

8TS08A

TWO AND FOUR CHANNEL TAPE TEST

April 15, 1961

MULTIPLE CHANNEL RELIABILITY TESTI. PURPOSE OF TEST

To check the Ability of the Tape System to operate properly with two and four channels under varied conditions.

II. METHOD OF TEST

The complete machine with the exception of the Tape System is assumed to be in good working order. The tens position selector on Channel 20 should be set to zero.

A. Description

The test is divided into three inter-related parts

1. Tape table and Selector - All tape drives found ready (excluding 2000 the Master Tape) are stored in a table. Two or four at a time of these ready tapes are then picked up for use in the test.

(e. g.) The following tapes are found ready:

2001	2201
2002	2202
2101	2301
2102	2302

For two channels, the sequence would be:

2001 & 2101, 2002 & 2101, 2101 & 2201, 2102 & 2201, 2201 & 2301, 2202 & 2301, 2301 & 2001, 2302 & 2001, exit. The complete test is run each pair taken in turn.

For four channels, the sequence would be:

2001 2101, 2201 & 2301, 2002 2102 2202 & 2302, exit. The complete test is run each group taken in turn.

2. Two channel routines - Check operation of the Tape System with two channels operating simultaneously. Each routine is cycled three times so that its operation may be checked using variable length records.

Cycle 1 - records are 200 characters long.

Cycle 2 - records are 50 characters long.

Cycle 3 - records are 5 characters long.

Before going to the four channel routines, the program types out "End 2CHS". This type-out cannot be bypassed by the 911 Switch, and is not followed by a halt.

3. Four channel routines - check operation of the Tape System with four channels operating simultaneously. The routine cycles are the same as for two channels. The end of test type-out, Z, follows the four channel routines.

B. List of Routines

1. Two channels

001--- WR, BSP, RD, CMP - overlap.

002--- WR, BSP, RD CMP on one while WR BSP WR on the other. Switch channels - overlap.

003--- Same as 001, except that Main Frame is performing Arithmetic operations during tape motion. Tapes and CPU are checked for error.

004--- Same as 001, except that tapes are moved in interrupt programs.

005--- Same as 003, except that tapes are moved in interrupt programs.

ans/g0014157.png

2. Four channels

- 008--- Same as 001 - four channels.
- 009--- Same as 002 - four channels.
- 010--- Same as 003 - four channels.
- 011--- Same as 004 - four channels
- 012--- Same as 005 - four channels.

C. Area of Machine Required

- 1. CPU and the Tape System
- 2. Memory Locations - 00000 to 39,999.

D. Loading Procedure

- 1. Card - use load program 8LD01 with cards in the following order:

8LD01	2 cards
8TS08	the program cards (342)
8TR02	1 card
Blanks	3 cards

- 2. Tape-use tape generated by 8TR06. Refer to write up on 8TR06 for details.

E. Program Control.

- 1. Check Switches - 901 and 902 to Program
- 2. Alteration Switches

- 911 on - Bypass error type-outs.
- 912 on - Repeat routine.
- 913 on - Stop on error (after type-out).
- 914 on - Repeat program.
- 915 - Not used.
- 916 on - Long type out and additional channel error information.

F. Halts

- 1. Normal Halts

Halt 000 occurs after 901, 902 to program typeout. Start to continue. This halt occurs only on the first pass of this program.

2. Error halts

Halt ABCD - "BCD" is the routine number. "A" is the number of the halt in that routine. Example: HLT 1001 means that routine 001 failed, and that this is halt number 1 of this routine. (Always preceded by a type-out **UNLESS ALTERATION SW 0911 IS ON**).

G. Type-outs

1. Short type-out

TS - 3 - 001 - 2100	
TS -	Tape System test.
3 -	Routine cycle number 3.
001-	Routine number 001.
2100-	Channel 21 tape frame address 0.

2. Long type-out (916 on)

TS 3 - 001 - 2100
 WR G*.# I
 RD G*.# A

TS - 3 - 001 - 2100 - as in G1

WR G*.#I - record written

RD G*.#A - record read back

3. TS - 1 - 003 -- ARITH ERROR

TS - 1 - 003 as in G1.

ARITH ERROR - error occurred in Arithmetics performed while tapes were being used.

4. Type-outs not followed by halts.

- a. 916 off - "CHAN CHK 2100 RD". 2100 is the tape address.

- b. "CHAN CHK 2100 WR". 2100 is the tape address.
- c. "TI ON 2100 2344 - IC". Tape indicator came on for tape drive 2100 on the last tape operation before IC equals 2344. This typeout precedes an automatic rewind on all tapes.
- d. "ANY TGR ON IN INT PROG 8499-IC".
8499 is the address of the LIP ending the block of the interrupt program during which the Any trigger was found on. This type-out is followed by "900-905 CHK" type-out to indicate the source of the Any check.
- e. 916 on - Additional Channel check information.
"CHAN CHK 2100 RD" or WR is followed by an interrogation of the Sense characters.

Typical type out follows.

