03584 | TAF | I | 06 | 3594 | 3VR4 | ----- |
| 03589 | TR | 1 | | 3644 | ----- | ----- |
| 03594 | SPC | , | | 0000 | | ----- |
| 03599 | SET | B | | 0006 | | □ |
| 03604 | LDA | * | | 1759 | | □ |
| 03609 | UNL | 7 | | 1798 | | □ |
| 03614 | LDA | # | | 2149 | | □ |
| 03619 | UNL | 7 | | 1813 | | □ |
| 03624 | SEL | 2 | | 0500 | | □ |
| 03629 | WR | R | | 1764 | | □ |
| 03634 | WR | R | | 1785 | | □ |
| 03639 | WR | R | | 1800 | | □ |
| 03644 | TAC | I | 03 | 3654 | 36E4 | ----- |
| 03649 | TR | 1 | | 3659 | ----- | -----* |
| 03654 | HLT | J | | 0002 | | ----- |
| 03659 | CMP | 4 | 01 | 1284 | 12Y4 | ----- |
| 03664 | TRE | L | | 3784 | ----- | ----- |
| 03669 | ADM | 6 | 03 | 1284 | 12H4 | □ |
| 03674 | AAM | @ | 06 | 3614 | 3WJ4 | □ |
| 03679 | AAM | @ | 06 | 3499 | 3UR9 | □ |
| 03684 | AAM | @ | 06 | 3544 | 3VM4 | □ |
| +---03689 | TR | 1 | | 3499 | | □ |

FINAL ADDRESS WORD OK

T-O *00X-WR 2001*

T-O *CHANNEL ADDRESS WORD*
T-O *ACTUAL--XXXXXX*
T-O *CORRECT-XXXXXX*

Q15 ALL FINAL ADDRESS WORDS CHKED

| | | | | | | |
|---------|-------|-----|----|------|-------|-------|
| P13.... | 03694 | NOP | A | 3714 | | □ |
| | 03699 | RCV | U | 3245 | | □ |
| | 03704 | TZB | 05 | 2409 | 2U 9 | ----- |
| +--- | 03709 | TR | 1 | 3464 | | □ |
| | 03714 | LFC | , | 2764 | 2704 | □ |
| | 03719 | UFC | , | 3729 | 37B9 | □ |
| | 03724 | UNL | 7 | 03 | 1279 | 12G9 |
| ••• | 03729 | LFC | , | 02 | 0000 | 00-0 |
| | 03734 | UFC | , | 03 | 3739 | 37C9 |
| | 03739 | SEL | 2 | 0000 | | □ |
| | 03744 | IOF | 3 | 0000 | | □ |
| | 03749 | TRS | 0 | 3754 | ----- | ----- |
| | 03754 | RWD | 3 | 0002 | | ----- |
| | 03759 | CMP | 4 | 01 | 1279 | 12X9 |
| | 03764 | TRE | L | 0669 | ----- | ----- |
| | 03769 | ADM | 6 | 03 | 1279 | 12G9 |
| | 03774 | AAM | @ | 06 | 3729 | 3XK9 |
| +--- | 03779 | TR | 1 | 3729 | | □ |

TEST FOR CHAN RDY PRIOR TO WR
CHECK FINAL ADDR WD

PROCESSING OF ENDS-OF-FILE
--REWIND TAPES AND
TRANSFER TO TEST FOR CHAN
RDY PRIOR TO WR

D03 TEST FOR CHAN RDY PRIOR TO WR

Q14..... 03784 UNL 7 03 1289 12H9 □
 R17..... 03789 UNL 7 03 1279 12G9 □
 □ 03794 LFC , 02 2764 2704 □
 □ 03799 UFC , 03 3804 38E4 □
 . . . 03804 LFC , 02 0000 00-0 □
 I □ 03809 UFC , 03 3814 38A4 □
 I □ 03814 SEL 2 0000 □
 I . . . 03819 TRR 0 01 3829 38S9--■
 I +--- 03824 TR 1 3819 □ I
 I □ 03829 BSP 3 0004 . . . ■ I
 I □ 03834 CMP 4 01 1279 12X9 □
 I □ 03839 TRE L 3859--■
 I □ 03844 ADM 6 03 1279 12G9 □ I
 I □ 03849 AAM @ 06 3804 3Y-4 □ I
 I --- 03854 TR 1 3804 □ I
 □□□□□□□□□□□□□□□□□□□□□□□□□□

BACKSPACING TAPES FOR
SUBSEQUENT RD AND CMP

BACKSPACING COMPLETED--NOW RD

□ 03859 UNL 7 03 1279 12G9 . . . I
 □ 03864 LFC , 02 2764 2704 □
 □ 03869 UFC , 03 3914 39A4 □
 □ 03874 TMC 0 11 3884 3QH4--■
 □ 03879 TR 1 3894--■
 □ 03884 SEL 2 0500 . . . ■ I
 □ 03889 WR R 1957 □ I
 □ 03894 LFC , 02 1554 15N4 . . . I
 □ 03899 UFC , 03 3939 39C9 □
 □ 03904 SET B 09 0006 0-6 □
 □ 03909 LOD 8 09 1577 1NX7 □
 . . . 03914 LFC , 02 0000 00-0 □
 I □ 03919 UFC , 03 3924 39B4 □
 I □ 03924 SEL 2 0000 □
 I . . . 03929 TRR 0 01 3939 39T9--■
 I +--- 03934 TR 1 3929 □ I
 I □ 03939 RD Y 0000 . . . ■ I
 I □ 03944 CMP 4 01 1279 12X9 □
 I □ 03949 TRE L 4099--S16 READING INITIATED
 I □ 03954 ADM 6 03 1279 12G9 □
 I □ 03959 AAM @ 06 3914 3ZJ4 □
 I □ 03964 AAM @ 09 3939 3RT9 □
 I --- 03969 TR 1 3914 □
 □□□□□□□□□□□□□□□□□□□□□□□□□□

READ ALL WRITTEN RECORDS
INTO UNLOADING AREAS

T-O *00X-901*

STORE 003000 IN ASU 09

□ 03974 SET B 2200 □
 □ 03979 UNL 7 03 1279 12G9 □
 □ 03984 SET B 12 0004 0&04 □
 □ 03989 LOD 8 12 1269 1B69 □
 . . . 03994 RCV U 1500R V00R □
 I □ 03999 TCT , 08 1000R -0R □
 I □ 04004 CMP 4 12 1279 1B79 □
 I □ 04009 TRE L 4024--■
 I □ 04014 ADM 6 03 1279 12G9 □ I
 I +--- 04019 TR 1 3994 □ I
 I □ 04024 TMC 0 11 4034 4-C4--■
 I □ 04029 TR 1 4099--S16
 I □ 04034 SEL 2 0500 . . . ■ I
 I □ 04039 WR R 1943 □
 I □ 04044 TR 1 4099--S16
 □□□□□□□□□□□□□□□□□□□□□□□□□□

2.48 MILLI-SEC DELAY

12 5000-CHARACTER
TCT INSTRUCTIONS
DESIGNED TO OVERLAP
CHANNEL READ OPERATIONS
--CALCULATED TO LAST
ABOUT 24 TO 30 MILLI-SEC