CHAN CHK 2100 WR

SENSE INFO

B 1 (The two Sense Characters)

REG A VRC

RD LR CR

CMP CHK

SKEW CHK

H. Comments

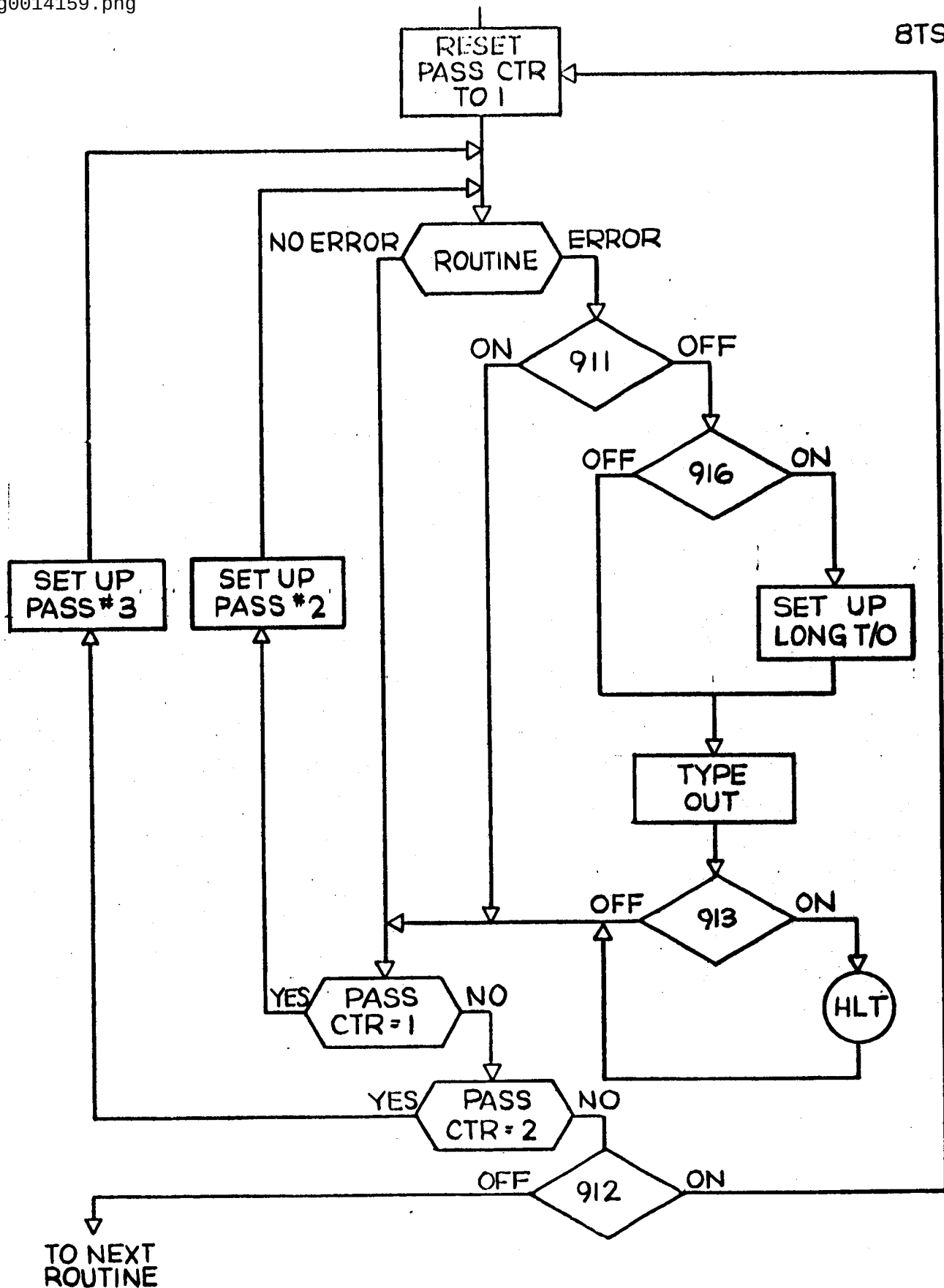
There must be at least two channels on line before this test will operate. All Tape drives made ready except that with address 2000 will be used. The Selector portion of the test checks for no tapes being ready or for the presence of only one channel. If these conditions exist there is a type out - "NO TAPES READY" or "ONLY ONE CHANNEL AVAILABLE".

These type outs cannot be bypassed by 911, and will continue indefinitely unless the particular condition is corrected. If either of these typeouts occur, depress stop, correct trouble, reset, depress start.

At the end of the two channel routines the program types out "END 2CHS" and immediately attempts four channel operation. If four channels are connected to the system, the program continues to the end of the four channel routines, types out a Z, and interrogates the 914 Switch. If there are only two channels connected to the system, the "END 2CHS" type out is followed by "4 CHANNELS NOT AVAILABLE" and "Z". The 914 switch is then interrogated.

Any check condition constitutes an error. However, since read and write fields are typed out, the 901 and 902 check switches should be in the Program position as these checks can occur in the type-out sub-routines.

8TS08



8TS08-BASIC ROUTINE LAYOUT

04-15-61 8TS08A
MULTI-CHANNEL TEST 2 AND 4 CH

```

000004 EEM 3 14 0000 06-0
000009 CHR 3 13 0000 06 0
000014 LIM , 07 0000 0 &0
000019 SPC , 0000

```

ENTER EIGHTY MODE

```

000224 NOP A 0049-----
000229 SEL 2 0500
000334 WR R 1742
000339 SGN T 15 0020 0&B0
000444 HLT J 0000

```

SWITCH
CHECK SWITCHES TYPE-OUT
RESET SWITCH

```

A02
A03
A05.....000449 SET B 0004.....
000544 LOD 8 0402
000559 UNL 7 0174
000644 SET B 09 0004 0- 4
000699 SET B 10 0004 0-4
000744 SGN T 15 0413 0DA3
000799 RCV U 0504
000844 BLM $ 0045
000899 ADM 6 15 0413 0DA3
000944 SET B 12 0001 0601
000999 LOD 8 12 0431 0D31
001044 SET B 01 0004 00 4
001099 LOD 8 01 0406 04 6
001144 LOD 8 0410
001199 UNL 7 0264
001244 LOD 8 0398
001299 UNL 7 0299
001344 SET B 13 0001 06 1
001399 LOD 8 13 0415 0D/5
001444 SET B 14 0001 06-1
001499 LOD 8 14 0412 0DJ2
001544 EEM 3 14 0000 06-0
001599 LIM , 07 0000 0 &0
001644 CHR 3 13 0000 06 0
001699 ADM 6 15 0260 0BF0

```

HOUSEKEEPING

ZONES IN ASU 15
BLNK OUT TAPE TABLE AREALOAD ASU 13 WITH ZERO
LOAD ASU 14 WITH 1

RESET RDY TP SWITCH

NEXT PAGE

```

000174 SEL 2 2001
I 00179 TRS 0 01 0284 02Y4
I 00184 SET B 0002
II 00189 LOD 8 0174
II 00194 CMP 4 0386
II 00199 TRE L 0219
II 00204 ADD G 0390
I 00209 UNL 7 0174
I 00214 TR 1 0174
II 00219 SET B 0002
II 00224 LOD 8 0172
II 00229 ADD G 0390
II 00234 CMP 4 0388
II 00239 TRE L 0264
II 00244 UNL 7 0172
II 00249 LOD 8 0415
I 00254 TR 1 0209
I 00259 LOD 8 0402
I 00264 NOP A 0754
I 00269 SEL 2 0500
I 00274 WR R 0416
I 00279 TR 1 0049
I 00284 SGN T 15 0260 0BF0
I 00289 SET B 0004
I 00294 LOD 8 0174
I 00299 UNL 7 0504
I 00304 ADM 6 01 0299 02Z9
I 00309 TRS 0 0319
I 00314 TR 1 0184
I 00319 IOF 3 0000
I 00324 RWD 3 0002
I 00329 SET B 0004
I 00334 LOD 8 0398
I 00339 UNL 7 0344
I 00344 LOD 8 0504
II 00349 CMP 4 1721
I 00354 TRE L 0184
I 00359 UNL 7 0364
I 00364 SEL 2 0000
I 00369 IOF 3 0000
I 00374 RWD 3 0002
I 00379 ADM 6 01 0344 03U4
I 00384 TR 1 0344

```

LOOK FOR LAST TD ON CHAN
STEP TAPE ADR BY 1

STEP CHAN BY 1
LOOK FOR LAST CHAN

SWITCH IF ANY TAPE READY

TO START OF PROGRAM

AT TAPE ADRESS TABLE

RWD SUB-ROUTINE

BLANKS

09
24
A
2100
0504
2001
0005
0754
0
1
A
00
NO TAPE READY
H
Z
H

```

B08.....00439 TRS 0 10 0444 OMM4-
00444 TRS 0 11 0449 OMD9-
00449 TRS 0 12 0454 OD54-
00454 TRS 0 13 0459 ODV9-
00459 TRS 0 14 0464 OD04-
00464 TRS 0 15 0469 ODF9-
00469 SEL 2 0500-
00474 WR R 0430-
00479 TRA I 04 0049 0 49-
00484 TR 1 18219 Y219-

```

TO LOAD PROGRAM

2 005 00489
2 005 00494

TAPE ADDRESS TABLE

2 005 00504 00
2 005 00509
2 005 00514
2 005 00519
2 005 00524
2 005 00529
2 005 00534
2 005 00539
2 005 00544
2 005 00549
2 005 00554
2 005 00559
2 005 00564
2 005 00569
2 005 00574
2 005 00579
2 005 00584
2 005 00589
2 005 00594
2 005 00599
2 005 00604
2 005 00609
2 005 00614
2 005 00619
2 005 00624
2 005 00629
2 005 00634
2 005 00639
2 005 00644
2 005 00649
2 005 00654
2 005 00659
2 005 00664
2 005 00669
2 005 00674
2 005 00679
2 005 00684
2 005 00689
2 005 00694
2 005 00699
2 005 00704
2 005 00709
2 005 00714
2 005 00719
2 005 00724

C02
C41.....
00754 ADM 6 15 0895 0HI5
00759 ADM 6 15 0945 0ID5
00764 SET B 0004
00769 LOD 8 0997
00774 UNL 7 0794
00779 UNL 7 0804
00784 LOD 8 1002
00789 UNL 7 0829
00794 NOP A
D43.....
00799 SET B 0004
00804 LOD 8 0504
00809 CMP 4 1721
00814 TRE L 0949
00819 UNL 7 0489

-----E05
BLANKS
OUT OF TABLE
AS 1ST TAPE

-----V
NEXT PAGE

```

000824 SET B 0001
000829 LOD 8 0502
000834 CMP 4 0487
000839 TRE L 0899-----
000844 CMP 4 0998
000849 TRE L 0949-----