T-O *00X-TCT, 901*

□ 04049 SET B 2200 □
 □ 04054 SET B 09 0004 0- 4 □
 □ 04059 LOD 8 09 2144 2JU4 □
 □ 04064 UNL 7 03 1279 12G9 □
 I . . . 04069 TIP , 14 4074 4&P4--■
 I □ 04074 LIP , 15 3700 3G&0 . . . I
 I □ 04079 CMP 4 09 1279 1KX9 □
 I □ 04084 TRE L 4099--S16 LEAVE TIP-LIP LOOP
 I □ 04089 ADM 6 03 1279 12G9 □
 I --- 04094 TR 1 4069 □
 □□□□□□□□□□□□□□□□□□□□□□□□□□

2.48 MILLI-SEC DELAY

TIP-LIP LOOP, DESIGNED
TO OVERLAP CHAN WRITE
OPERATIONS--CALCULATED
TO LAST ABOUT 24 MILLI-SEC

TEST FOR CHAN CHK BEFORE
PROCEEDING TO CMP UNLOAD
AREA WITH THE ORIGINAL
GENERATED RECORDS

CHAN CHK

ALL CHANNELS READY AND TESTED
FOR CHAN CHKS--NEXT,
PROCESS ANY CHAN CHKS

STORE TWO CHARACTERS FROM
READ 03 IN THE CHAN CHK
TYPE-OUT WORKING AREA

SST FOR CHAN 24

SST FOR CHAN 23

SST FOR CHAN 21

SST FOR CHAN 22

| I | □□□□□□□□□□□□□□ | V | □□□□□□□□□□□□ | I | | | | | |
|---|------------------|---|--------------|-----------------------|---|-----|--|--|--|
| I | □ 04194 RCV U | | 4142 | | □ | | | | |
| I | □ 04199 TZB • 04 | | 4214 | 4S14- S - | ■ | ■ | | | |
| I | □ 04204 RD Y 03 | | 1605 | 16&5 | □ | I | | | |
| I | □ 04209 TR 1 | | 4269 | ----- | ■ | ■ | | | |
| I | □ 04214 TZB • 03 | | 4229 | 42B9 ■■■■■ | ■ | ■ | | | |
| I | □ 04219 RD Y 03 | | 1625 | 16B5 | □ | I | | | |
| I | □ 04224 TR 1 | | 4269 | ----- | ■ | ■ | | | |
| I | □ 04229 TZB • 02 | | 4249 | 42M9 ■■■■■ | ■ | ■ | | | |
| I | □ 04234 TZB • 01 | | 4259 | 42V9 ■■■■■ | ■ | ■ | | | |
| I | □ 04239 RD Y 03 | | 1620 | 16B0 | □ | I I | | | |
| I | □ 04244 TR 1 | | 4269 | ----- | ■ | ■ | | | |
| I | □ 04249 RD Y 03 | | 1610 | 16A0 ■■■■■ | ■ | ■ | | | |
| I | □ 04254 TR 1 | | 4269 | ----- | ■ | ■ | | | |
| I | □ 04259 RD Y 03 | | 1615 | 16A5 ■■■■■ | ■ | ■ | | | |
| I | □ 04264 TR 1 | | 4269 | ----- | ■ | ■ | | | |
| I | • 04269 TRR 0 01 | | 4164 | 41W4 ■■■■■ | ■ | ■ | | | |
| I | --- 04274 TR 1 | | 4269 | | □ | | | | |

PROCESSING OF CHAN CHKS

T-0 CHAN CHK 00X-RD

CHECKING THAT
RD 03 HAS BEEN
COMPLETED ON ALL
CHANNELS

ALL CHAN RDY

T16.....
 □ 04379 SET B 0002
 □ 04384 LOD 8 1606
 □ 04389 UNL 7 1671
 □ 04394 LOD 8 1611
 □ 04399 UNL 7 1674
 □ 04404 LOD 8 1616
 □ 04409 UNL 7 1677
 □ 04414 LOD 8 1621
 □ 04419 UNL 7 1680
 □ 04424 LOD 8 1626
 □ 04429 UNL 7 1683
 □ 04434 SEL 2 0500
 □ 04439 WR R 1656
 U16.....
 □ 04444 TAC I 03 4454 44E4--
 □ 04449 TR 1 4459-----
 □ 04454 HLT J 0003.....
 □ 04459 CHR 3 13 0000 0& 0 . . .
 □ 04464 SET B 09 0004 0- 4
 □ 04469 LOD 8 09 1574 1NX4
 □ 04474 CMP 4 09 1289 1KY9
 □ 04479 TRE L 4869-----Z18
 □ 04484 ADM 6 03 1289 12H9
 □ 04489 TR 1 3789-----R15

STORING RD 03
 CHARACTERS IN
 CHAN-CHK STATUS-
 TRGRS TYPE-OUT

T-O *STATUS TRGRS--20,21,
 22,23,24

V16.....
 □ 04459 CHR 3 13 0000 0& 0 . . .
 □ 04464 SET B 09 0004 0- 4
 □ 04469 LOD 8 09 1574 1NX4
 □ 04474 CMP 4 09 1289 1KY9
 □ 04479 TRE L 4869-----Z18
 □ 04484 ADM 6 03 1289 12H9
 □ 04489 TR 1 3789-----R15

CHAN CHK 3-PASS COUNTER--
 IF CHAN CHK PERSISTS AFTER
 3 PASSES, THEN TRANSFER TO
 912 SWITCH AT END OF
 OF ROUTINE 00X

W16.....
 □ 04494 SET B 09 0006 0- 6
 □ 04499 LOD 8 09 1569 1NW9
 □ 04504 SET B 10 0004 0--4
 □ 04509 LOD 8 10 1558 1NN8
 □ 04514 SET B 11 0006 0-6
 □ 04519 LOD 8 11 1920 1RB0
 □ 04524 LFC , 02 1859 18N9
 □ 04529 UFC , 03 4614 46A4
 □ 04534 LFC , 02 2764 2704
 □ 04539 UFC , 03 4589 45H9
 □ 04544 LFC , 02 1869 1809
 □ 04549 UFC , 03 4694 4614
 □ 04554 UFC , 03 4779 47G9
 □ 04559 SET B 12 0006 0&06
 □ 04564 LOD 8 12 1926 1I26
 □ 04569 UNL 7 03 1284 12H4
 □ 04574 LFC , 02 1864 1804
 □ 04579 UFC , 03 4619 46A9
 □ 04584 UNL 7 03 1279 12G9
 □ 04589 LFC , 02 0000 00-0
 □ 04594 UFC , 03 4604 46&4
 □ 04599 UNL 7 04 4710 4X10
 □ 04604 SEL 2 0000

COMPARE UNLOADING AREA
 WITH ORIGINAL GENERATED
 RECORDS--ALSO CHECK
 FOR THE CORRECT FINAL
 ADDRESS WORD IN EACH
 COMMUNICATION CHANNEL