```

LOOK FOR SAME CHANNEL
SAME CHANNEL

OUT OF TABLE

```

000854 SET B 0004
000859 LDA # 0794
000864 ULA * 0874
000869 SET B 0004
000874 LOD 8 0000
000879 UNL 7 0494
000884 SGN T 15 0895 0H15
000889 ADM 6 01 0804 08 4
000894 TR 1 1039-----
000899 NOP A 0934-----
000904 LOD 8 0945
000909 CMP 4 0985
000914 TRE L 0934-----
000919 SEL 2 0500
000924 WR R 1003
000929 TR 1 0049-----A01
000934 ADM 6 01 0829 08S9
000939 ADM 6 01 0794 07Z4
000944 TR 1 0824
E04... 000949 NOP A 1099-----
000954 SET B 0004
000959 LOD 8 0504
000964 LDA # 02 0794 07R4
000969 ULA * 02 0974 09P4
000974 UNL 7 0000
000979 SGN T 15 0945 0ID5
000984 TR 1 0824

```

ARE ALL TAPES READY
SWITCH IF TAPE AVAILABLE

SWITCH IF OUT OF TABLE

```

2 001 00985
2 007 00992
2 001 00993
2 004 00997
2 001 00998
2 004 01002
2 023 01025
2 001 01026
2 004 01030

```

```

A
END 2CH
0504
0502
ONLY ONE CHAN AVAILABLE
0005

```

```

01039 SET B 0004
01044 LOD 8 0398
01049 UNL 7 1054
01054 LOD 8 0504
01059 CMP 4 1721
01064 TRE L 2004-----K09
01069 UNL 7 1074
01074 SEL 2 0000
01079 TRS 0 01 1089 10Y9
01084 TR 1 1079
01089 ADM 6 01 1054 10V4
01094 TR 1 1054
01099 SEL 2 0500
01104 WR R 0986

```

RDY TABLE SUB-ROUTINE

BLANKS
TO 2 CH ROUTINES

NEXT PAGE

FROM PREVIOUS PAGE

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8TS08

```

01109 SET B 0004
01114 LOD 8 1002
01119 UNL 7 1239
01124 LOD 8 1648
01129 UNL 7 1194
01134 RCV U 1669
01139 BLM $ 0004
01144 SET B 0020
01149 LOD 8 1741
01154 UNL 7 1684
01159 SET B 0004
01164 LOD 8 0997
01169 UNL 7 1184
01174 ADM 6 15 1620 1FBO

```

TAPE SELECTOR 4 CH OP

1ST ADR OF TAPE TABLE

SIGNS AT TAPE SEL AREA

RESET T/O SWITCH

```

01179 SET B 0004
01184 LOD 8 0504
01189 UNL 7 1669
01194 NOP A 0000
01199 CMP 4 1721
01204 TRE L 1624
01209 UNL 7 1669
01214 LDA # 1184
01219 ULA * 1194
01224 SUB P 1762
01229 ULA * 1239

```

UNL TAPE #1

BLANKS
OUT OF TABLE

TWO

NEXT PAGE

F43.....

J08

```

01234 SET B 0001
01239 LOD 8 0502
01244 CMP 4 1667
01249 TRE L 1314-----J08
01254 CMP 4 1649
01259 TRE L 1624-----J08
01264 LDA # 1194
01269 ULA * 1279
01274 SET B 0004
01279 LOD 8 0000
01284 CMP 4 1674
01289 TRE L 1314-----J08
01294 CMP 4 1721
01299 TRE L 1624-----J08
01304 UNL 7 1674
01309 SGN T 15 1320 1CB0
01314 ADM 6 01 1194 1124
01319 ADM 6 01 1239 12T9
01324 NOP A 1334
01329 TR 1 1234
01334 ADM 6 15 1320 1CB0
01339 LDA # 1194
01344 ULA * 1354
01349 SET B 0004
01354 LOD 8 0000
01359 UNL 7 1688
01364 SET B 0001
01369 LOD 8 1686
01374 CMP 4 1667
01379 TRE L 1444-----J08
01384 CMP 4 1672
01389 TRE L 1444-----J08
01394 LDA # 1194
01399 ULA * 1409
01404 SET B 0004
01409 LOD 8 0000
01414 CMP 4 1679
01419 TRE L 1444-----J08
01424 CMP 4 1721
01429 TRE L 1624-----J08
01434 UNL 7 1679
01439 SGN T 15 1445 1DD5
01444 ADM 6 01 1194 1124
01449 NOP A 1459
01454 TR 1 1339
01459 ADM 6 15 1445 1DD5

```

LOOK FOR 2ND TAPE

LOOK FOR SAME CHANNEL
SAME CHANNEL
LOOK FOR OUT OF TABLEWAS TAPE ALREADY USED
TAPE ALREADY USED
BLANKS
OUT OF TABLE
AS 2ND TAPE

SWITCH

RESET SWITCH
LOOK FOR 3RD TAPELOOK FOR SAME CH AS TAPE #1
SAME CH
LOOK FOR SAME CH AS TAPE #2
SAME CHWAS TAPE ALREADY USED
TAPE ALREADY USED
BLANKS
OUT OF TABLE
AS 3RD TAPE