000250 STORED IN ASU 09
 0008 STORED IN ASU 10
 001250 STORED IN ASU 11
 000750 STORED IN ASU 12

X18.....
 □ 04609 SET B 0250
 □ 04614 LOD 8 0000
 □ 04619 CMP 4 0000
 □ 04624 TRE L 4634-----
 □ 04629 SGN T 15 4710 4GA0
 □ 04634 CMP 4 10 1279 1KP9 . . .
 □ 04639 TRE L 4664-----Y18
 □ 04644 ADM 6 03 1279 12G9
 □ 04649 AAM @ 09 4614 40/4
 □ 04654 AAM @ 09 4619 40/9
 ± 04659 TR 1 4614

COMPARING RECORDS

| | | | | | | |
|-------|-----|---|----|------|-------|-----|
| 04664 | LFC | , | 02 | 4602 | 46-2 | □ |
| 04669 | UFC | , | 03 | 4672 | 46G2 | □ |
| 04674 | SPC | , | | 0010 | | □ |
| 04679 | UFC | , | 03 | 1759 | 17E9 | □ |
| 04684 | SPC | , | | 0000 | | □ |
| 04689 | SET | B | | 0004 | | □ |
| 04694 | LOD | 8 | | 0000 | | □ |
| 04699 | CMP | 4 | | 1759 | | □ |
| 04704 | TRE | L | | 4714 | ----- | ▀ |
| 04709 | SGN | T | 15 | 4710 | 4GAO | □ I |

**CHECKING FINAL
ADDRESS WORD**

| | | | | | |
|-------|-----|---|------|---------|---------|
| 04714 | NOP | A | 4724 | • • • • | ■ ■ |
| 04719 | TR | 1 | 4824 | - - - - | ■ ■ |
| 04724 | TAA | I | 01 | 4824 | 48S4 |
| 04729 | LFC | , | 02 | 4604 | 46-4 |
| 04734 | UFC | , | 03 | 1909 | 19&9 |
| 04739 | SEL | 2 | | 0500 | |
| 04744 | WR | R | | 1899 | |
| 04749 | TAF | I | 06 | 4759 | 4XN9 |
| 04754 | TR | 1 | | 4809 | - - - - |
| 04759 | SPC | , | | 0000 | • • • • |
| 04764 | SET | B | | 0006 | |
| 04769 | LDA | * | | 1759 | |
| 04774 | UNL | 7 | | 1798 | |
| 04779 | LDA | * | | 0000 | |
| 04784 | UNL | 7 | | 1813 | |
| 04789 | SEL | 2 | | 0500 | |
| 04794 | WR | R | | 1764 | |
| 04799 | WR | R | | 1785 | |
| 04804 | WR | R | | 1800 | |
| 04809 | TAC | I | 03 | 4819 | 48A9 |
| 04814 | TR | 1 | | 4824 | - - - - |
| 04819 | HLT | J | | 0004 | • • • • |

TYPE-OUT COMPARE ERRORS
FOR EACH CHANNEL--
THEN PROCEED TO THE
912 SWITCH AT END OF
ROUTINE 00X

T-0 00X-RD 2001

| | | | | | | | | |
|-------|-----|---|----|------|------|---|---|---|
| 04824 | CMP | 4 | 01 | 1284 | 12Y4 | • | • | • |
| 04829 | TRE | L | | 4869 | - | ■ | — | — |
| 04834 | ADM | 6 | 03 | 1284 | 12H4 | □ | I | |
| 04839 | AAM | @ | 06 | 4589 | 4VQ9 | □ | I | |
| 04844 | AAM | @ | 06 | 4779 | 4XP9 | □ | I | |
| 04849 | AAM | @ | 06 | 4694 | 4WR4 | □ | I | |
| 04854 | AAM | @ | 11 | 4614 | 40A4 | □ | I | |
| 04859 | AAM | @ | 12 | 4619 | 4F19 | □ | I | |
| 04864 | TR | | 1 | 4584 | - | ■ | — | — |

T-0 CHANNEL ADDRESS WORD
T-0 ACTUAL--ZZZZZZ
T-0 CORRECT-ZZZZZZ

INCREMENT LOD ADDR BY 1250
INCREMENT CMP ADDR BY 750

| | | | | | | |
|-------|-----|---|----|------|------|---|
| 04869 | TMC | 0 | 11 | 4879 | 4QG9 | - |
| 04874 | TR | 1 | | 4889 | - | - |
| 04879 | SEL | 2 | | 0500 | • | • |
| 04884 | WR | R | | 1957 | | |
| 04889 | TAB | I | 02 | 4904 | 49-4 | - |
| 04894 | UNL | 7 | 04 | 4900 | 4Z00 | |
| 04899 | TR | 1 | | 0000 | | |
| 04904 | NOP | A | | 4919 | • | • |
| 04909 | SGN | T | 15 | 4900 | 4I&0 | |
| 04914 | UNL | 7 | 03 | 1294 | 12I4 | |
| 04919 | SET | B | | 0004 | | |
| 04924 | LOD | 8 | | 1246 | | |
| 04929 | CMP | 4 | | 1294 | | |
| 04934 | TRE | L | | 4949 | - | - |
| 04939 | ADM | 6 | 03 | 1294 | 12I4 | |
| 04944 | TR | 1 | | 2234 | - | - |
| 04949 | SEL | 2 | | 0500 | • | • |
| 04954 | WR | R | | 1830 | | |
| 04959 | UNL | 7 | 04 | 4900 | 4Z00 | |
| 04964 | TR | 1 | | 2234 | - | - |

912 SWITCH-----912 SWITCH

T-O *00X-901*
LOOP-IN BASIC PROG. IF 912 ON
PROCEED TO NEXT ROUTINE

TYPE-OUT
00X-100 PASSES
AFTER EVERY
100 PASSES OF
BASIC PROGRAM

TO BEGINNING OF BASIC PROG.
T-O *00X-100 PASSES*
TO BEGINNING OF BASIC PROG.

ROUTINE 001 DETECTS DATA
WORD DROPPAGE WHEN WRITING ON
ALL CHANNELS DURING A TCT

| | | | | |
|----------|---------|----------|-----------|-----|
| A06..... | 8.04969 | SET B | 0001 | |
| | 04974 | LOD 8 | 2040 | |
| | 04979 | UNL 7 | 1709 | |
| | 04984 | UNL 7 | 1701 | |
| | 04989 | UNL 7 | 1741 | |
| | 04994 | UNL 7 | 1901 | |
| | 04999 | UNL 7 | 1971 | |
| | 05004 | UNL 7 | 1945 | |
| | 05009 | UNL 7 | 1959 | |
| | 05014 | UNL 7 | 1832 | |
| | 05019 | UNL 7 | 3422 | |
| | 05024 | UNL 7 | 3652 | |
| | 05029 | UNL 7 | 4452 | |
| | 05034 | UNL 7 | 4817 | |
| | 05039 | LFC , 02 | 2004 20-4 | |
| | 05044 | UFC , 03 | 2834 28C4 | |
| | 05049 | LFC , 02 | 2054 20N4 | |
| | 05054 | UFC , 03 | 3949 39D9 | |
| | 05059 | LFC , 02 | 2079 20P9 | |
| | 05064 | UFC , 03 | 1599 1519 | |
| | 05069 | LFC , 02 | 2064 2004 | |
| | 05074 | UFC , 03 | 1864 18F4 | |
| | 05079 | LFC , 02 | 2104 21-4 | |
| | 05084 | UFC , 03 | 2854 28E4 | |
| | 05089 | LFC , 02 | 2094 20R4 | |
| | 05094 | UFC , 03 | 4864 48F4 | |
| | 05099 | LFC , 02 | 2034 20L4 | |
| | 05104 | UFC , 03 | 3059 30E9 | |
| | 05109 | UFC , 03 | 3064 30F4 | |
| | 05114 | LFC , 02 | 2014 20J4 | |
| | 05119 | UFC , 03 | 3689 36H9 | |
| | 05124 | LFC , 02 | 2194 21R4 | |
| | 05129 | UFC , 03 | 3484 34H4 | |
| | 05134 | LFC , 02 | 2114 21J4 | |
| | 05139 | UFC , 03 | 4899 4819 | |
| | 05144 | TR 1 | 2234 | J09 |

00X-LONG WRITE
CHAN CHK 00X-WR
CHAN CHK 00X-RD
00X-RD 2001
00X-WR 2001
00X-TCT, 901
00X-901
00X-100 PASSES
HALT AFTER CHAN CHK ON WRITE
HALT AFTER ADDR WD CHK ON WR
HALT AFTER CHAN CHK ON READ
HALT AFTER COMPARE ERROR
INCLUDE TCT DURING WRITE
BYPASS TCT DURING READ
WR XXXX
CMP XXXX
SETS BEGINNING OF WRITE FIELD
SETS BEGINNING OF CMP FIELD
SETS LENGTH OF DELAY

CHECKING
FINAL ADDR
WD AFTER WR
TRANSFER TO NEXT ROUTINE
BEGIN BASIC PROG.

ROUTINE 002 DETECTS DATA
WORD DROPPAGE WHEN READING ON
ALL CHANNELS DURING A TCT

| | | | |
|-------|-----|------|-----------|
| 05149 | SET | B | 0001 |
| 05154 | L0D | 8 | 2041 |
| 05159 | UNL | 7 | 1709 |
| 05164 | UNL | 7 | 1701 |
| 05169 | UNL | 7 | 1741 |
| 05174 | UNL | 7 | 1901 |
| 05179 | UNL | 7 | 1971 |
| 05184 | UNL | 7 | 1945 |
| 05189 | UNL | 7 | 1959 |
| 05194 | UNL | 7 | 1832 |
| 05199 | UNL | 7 | 3422 |
| 05204 | UNL | 7 | 3652 |
| 05209 | UNL | 7 | 4452 |
| 05214 | UNL | 7 | 4817 |
| 05219 | LFC | , 02 | 2009 20-9 |
| 05224 | UFC | , 03 | 2834 28C4 |
| 05229 | LFC | , 02 | 2059 20N9 |
| 05234 | UFC | , 03 | 3949 39D9 |
| 05239 | LFC | , 02 | 2079 20P9 |
| 05244 | UFC | , 03 | 1599 15I9 |
| 05249 | LFC | , 02 | 2064 2004 |
| 05254 | UFC | , 03 | 1864 18F4 |
| 05259 | LFC | , 02 | 2104 21-4 |
| 05264 | UFC | , 03 | 2854 28E4 |
| 05269 | LFC | , 02 | 2094 20R4 |
| 05274 | UFC | , 03 | 4864 48F4 |
| 05279 | LFC | , 02 | 2029 20K9 |
| 05284 | UFC | , 03 | 3059 30E9 |
| 05289 | UFC | , 03 | 3064 30F4 |
| 05294 | LFC | , 02 | 2014 20J4 |
| 05299 | UFC | , 03 | 3689 36H9 |
| 05304 | LFC | , 02 | 2194 21R4 |
| 05309 | UFC | , 03 | 3484 34H4 |
| 05314 | LFC | , 02 | 2119 21J9 |
| 05319 | UFC | , 03 | 4899 48I9 |
| 05324 | TR | 1 | 2234 |

00X-LONG WRITE
CHAN CHK 00X-WR
*CHAN CHK 00X-RD
00X-RD 2001
00X-WR 2001
00X-TCT,901
00X-901
00X-100 PASSES
HALT AFTER CHAN CHK ON WRITE
HALT AFTER ADDR WD CHK ON WR
HALT AFTER CHAN CHK ON READ
HALT AFTER COMPARE ERROR

BYPASS TCT DURING WRITE

INCLUDE TCT DURING READ

WR XXXX

CMP XXXXX

SETS BEGINNING OF WRITE FIELD

SETS BEGINNING OF CMP FIELD

SETS LENGTH OF DELAY

CHECKING
FINAL ADDR
WD AFTER WR

TRANSFER TO NEXT ROUTINE
BEGIN BASIC PROG.

J09

ROUTINE 003 DETECTS ERRORS
IN WRITING WHEN LIP AND WR
OCCUR SIMULTANEOUSLY
AND WHEN ...2600126001... IS
THE RECORD BEING WRITTEN

| | | | | |
|-------|-----|------|------|------|
| 05329 | SET | B | 0001 | |
| 05334 | LOD | 8 | 2042 | |
| 05339 | UNL | 7 | 1709 | |
| 05344 | UNL | 7 | 1701 | |
| 05349 | UNL | 7 | 1741 | |
| 05354 | UNL | 7 | 1901 | |
| 05359 | UNL | 7 | 1971 | |
| 05364 | UNL | 7 | 1945 | |
| 05369 | UNL | 7 | 1959 | |
| 05374 | UNL | 7 | 1832 | |
| 05379 | UNL | 7 | 3422 | |
| 05384 | UNL | 7 | 3652 | |
| 05389 | UNL | 7 | 4452 | |
| 05394 | UNL | 7 | 4817 | |
| 05399 | LFC | ♦ 02 | 2189 | 21Q9 |
| 05404 | UFC | ♦ 03 | 2834 | 28C4 |
| 05409 | LFC | ♦ 02 | 2054 | 20N4 |
| 05414 | UFC | ♦ 03 | 3949 | 39D9 |
| 05419 | LFC | ♦ 02 | 2084 | 20Q4 |
| 05424 | UFC | ♦ 03 | 1599 | 15I9 |
| 05429 | LFC | ♦ 02 | 2069 | 2009 |
| 05434 | UFC | ♦ 03 | 1864 | 18F4 |
| 05439 | LFC | ♦ 02 | 2109 | 21-9 |
| 05444 | UFC | ♦ 03 | 2854 | 28E4 |
| 05449 | LFC | ♦ 02 | 2099 | 20R9 |
| 05454 | UFC | ♦ 03 | 4864 | 48F4 |
| 05459 | LFC | ♦ 02 | 2039 | 20L9 |
| 05464 | UFC | ♦ 03 | 3059 | 30E9 |
| 05469 | UFC | ♦ 03 | 3064 | 30F4 |
| 05474 | LFC | ♦ 02 | 2019 | 20J9 |
| 05479 | UFC | ♦ 03 | 3689 | 36H9 |
| 05484 | LFC | ♦ 02 | 2199 | 21R9 |
| 05489 | UFC | ♦ 03 | 3484 | 34H4 |
| 05494 | LFC | ♦ 02 | 2124 | 21K4 |
| 05499 | UFC | ♦ 03 | 4899 | 48I9 |
| 05504 | TR | 1 | 2234 | |

00X-LONG WRITE
CHAN CHK 00X-WR
CHAN CHK 00X-RD
00X-RD 2001
00X-WR 2001
00X-TCT,901
00X-901
00X-100 PASSES
HALT AFTER CHAN CHK ON WRITE
HALT AFTER ADDR WD CHK ON WR
HALT AFTER CHAN CHK ON READ
HALT AFTER COMPARE ERROR
BYPASS TCT DURING WRITE
BYPASS TGT DURING READ
WR XXXX
CMP XXXXX
SETS BEGINNING OF WRITE FIELD
SETS BEGINNING OF CMP FIELD
SETS LENGTH OF DELAY
CHECKING
FINAL ADDR
WD AFTER WR
TRANSFER TO NEXT ROUTINE
BEGIN BASIC PROG.