SWITCH

LOOK FOR 4TH TAPE

LOOK FOR SAME CH AS TAPE #1
SAME CH
LOOK FOR SAME CH AS TAPE #2
SAME CH
LOOK FOR SAME CH AS TAPE #3
SAME CH

G08.....

```

01464 SET B 0004
01469 LDA # 1194
01474 ULA * 1484
01479 SET B 0004
01484 LOD 8 0000
01489 UNL 7 1692
01494 SET B 0001
01499 LOD 8 1690
01504 CMP 4 1667
01509 TRE L 1599-----H08
01514 CMP 4 1672
01519 TRE L 1599-----H08
01524 CMP 4 1677
01529 TRE L 1599-----H08

```

NEXT PAGE

```

#####
01534 SET B 0004
01539 LDA # 1194
01544 ULA # 1554
01549 SET B 0004
01554 LOD 8 0000
01559 CMP 4 1684
01564 TRE L 1599
01569 CMP 4 1721
01574 TRE L 1624
01579 UNL 7 1684
01584 ADM 6 01 1184 11Y4
01589 SGN T 15 1620 1FB0
01594 SGN T 15 1600 1F&0
H07.....01599 ADM 6 01 1194 11Z4
01604 NOP A 1614
01609 TR 1 1464
01614 ADM 6 15 1600 1F&0
01619 TR 1 20314 -314
J06.....01624 NOP A 1639
J07.....01629 SEL 2 0500
01634 WR R 1693
01639 NOP A 0000
01644 TR 1 0439
#####

```

WAS TAPE ALREADY USED
TAPE ALREADY USED
BLANKS
OUT OF TABLE
AS 4TH TAPE

SWITCH

RESET SWITCH
TO 4 CH ROUTINES

B03 TO 914 SWITCH

```

2 004 01648
2 001 01649
2 004 01653
2 004 01657
2 004 01661
2 005 01669 00
2 005 01674
2 005 01679
2 005 01684
2 004 01688
2 004 01692
2 024 01716
2 001 01717
2 004 01721
2 020 01741
2 018 01759
2 001 01760
2 002 01762

```

0504

0001
0005
2001

4 CHANNELS NOT AVAILABLE

□

#####

901 902 TO PROGRAM

□

B

ROUTINE #001

ans/g0014164.png

WR BKSP RD CMP 2 CHANNELS

```

K05
K12.....
02004 SET B 0005
02009 LOD 8 3255
02014 UNL 7 3684
02019 SET B 0004
02024 LOD 8 3222
02029 UNL 7 2499
02034 UNL 7 2614
02039 UNL 7 3054
02044 UNL 7 3129
02049 LOD 8 3226
02054 UNL 7 2509
02059 UNL 7 3069
02064 LOD 8 3242
02069 UNL 7 2504
02074 UNL 7 2619
02079 UNL 7 3059
02084 UNL 7 3134
02089 LOD 8 3230
02094 UNL 7 2624
02099 UNL 7 3144
02104 LOD 8 3246
02109 UNL 7 3064
02114 UNL 7 3139
02119 LOD 8 3250
02124 UNL 7 3074
02129 UNL 7 3149
02134 SET B 0040
02139 RCV U 3689
02144 SND / 3684
02149 SET B 0001
02154 LOD 8 3212
02159 UNL 7 3730
02164 LOD 8 3213
02169 UNL 7 3685
02174 SET B 12 0001 0&01
02179 LOD 8 12 3256 3856
02184 SET B 0001
02189 LOD 8 3218
02194 UNL 7 3217
02199 LOD 8 09 3203 3K 3
02204 LOD 8 10 3207 3K-7
02209 LOD 8 11 3211 3KA1

```

RESET WR FIELDS

```

02214 SET B 0004
02219 LOD 8 0489
02224 UNL 7 2304
02229 UNL 7 2399
02234 UNL 7 2354
02239 UNL 7 2464
02244 LOD 8 0494
02249 UNL 7 2314
02254 UNL 7 2424
02259 UNL 7 2389

```

TAPE #1

TAPE #2

```

L11
L12.....
02264 CHR 3 13 0000 06 0
02269 UNL 7 14 2570 2EP0
02274 UNL 7 14 2685 2FQ5
02279 UNL 7 12 3880 3H80
02284 EEM 3 14 0000 06-0
02289 SPC , 0000
02294 LIM , 07 0000 0 &0
02299 TRA 1 2304

```

RESET LONG T/O SWITCH
 RESET LONG T/O SWITCH

TURN OFF ANY TGR

```

02304 SEL 2 .....
02309 WR R 3680

```

TAPE #1
 WR TAPE #1

NEXT PAGE

gscans/g001

```

02314 SEL 2
02319 WR R 3680
02324 TRS O 03 2334 23C4
02329 TR 1 2354
02334 LDA # 02 2244 22M4
02339 ULA * 02 19449 24M9
02344 LDA # 02 2344 23M4
02349 TR 1 19424 2424-----CD39
02354 SEL 2
02359 TRS O 03 2369 23F9
02364 TR 1 2389
02369 LDA # 02 2219 22J9
02374 ULA * 02 19449 24M9
02379 LDA # 02 2379 23P9
02384 TR 1 19424 2424-----CD39

```

TAPE #2
WR TAPE #2

TAPE #1

```

02389 SEL 2
02394 BSP 3 0004
02399 SEL 2
02404 BSP 3 0004
02409 RCV U 38004 H004
02414 BLM $ 0400

```

TAPE #2
TAPE #2
TAPE #1
TAPE #1
RD FIELD

```

02419 RD Y 38000 H000
02424 SEL 2
02429 RD Y 39000 I000
02434 TRS O 03 2444 24D4
02439 TR 1 2464
02444 LDA # 02 2244 22M4
02449 ULA * 02 19609 26-9
02454 LDA # 02 2454 24N4
02459 TR 1 19589 2589-----CE40
02464 SEL 2
02469 TRS O 03 2479 24G9
02474 TR 1 2499
02479 LDA # 02 2219 22J9
02484 ULA * 02 19609 26-9
02489 LDA # 02 2489 24Q9
02494 TR 1 19589 2589-----CE40