J09

ROUTINE 004 DETECTS ERRORS
IN READING WHEN LIP AND RD
OCCUR SIMULTANEOUSLY AND
WHEN ...2600226002.... IS THE
RECORD BEING READ

| | | | | |
|-------|-----|------|------|------|
| 05509 | SET | B | 0001 | |
| 05514 | LOD | 8 | 2043 | |
| 05519 | UNL | 7 | 1709 | |
| 05524 | UNL | 7 | 1701 | |
| 05529 | UNL | 7 | 1741 | |
| 05534 | UNL | 7 | 1901 | |
| 05539 | UNL | 7 | 1971 | |
| 05544 | UNL | 7 | 1945 | |
| 05549 | UNL | 7 | 1959 | |
| 05554 | UNL | 7 | 1832 | |
| 05559 | UNL | 7 | 3422 | |
| 05564 | UNL | 7 | 3652 | |
| 05569 | UNL | 7 | 4452 | |
| 05574 | UNL | 7 | 4817 | |
| 05579 | LFC | , 02 | 2009 | 20-9 |
| 05584 | UFC | , 03 | 2834 | 28C4 |
| 05589 | LFC | , 02 | 2184 | 21Q4 |
| 05594 | UFC | , 03 | 3949 | 39D9 |
| 05599 | LFC | , 02 | 2089 | 20Q9 |
| 05604 | UFC | , 03 | 1599 | 15I9 |
| 05609 | LFC | , 02 | 2074 | 20P4 |
| 05614 | UFC | , 03 | 1864 | 18F4 |
| 05619 | LFC | , 02 | 2109 | 21-9 |
| 05624 | UFC | , 03 | 2854 | 28E4 |
| 05629 | LFC | , 02 | 2099 | 20R9 |
| 05634 | UFC | , 03 | 4864 | 48F4 |
| 05639 | LFC | , 02 | 2029 | 20K9 |
| 05644 | UFC | , 03 | 3059 | 30E9 |
| 05649 | UFC | , 03 | 3064 | 30F4 |
| 05654 | LFC | , 02 | 2019 | 20J9 |
| 05659 | UFC | , 03 | 3689 | 36H9 |
| 05664 | LFC | , 02 | 2204 | 22-4 |
| 05669 | UFC | , 03 | 3484 | 34H4 |
| 05674 | LFC | , 02 | 2129 | 21K9 |
| 05679 | UFC | , 03 | 4899 | 48I9 |
| 05684 | TR | 1 | 2234 | |

J09

00X-LONG WRITE
CHAN CHK 00X-WR
CHAN CHK 00X-RD
00X-RD 2001
00X-WR 2001
00X-TCT, 901
00X-901
00X-100 PASSES
HALT AFTER CHAN CHK ON WRITE
HALT AFTER ADDR WD CHK ON WR
HALT AFTER CHAN CHK ON READ
HALT AFTER COMPARE ERROR
BYPASS TCT DURING WRITE
BYPASS TGT DURING READ
WR XXXX
CMP XXXX
SETS BEGINNING OF WRITE FIELD
SETS BEGINNING OF CMP FIELD
SETS LENGTH OF DELAY

CHECKING
FINAL ADDR
WD AFTER WR
TRANSFER TO NEXT ROUTINE
BEGIN BASIC PROG.

AB24.....05689 LIM , 07 0000 0 &0
 05694 UNL 7 03 1279 12G9
 05699 LFC , 02 1369 1309
 05704 UFC , 03 5749 57D9
 05709 LFC , 02 1364 1304
 05714 UFC , 03 5724 57B4
 .05719 SET B 0004
 05724 LOD 8 0000
 05729 UNL 7 5734
 05734 SEL 2 0000
 05739 TRR O 01 5799 57Z9--
 05744 SET B 0004
 05749 LOD 8 0000
 05754 UNL 7 5759
 05759 SEL 2 0000
 05764 TRR O 01 5799 57Z9--
 05769 CMP 4 01 1279 12X9
 05774 TRE L 6009-----AD24
 05779 AAM @ 06 5724 5XK4
 05784 AAM @ 06 5749 5XM9
 05789 ADM 6 03 1279 12G9
 +---05794 TR 1 5719
I

ROUTINE 005 TESTS FOR
FUNCTIONING OF THE CHANNEL
RESET INSTRUCTION

SEARCHING FOR A READY
TAPE UNIT TO WRITE ON

05799 LFC , 02 5732 57L2--
 05804 UFC , 03 5807 58&7
 05809 SPC , 0000
 05814 LFC , 02 6029 60K9
 05819 SPC , 0000
 05824 WR R 6080
 .05829 TRR O 01 5839 58T9--
 +---05834 TR 1 5829
 05839 CHR 3 13 0000 0& 0
 05844 EIM , 06 0000 0 -0
 05849 NOP A 0000
 05854 NOP A 0000
 05859 LIM , 07 0000 0 &0

WRITE SHORT RECORD---
THEN CHANNEL RESET---
THEN ENTER INTERRUPT
MODE----
AN INTERRUPT TO THE
ERROR ROUTINE WILL
OCCUR IF THE CHANNEL
RESET FAILED TO RESET
OFF THE COMMUNICATION
CHANNEL INTERRUPT CALL
TRIGGER THAT WAS TURNED
ON AT THE END OF WRITING

AC24.....05859 LIM , 07 0000 0 &0

05864 TMC O 11 5874 5QG4--
 05869 TR 1 5884-----
 05874 SEL 2 0500*****
 05879 WR R 1847
 05884 TAB I 02 5899 58R9--
 05889 UNL 7 04 5895 5Y95
 05894 TR 1 6094-----AE25
 05899 NOP A 5914*****
 05904 SGN T 15 5895 5H15
 05909 UNL 7 03 1294 12I4
 05914 SET B 0004
 05919 LOD 8 1246
 05924 CMP 4 1294
 05929 TRE L 5944-----
 05934 ADM 6 03 1294 12I4
 +---05939 TR 1 5689
 05944 SEL 2 0500*****
 05949 WR R 1815
 05954 UNL 7 04 5895 5Y95
 +---05959 TR 1 5689

901 CHECK AND 912 SWITCH

T-O *005-901*
LOOP-IN ROUTINE IF 912 ON

TO ROUTINE 006
TYPE-OUT
005-100 PASSES
AFTER EVERY
100 PASSES
OF ROUTINE 005

TO BEGINNING OF ROUTINE 005

T-O *005-100 PASSES*

TO BEGINNING OF ROUTINE 005

```
05964 TAA I 01 5994 59Z4--  

05969 SEL 2 0500  

05974 WR R 6061  

05979 TAC I 03 5989 59H9--  

05984 TR 1 5994--  

05989 HLT J 0501...  

05994 EFM 3 14 0000 0E-0  

05999 LIP 15 3700 3G&0...  

06004 TR 1 5859--  

AC23
```

ERROR ROUTINE

T-O *005-CHR FAILURE*

```
AD23.....06009 SEL 2 0500  

06014 WR R 6030  

06019 HLT J 0502  

06024 TR 1 5689--  

AB23
```

T-O *NO TAPE UNITS 1 OR 2 READ

2 001 06025
3 06029 00 5964 5964
2 026 06055
2 001 06056
2 019 06075
2 001 06076
5 009 06085
2 001 06086

DATA
NO TAPE UNITS 1 OR 2 READY
005-CHR FAILURE
SHORT RECORD TO BE WRITTEN

ROUTINES 006-010

THESE ROUTINES TEST RD 01 ON A
READY CHANNEL, WITH WR 00 ON
ANOTHER READY CHANNEL. 916 ON
GIVES FURTHER ANALYSIS WHICH
SHOWS IF FAILURE IS LIKELY TO
BE CAUSED BY FLOATING
IG CHAN XX LINE, PG 30.12.04.1

AE23.....
 06094 RCV U 6274
 06099 BLM \$ 0005
 06104 LFC , 02 6304 63-4
 06109 UFC , 03 6174 61G4
 06114 LFC , 02 6309 63-9
 06119 UFC , 03 6184 61H4
 06124 LFC , 02 6299 62R9
 06129 UFC , 03 6214 62A4
 06134 SET B 11 0001 0-&1
 06139 LOD 8 11 6310 6LA0
 06144 SET B 12 0001 0&01
 06149 LOD 8 12 6310 6C10
 06154 SET B 13 0006 0&6
 06159 LOD 8 13 6319 6C/9
 06164 SET B 14 0006 0&-6
 06169 LOD 8 14 6325 6CK5

GENERATE A TABLE OF RDY. TAPES
INITIALIZING

PUT 0 IN ASU 11
 PUT 0 IN ASU 12
 PUT 000005 IN ASU 13
 PUT 000100 IN ASU 14

06174 SEL 2 2001
 06179 TRR O 01 6199 61Z9--
 06184 SEL 2 2002
 06189 TRR O 01 6209 62 9--
 06194 TR 1 6224--
 06199 LFC , 02 6174 61P4 . . . I
 06204 TR 1 6214--
 06209 LFC , 02 6184 61Q4 . . . I
 06214 UFC , 03 6274 62G4 . . . I
 06219 ADD G 11 6312 6LA2
 06224 AAM @ 13 6214 6B/4 . . . I
 06229 AAM @ 14 6174 6AP4
 06234 AAM @ 14 6184 6AQ4
 06239 ADD G 12 6312 6C12
 06244 CMP 4 12 6313 6C13
 06249 TRE L 6259--
 06254 TR 1 6174
 06259 CMP 4 11 6330 6LC0 . . . I

GENERATE TABLE

ADD 1 TO ASU 12
 COMPARE 5 TO ASU 12
 IF EQUAL - TABLE FINISHED

06259 CMP 4 11 6330 6LC0 . . . I
 06264 TRH K 6349-- AF26
 06269 TR 1 1154-- H06

TEST FOR TWO CHANNELS READY
 TWO READY
 TWO NOT RDY - TO END OF PROG RT.

2 025 06294 00 DATA, ADDRESSES, WORKING AREA
 2 001 06295
 3 06299 03 6274 62G4
 2 005 06304 00 2001
 2 005 06309 00 2002
 2 001 06310 0
 2 002 06312 AA
 2 001 06313 5
 2 006 06319 000005
 2 006 06325 000100
 2 004 06329
 2 001 06330 1
 2 003 06333 005
 2 003 06336 011
 2 005 06344 00

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PICK UP ADDRESSES
FROM TABLE AND PUT THEM IN
SELECT ADDRESSES

AF25.....
□ 06349 SET B 12 0003 0&03 □
□ 06354 LOD 8 12 6333 6C33 □
□ 06359 SET B 14 0004 0&-4 □
□ 06364 LOD 8 14 6329 6CK9 □
□□□□□□□□□□□□□□□□□□□□□□□

I

AG30.....
I □ 06369 SET B 0004 □
I □ 06374 LOD 8 6274 □
I □ 06379 RCV U 6274 □
I □ 06384 SND / 6279 □
I □ 06389 UNL 7 6294 □
I □ 06394 ADD G 12 6312 6C12 □
I □ 06399 CMP 4 12 6336 6C36 □
I □ 06404 TRE L 1154 -----H06
I □ 06409 CMP 4 14 6294 6BR4 □
+--- 06414 TRE L 6369 □
□□□□□□□□□□□□□□□□□□□□□

I

□ 06419 CMP 4 14 6274 6BP4 □
□ 06424 TRE L 6434 -----I
□ 06429 LFC , 02 6274 62P4 □ I
□ 06434 CMP 4 14 6279 6BP9 . . I
□ 06439 TRE L 6449 -----I
□ 06444 LFC , 02 6279 62P9 □ I
□ 06449 CMP 4 14 6284 6BQ4 . . I
□ 06454 TRE L 6464 -----I
□ 06459 LFC , 02 6284 62Q4 □ I
□ 06464 CMP 4 14 6289 6BQ9 . . I
□ 06469 TRE L 6479 -----I
□ 06474 LFC , 02 6289 62Q9 □ I
□□□□□□□□□□□□□□□□□□□□□

I

□ 06479 UFC , 03 6344 63D4 . . I
□ 06484 UFC , 03 6679 66G9 □
□ 06489 UFC , 03 7084 70H4 □
□ 06494 UFC , 03 6769 67F9 □
□□□□□□□□□□□□□□□□□□□□□

I

□ 06499 LFC , 02 6294 62R4 □
□ 06504 UFC , 03 6619 66A9 □
□ 06509 UFC , 03 6669 66F9 □
□ 06514 UFC , 03 6694 66I4 □
□ 06519 UFC , 03 6754 67E4 □
□□□□□□□□□□□□□□□□□□□□□

I

□ 06524 UNL 7 12 7437 7D37 □
□ 06529 UNL 7 12 7485 7D85 □
□ 06534 UNL 7 12 7548 7E48 □
□ 06539 UNL 7 12 7598 7E98 □
□ 06544 UNL 7 12 7631 7F31 □
□ 06549 UNL 7 12 7665 7F65 □
□ 06554 UNL 7 12 6748 6G48 □
□ 06559 UNL 7 12 7223 7B23 □
□ 06564 UNL 7 12 6933 6I33 □
□ 06569 UNL 7 12 6993 6I93 □
□ 06574 UNL 7 12 7338 7C38 □
□ 06579 UNL 7 12 7696 7F96 □
□ 06584 UNL 7 12 7073 7&73 □
□□□□□□□□□□□□□□□□□□□□□