```

RD TAPE #1
TAPE #2
RD TAPE #2

TAPE #1

```

02499 SET B 0200
02504 LOD 8 3879
02509 CMP 4 38199 H199
02514 TRE L 2614-----N11

```

CHECK FOR ERROR TAPE #1

NO ERROR TAPE #1

```

02519 SET B 0004
02524 LOD 8 0489
02529 UNL 7 3269
02534 UNL 7 12 3270 3B70
02539 TRA I 06 3054 3 N4-----S12
M12.....02544 TRA I 01 2614 2674-----N11
02549 SET B 0001
02554 LOD 8 3217
02559 UNL 7 3260
02564 SEL 2 0500
02569 WR R 3257
02574 TR 1 2594
02579 WR R 3271
02584 WR R 3475
02589 SGN T 15 2570 2EG0
02594 TRS O 12 2599 2E99
02599 TRA I 03 2609 2689
02604 TR 1 2614-----N11
02609 HLT J 1001

```

ERROR

TYPE OUT CMP FIELDS

PASS NO AT T/O

LONG T/O SWITCH

NEXT PAGE

FROM PREVIOUS PAGE

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8TS08

CHECK FOR ERROR TAPE #2

NO ERROR TAPE #2

ERROR

TYPE OUT CMP FIELDS TAPE #2

PASS NO AT T/O

LONG T/O SWITCH

FOR PASS #2

FOR PASS #3

STEP CTR TO 3

STEP CTR TO 2

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES -0150

N10.....
02614 SET B 0200
02619 LOD 8 3879
02624 CMP 4 39199 1199
02629 TRE L 2729-----

P12.....
02634 SET B 0004
02639 LOD 8 0494
02644 UNL 7 3269
02649 UNL 7 12 3270 3B70
02654 TRA I 06 3129 3/K9-----T12
02659 TRA I 01 2729 27S9-----X
02664 SET B 0001
02669 LOD 8 3217
02674 UNL 7 3260
02679 SEL 2 0500
02684 WR R 3257
02689 TR 1 2709-----
02694 WR R 3271
02699 WR R 3475
02704 SGN T 15 2685 2FH5
02709 TRS O 12 2714 2G14
02714 TRA I 03 2724 27B4
02719 TR 1 2729-----
02724 HLT J 2001.....

02729 RCV U 38004 H004.....
02734 BLM \$ 0400
02739 SET B 0001
02744 LOD 8 3217
02749 CMP 4 3218
02754 TRE L 2789-----
02759 CMP 4 3216
02764 TRE L 2774-----
02769 TR 1 3004-----R12
02774 ADD G 3215.....
02779 UNL 7 3217
02784 TR 1 2899-----Q12
02789 ADD G 3215.....
02794 UNL 7 3217

02799 LOD 8 3730
02804 UNL 7 3212
02809 UNL 7 12 3730 3G30
02814 ADM 6 09 2499 2MZ9
02819 ADM 6 09 2504 2N 4
02824 ADM 6 09 2509 2N 9
02829 ADM 6 09 2614 2O/4
02834 ADM 6 09 2619 2O/9
02839 ADM 6 09 2624 2OS4
02844 ADM 6 09 3054 3-V4
02849 ADM 6 09 3059 3-V9
02854 ADM 6 09 3064 3-W4
02859 ADM 6 09 3069 3-W9
02864 ADM 6 09 3074 3-X4
02869 ADM 6 09 3129 3JS9
02874 ADM 6 09 3134 3JT4
02879 ADM 6 09 3139 3JT9
02884 ADM 6 09 3144 3JU4
02889 ADM 6 09 3149 3JU9
02894 TR 1 2264-----L09

```
Q11.....02899 SET B 0001
02904 LOD 8 3685
02909 UNL 7 3213
02914 UNL 7 12 3685 3F85
02919 ADM 6 10 2499 2MR9
02924 ADM 6 10 2504 2N-4
02929 ADM 6 10 2509 2N-9
02934 ADM 6 10 2614 2OJ4
02939 ADM 6 10 2619 2OJ9
02944 ADM 6 10 2624 2OK4
02949 ADM 6 10 3054 3-N4
02954 ADM 6 10 3059 3-N9
02959 ADM 6 10 3064 3-O4
02964 ADM 6 10 3069 3-O9
02969 ADM 6 10 3074 3-P4
02974 ADM 6 10 3129 3JK9
02979 ADM 6 10 3134 3JL4
02984 ADM 6 10 3139 3JL9
02989 ADM 6 10 3144 3JM4
02994 ADM 6 10 3149 3JM9
02999 TR 1 2264-----L09
```

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES -0045

```
R11.....03004 TRS 0 11 3009 3-69
03009 SET B 0001.....
03014 LOD 8 3212
03019 UNL 7 3730
03024 LOD 8 3213
03029 UNL 7 3685
03034 RCV U 38004 H004
03039 BLM $ 0400
03044 TRA I 02 2004 20-4-----K09
03049 TR 1 3889-----U13
```