I

NEXT PAGE

PUT 005 IN ASU 12

PUT BLANKS IN ASU 14

ROTATE TABLE AND FIND A READY
CHANNEL

STEP ASU 12 BY 1. IF IT IS 011
WE ARE THROUGH AND TRANS-
FER TO END OF PROG. ROUT
IF HIGH POSITION IN TABLE IS
BLANKS, ROTATE AGAIN

FIND ANOTHER READY TAPE FOR
WROO AND LOAD ITS ADDRESS

UNLOAD WROO TAPE ADDRESSES

UNLOAD RD01 TAPE ADDRESSES

UNLOAD ROUTINE NUMBER INTO
TYPE-OUTS

FROM PREVIOUS PAGE

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| | | | | | | |
|---|-------|-----|---|----|------|------|
| □ | 06589 | SET | B | 11 | 0002 | 0-82 |
| □ | 06594 | LOD | 8 | 11 | 6292 | 6KI2 |
| □ | 06599 | UNL | 7 | 11 | 6797 | 6PI7 |
| □ | 06604 | UNL | 7 | 11 | 7458 | 7ME8 |
| □ | 06609 | LOD | 8 | 11 | 6342 | 6LD2 |
| □ | 06614 | UNL | 7 | 11 | 6812 | 6QA2 |

UNLOAD CHANNEL NUMBERS FOR
FINDING FINAL ADDRESS
WORD

AH28
AH30

PUT RECORD ON RD 01 TAPE

06659 RCV U 2000M -00M
06664 BLM \$ 0410
06669 SEL 2 0000
06674 RD Y 01 2000- -0 -
06679 SEL 2 0000
06684 WR R 35000 E000
06689 TSA O 03 6769 67F9--

BLANK MEMORY AT
60,000-62,020

RD 01 INTO 60,000

| | | | | | | |
|---|---|---------|-----|------|-----------|--------------|
| I | I | □ 06694 | SEL | 2 | 0000 | □ |
| I | I | □ 06699 | TSA | 0 03 | 6709 67&9 | -■- |
| I | I | □ 06704 | TR | 1 | 6799 | -■-+--- |
| I | I | □ 06709 | TTC | 0 02 | 6724 67K4 | ■■■■■ |
| I | I | □ 06714 | TRS | 0 | 0669 | -■-+--- |
| I | I | □ 06719 | TR | 1 | 6619 | □ I |
| I | I | □ 06724 | TAA | I 01 | 6754 67V4 | ■■■■■ |
| I | I | □ 06729 | SEL | 2 | 0500 | □ I |
| I | I | □ 06734 | WR | R | 7435 | □ I |
| I | I | □ 06739 | TAC | I 03 | 6749 67D9 | -■- |
| I | I | □ 06744 | TR | 1 | 6754 | -■-+--- |
| I | I | □ 06749 | HLT | J | 0601 | ••••• ■•• I |
| I | I | □ 06754 | SEL | 2 | 0000 | ••••• ■••• I |
| I | I | □ 06759 | BSP | 3 | 0004 | □ I |
| I | I | □ 06764 | TR | 1 | 6659 | □ I |

SEL RD 01 TAPE

EDIT ON RD 01 TAPE

T-0 *XXX-CHAN CK-RD 01-CH-XX*

| | | | | | | | | | | |
|---|-------|-----|---|------|------|------|---|---|---|---|
| □ | 06799 | SPC | , | 0010 | • | • | • | • | • | I |
| □ | 06804 | UFC | , | 03 | 6809 | 68&9 | □ | | | |
| □ | 06809 | NOP | A | | 0004 | | □ | | | |
| □ | 06814 | SPC | , | | 0010 | | □ | | | |
| □ | 06819 | UFC | , | 03 | 6824 | 68B4 | □ | | | |
| □ | 06824 | NOP | A | | 0004 | | □ | | | |
| □ | 06829 | SPC | , | | 0000 | | □ | | | |
| □ | 06834 | SET | B | | 0004 | | □ | | | |
| □ | 06839 | LOC | B | | 6809 | | □ | | | |

CHECKING FINAL ADDRESS WORDS.
RD 01 CHANNEL

□ 06844 CMP 4 7469 □
□ 06849 TRE L 6859-----■
□ 06854 TR 1 6874-----■+-----AJ28
□ 06859 LOD 8 6824•••••■••■
□ 06864 CMP 4 7464 □
□ 06869 TRE L 7004-----■-----AK28
□□□□□□□□□□□□□□□□□□□□□□

WR 00 CHANNEL

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AJ27.....
06874 SET B 0006 □
06879 LDA # 6809 □
06884 UNL 7 7516 □
06889 SET B 0006 □
06894 LDA # 6824 □
06899 UNL 7 7579 □

06904 TAF I 06 6944 6ZM4---
06909 TAA I 01 6939 69T9---
06914 SEL 2 0500 □ I
06919 WR R 7596 □ I I
06924 TAC I 03 6934 69C4---
06929 TR 1 6939---
06934 HLT J 0002.....
06939 TR 1 6619---AH27

06944 TAA I 01 6999 6929---
06949 SEL 2 0500 □ I
06954 WR R 7470 □ I
06959 WR R 7503 □ I
06964 WR R 7518 □ I
06969 WR R 7533 □ I
06974 WR R 7566 □ I
06979 WR R 7581 □ I
06984 TAC I 03 6994 69I4---
06989 TR 1 6999---
06994 HLT J 0003.....
06999 TR 1 6619---AH27

AK27.....
07004 RCV U 1400M U00M □
07009 BLM \$ 0050 □
07014 SET B 0250 □
07019 LOD 8 2024R -24R □
07024 CMP 4 1424R U24R □
07029 TRE L 7084---AL29

07034 SET B 0004 □
07039 LOD 8 7628 □
07044 UNL 7 7019 □
07049 TAA I 01 7079 70X9---
07054 SEL 2 0500 □ I
07059 WR R 7629 □ I
07064 TAC I 03 7074 70G4---
07069 TR 1 7079---
07074 HLT J 0004.....
07079 TR 1 6619---AH27

T-0 *XXX-FINAL ADDR WDS INCORRECT*

T-0 ACTUAL ADDRESS WORD VS. CORRECT ADDRESS WORD IF 916 ON.