RESET FIELDS AND EXIT

TO 2ND ROUTINE

```
S10.....03054 SET B 0200
03059 LOD 8 3879
03064 UNL 7 3473
03069 LOD 8 38199 H199
03074 UNL 7 3677
03079 LDA # 3064
03084 ADD G 3215
03089 ULA * 3094
03094 UNL 7 12 0000 0&00
03099 LDA # 3074
03104 ADD G 3215
03109 ULA * 3114
03114 UNL 7 12 0000 0&00
03119 ADM 6 15 2570 2EG0
03124 TR 1 2544-----M10
```

SET UP LONG T/O TAPE #1

TO 911 SWITCH

```
T11.....03129 SET B 0200
03134 LOD 8 3879
03139 UNL 7 3473
03144 LOD 8 39199 I199
03149 UNL 7 3677
03154 LDA # 3139
03159 ADD G 3215
03164 ULA * 3169
03169 UNL 7 12 0000 0&00
03174 LDA # 3149
03179 ADD G 3215
03184 ULA * 3189
03189 UNL 7 12 0000 0&00
03194 ADM 6 15 2685 2FH5
03199 TR 1 2659-----P11
```

SET UP LONG T/O TAPE #2

2	004	03203		I850
2	004	03207		I955
2	004	03211		0195
2	001	03212		G
2	001	03213		G
2	002	03215		A
2	001	03216		2
2	001	03217		
2	001	03218		1
2	004	03222		0200
2	004	03226		H199
2	004	03230		I199
2	004	03234		F199
2	004	03238		G199
3		03242	3879 3879	
3		03246	3473 3473	
3		03250	3677 3677	
2	005	03255		G*.#I
2	001	03256		□
2	013	03269		TS-8-001-
2	003	03272		WR
5	201	03473		
2	003	03476		RD
5	201	03677		
2	001	03678		□
2	001	03679		
5	005	03684	00	
5	200	03884		

ROUTINE #002

U12

U17

□	03889	SET	B	0004	□
□	03894	LOD	8	3222	□
□	03899	UNL	7	4349	□
□	03904	UNL	7	4569	□
□	03909	UNL	7	5009	□
□	03914	UNL	7	5084	□
□	03919	LOD	8	3226	□
□	03924	UNL	7	4359	□
□	03929	UNL	7	5024	□
□	03934	LOD	8	3242	□
□	03939	UNL	7	4354	□
□	03944	UNL	7	4574	□
□	03949	UNL	7	5014	□
□	03954	UNL	7	5089	□
□	03959	LOD	8	3230	□
□	03964	UNL	7	4579	□
□	03969	UNL	7	5099	□
□	03974	LOD	8	5581	□
□	03979	UNL	7	5019	□
□	03984	UNL	7	5094	□
□	03989	LOD	8	5585	□
□	03994	UNL	7	5029	□
□	03999	UNL	7	5104	□
□	04004	SET	B	0001	□
□	04009	LOD	8	3218	□
□	04014	UNL	7	3217	□
□	04019	LOD	8	3212	□
□	04024	UNL	7	3730	□
□	04029	LOD	8	3213	□
□	04034	UNL	7	3685	□

WR BSP RD #1 WR #2

RESET PASS CTR
RESET WR FIELDS

NEXT PAGE

04039 SET B 0004
04044 LOD 8 0489
04049 UNL 7 4154
04054 UNL 7 4204
04059 UNL 7 4249
04064 UNL 7 4474
04069 UNL 7 4494
04074 UNL 7 4314
04079 LOD 8 0494
04084 UNL 7 4164
04089 UNL 7 4239
04094 UNL 7 4534
04099 UNL 7 4484
04104 UNL 7 4464
04109 UNL 7 4274

TAPE #1

TAPE #2

V16

V17.....

04114 CHR 3 13 0000 06 0
04119 UNL 7 14 4420 4DK0
04124 UNL 7 14 4640 4FM0
04129 UNL 7 12 3880 3H80
04134 EEM 3 14 0000 06-0
04139 SPC , 0000
04144 LIM , 07 0000 0 & 0
04149 TRA 1 4154

RESET LONG T/O SWITCH
RESET LONG T/O SWITCH

TURN OFF ANY TGR

04154 SEL 2
04159 WR R 3680

TAPE #1

04164 SEL 2
04169 WR R 3680
04174 TRS 0 03 4184 41H4
04179 TR 1 4204
04184 LDA # 02 4079 40P9
04189 ULA * 02 19449 Z4M9
04194 LDA # 02 4194 41R4
04199 TR 1 19424 Z424
04204 SEL 2
04209 TRS 0 03 4219 42A9
04214 TR 1 4239
04219 LDA # 02 4044 40M4
04224 ULA * 02 19449 Z4M9
04229 LDA # 02 4229 42K9
04234 TR 1 19424 Z424