BLANK 250 MEM POS. 54000-54249

LOAD RD 01 AREA CMP VS BLANKS AT 54,049

RESTORE INITIAL ADDRESS 60,249

| | | | | |
|-------|-----|------|------------|------------|
| 07084 | SEL | 2 | 0000 | □ |
| 07089 | BSP | 3 | 0004 | □ |
| 07094 | RD | Y | 2300- | L00- □ |
| 07099 | TSA | O 03 | 7104 | 7164-■-■ |
| 07104 | SET | B 09 | 0006 | 0- 6 ■ I |
| 07109 | LOD | 8 09 | 1569 | 1NW9 □ |
| 07114 | SET | B 10 | 0000 | 0--0 □ |
| 07119 | SET | B 10 | 0008 | 0--8 □ |
| 07124 | SET | B | 0004 | □ |
| 07129 | LOD | 8 | 7683 | □ |
| 07134 | UNL | 7 | 7154 | □ |
| 07139 | LOD | 8 | 7687 | □ |
| 07144 | UNL | 7 | 7159 | □ |
| 07149 | SET | B | 0250 | □ |
| 07154 | LOD | 8 | 2324R | L24R □ |
| 07159 | CMP | 4 | 35249 | E249 □ |
| 07164 | TRE | L | 7174-----■ | -■ |
| 07169 | TR | 1 | 7194-----■ | -■ |
| 07174 | AAM | @ 09 | 7154 | 7JV4 ■ I |
| 07179 | AAM | @ 09 | 7159 | 7JV9 ■ I |
| 07184 | NTR | X 10 | 7154 | 7JN4 □ I |
| 07189 | TR | 1 | 7354-----■ | ----- AM30 |

BSP WR 00 TAPE
RD RECORD INTO 63,000

ASU 09 000250

ASU 10 SET 8 FOR NTR

INITIAL LOAD 63249
INITIAL CMP 35249

07194 TAF I 06 7234 7SL4 ~~-----~~
07199 TAA I 01 7229 72S9 -
07204 SEL 2 0500
07209 WR R 7694
07214 TAC I 03 7224 72B4 -
07219 TR 1 7229 -
07224 HLT J 0005 * * * * *
07229 TR 1 7354 ~~-----~~
AM30

916 SWITCH

T-0 *XXX-WR 00 RECORD
DOES NOT CMP*

| | | | | | | | | |
|---|-------|-----|---|------|------|------|---|---|
| □ | 07234 | SET | B | 0000 | • | • | • | • |
| □ | 07239 | SET | B | 0255 | | | | |
| □ | 07244 | SET | B | 08 | 0006 | 0-06 | | |
| □ | 07249 | LOD | 8 | 08 | 7740 | 7P40 | | |
| □ | 07254 | SET | B | 09 | 0005 | 0- 5 | | |
| □ | 07259 | LOD | 8 | 09 | 6689 | 60Y9 | | |
| □ | 07264 | SET | B | 10 | 0006 | 0--6 | | |
| □ | 07269 | LDA | # | 10 | 7154 | 7JN4 | | |
| □ | 07274 | SUB | P | 10 | 7728 | 7PK8 | | |
| □ | 07279 | ULA | * | 10 | 7284 | 7KQ4 | | |

ANALYSIS OF UNEQUAL WROO RECORD

PUT 000001 IN ASU 08

PUT INSTR AFTER WROO IN ASU 09

| | | | | | | |
|-------|-----|---|----|------|------|---|
| 07284 | CMP | 4 | 09 | 0000 | 0- | 0 |
| 07289 | TRE | L | | 7309 | - | - |
| 07294 | AAM | @ | 08 | 7284 | 7K84 | |
| 07299 | NTR | X | | 7284 | | |
| 07304 | TR | 1 | | 7199 | | |

| | | | | | | | |
|---|-------|-----|---|----|------|-------|--------|
| □ | 07309 | TAA | I | 01 | 7344 | 73U4 | ■■■■■ |
| □ | 07314 | SEL | 2 | | 0500 | | □ |
| □ | 07319 | WR | R | | 7694 | | □ |
| □ | 07324 | WR | R | | 7746 | | □ |
| □ | 07329 | TAC | I | 03 | 7339 | 73C9 | -■■■■■ |
| □ | 07334 | TR | I | | 7344 | ----- | ■■■■■ |
| □ | 07339 | HLT | J | | 0006 | ●●●●● | ■■■■■ |
| □ | 07344 | SET | B | | 0002 | ●●●●● | ■■■■■ |
| □ | 07349 | LOD | 8 | | 7733 | | □ |

T-O *XXX-WR 00 RECORD DOES NOT
COMPARE*
INSTR AFTER WR 00 IN RECORD
THIS T-O INDICATES PROBABLE
FAILURE OF THE RD 01 LINE, AND
COULD BE CAUSED BY FLOATING
IG CHAN XX LINE, PG 30-12-04-1

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AM29
□ 07354 SET B 09 0003 0-3 □
□ 07359 LOD 8 09 7693 70Z3 □
□ 07364 SET B 10 0003 0--3 □
□ 07369 LOD 8 10 7690 70R0 □
□ 07374 TAB I 02 7389 73Q9 □
□ 07379 UNL 7 09 7669 70W9 □ I
□ 07384 TR 1 6369-----AG26

PUT 000 IN ASU 09
PUT 100 IN ASU 10
TRANSFER IF 912 ON
IF NOT PUT 000 IN T-0

□ 07389 CMP 4 10 7669 7009 . . .
□ 07394 TRE L 7419-----
□ 07399 LOD 8 09 7669 70W9 □ I
□ 07404 ADD G 09 7679 70X9 □ I
□ 07409 UNL 7 09 7669 70W9 □ I
□ 07414 TR 1 6619-----AH27

SEE IF NO. OF PASSES IS 100, IF
SO TRANSFER
IF NO. OF PASSES IS NOT 100,
ADD 1.

□ 07419 SEL 2 0500.....
□ 07424 WR R 7663 □
□ 07429 UNL 7 09 7669 70W9 □
□ 07434 TR 1 6619-----AH27

T-0 *XXX-100 PASSES*
RESTORE COUNTER TO ZERO

2 024 07458
2 001 07459
2 005 07464 00
2 005 07469 00
2 032 07501
2 001 07502
2 008 07510
5 006 07516
2 001 07517
2 008 07525
2 006 07531
2 001 07532
2 032 07564
2 001 07565
2 008 07573
5 006 07579
2 001 07580
2 008 07588
2 006 07594
2 001 07595
2 028 07623
2 001 07624
2 004 07628
2 033 07661
2 001 07662
2 014 07676
2 001 07677
2 002 07679
2 004 07683
2 004 07687
2 003 07690
2 003 07693
2 029 07722
2 001 07723
2 005 07728
2 006 07734
2 006 07740
2 003 07743
2 002 07745
2 032 07777
2 001 07778

CONSTANT AREA, ROUTINES 006-010
00X-CHAN CHK-RD 01-CH-XX
□ G010 37010 WR 00 FINAL ADW
-25- 60,250 RD 01 FINAL ADW
ADDR WD-ROUT XXX INCORRECT-RD 01
□ ACTUAL--
□ CORRECT-
060250
□ ADDR WD-ROUT XXX-INCORRECT WR 00
□ ACTUAL--
□ CORRECT-
037010
□ XXX-FINAL ADDR WDS INCORRECT
□ -24R 60249
XXX-RD 01 FIELD OTHER THAN BLANKS
□ XXX-000 PASSES
□ AA
L24R 63249
E249 35249
100
000
XXX-WR 00 RECORD DOES NOT CMP
□ 25&
000005
000001
06
25
□ INSTR AFTER WR 00 IN RECORD