TAPE #2

TAPE #1

04239 SEL 2
04244 BSP 3 0004
04249 SEL 2
04254 BSP 3 0004
04259 RCV U 38004 H004
04264 BLM \$ 0400

TAPE #2
TAPE #2
TAPE #1
TAPE #1
RD FIELD

NEXT PAGE

```

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
□ 04269 RD Y 38000 H000 □
□ 04274 SEL 2 □
□ 04279 WR R 3680 □
□ 04284 TRS O 03 4294 42 I4 -#-#-#-#-#-#-#-#-#-#
□ 04289 TR 1 4314 ---#-#-#-#-#-#-#-#-#-#
□ 04294 LDA # 02 4079 40P9 .#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#
□ 04299 ULA * 02 19449 Z4M9 .#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#
□ 04304 LDA # 02 4304 43-4 □ I
□ 04309 TR 1 19424 Z424 -#-#-#-#-#-#-#-#-#-#
□ 04314 SEL 2 .#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#
□ 04319 TRS O 03 4329 43B9 .#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#
□ 04324 TR 1 4349 ---#-#-#-#-#-#-#-#-#-#
□ 04329 LDA # 02 4044 40M4 .#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#
□ 04334 ULA * 02 19609 Z6-9 .#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#.#
□ 04339 LDA # 02 4339 43L9 □ I
□ 04344 TR 1 19589 Z589 -#-#-#-#-#-#-#-#-#-#
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

```

```
RD TAPE #1
TAPE #2
WR TAPE #2 WHILE RD TAPE #1
```

TAPE #1

[illegible]

CHECK FOR ERROR TAPE #1

NO ERROR

```

□ □ □ □ □ □ □ □ □ □ □ ▾ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
□ 04369 SET B      0004      □ I
□ 04374 LOD 8      0489      □ I
□ 04379 UNL 7      5167      □ I
□ 04384 UNL 7    12 5168   5A68 □ I
□ 04389 TRA I 06   5009   5 -9- □ AB17
■ 04394 TRA I 01   4464   44W4- Y
□ 04399 SET B      0001      □ I
□ 04404 LOD 8      3217      □ I
□ 04409 UNL 7      5158      □ I
□ 04414 SEL 2      0500      □ I
□ 04419 WR       R      5155 □ I
□ 04424 TR        1     4444- ■ I
□ 04429 WR       R      5169 □ I
□ 04434 WR       R      5373 □ I
□ 04439 SGN T    15   4420  4DB0 □ I
□ 04444 TRS O    12   4449  4D49 ■ I
□ 04449 TRA I    03   4459  44E9 ■ I
□ 04454 TR        1     4464- ■ Y
□ 04459 HLT J      1002 ●●●●● I

```

ERROR

PASS NO AT T/O

LONG T/O SWITCH

```

04464 SEL 2          . . . . . I
04469 BSP 3      0004          I
04474 SEL 2          I
04479 BSP 3      0004          I
04484 SEL 2          I
04489 RD   Y      39000 I000  I
04494 SEL 2          I
04499 WR   R      3680          I
04504 TRS  0 03     4514 45A4 - - - - - I
04509 TR   1       4534 - - - - - I
04514 LDA # 02     4044 40M4 . . . I
04519 ULA * 02    19449 Z4M9 . . . I
04524 LDA * 02     4524 45K4 . . . I
04529 TR   1      19424 Z424 - - - - - CD39
04534 SEL  0       . . . . . I
04539 TRS  0 03     4549 45D9 - - - - - I
04544 TR   1      4569 - - - - - X16
04549 LDA # 02     4079 40P9 . . . I
04554 ULA * 02    19609 Z6-9 . . . 
04559 LDA # 02     4559 45N9 . . . 
04564 TR   1      19589 Z589 - - - - - CE40

```

TAPE #2

TAPE #1

```
TAPE#2
RD TAPE #2
TAPE #1
WR TAPE #1 WHILE RD TAPE #2
```

TAPE #2

```

X15..... 04569 SET B      0200
            04574 LOD 8      3879
            04579 CMP 4      39199 I199
            04584 TRE L      4684-----
            04589 SET B      0004
            04594 LOD 8      0494
            04599 UNL 7      5167
            04604 UNL 7 12    5168 5A68
            04609 TRA I 06    5084 5 Q4-----AC17
Y17..... 04614 TRA I 01    4684 46Y4-----
            04619 SET B      0001
            04624 LOD 8      3217
            04629 UNL 7      5158
            04634 SEL 2      0500
            04639 WR R       5155
            04644 TR 1       4664-----
            04649 WR R       5169
            04654 WR R       5373
            04659 SGN T 15    4640 4FD0
            04664 TRS O 12    4669 4F69
            04669 TRA I 03    4679 46G9
            04674 TR 1       4684-----
            04679 HLT J       2002.....
            04684 RCV U      38004 H004.....
            04689 BLM $      0400
            04694 SET B      0001
            04699 LOD 8      3217
            04704 CMP 4      3218
            04709 TRE L      4744-----
            04714 CMP 4      3216
            04719 TRE L      4729-----
            04724 TR 1       4959-----AA17
            04729 ADD G      3215.....
            04734 UNL 7      3217
            04739 TR 1       4854-----Z17
            04744 ADD G      3215.....
            04749 UNL 7      3217
            04754 LOD 8      3730
            04759 UNL 7      3212
            04764 UNL 7 12    3730 3G30
            04769 ADM 6 09    4349 4LU9
            04774 ADM 6 09    4354 4LV4
            04779 ADM 6 09    4359 4LV9
            04784 ADM 6 09    4569 4NW9
            04789 ADM 6 09    4574 4NX4
            04794 ADM 6 09    4579 4NX9
            04799 ADM 6 09    5009 5- 9
            04804 ADM 6 09    5014 5-/4
            04809 ADM 6 09    5019 5-/9
            04814 ADM 6 09    5024 5-S4
            04819 ADM 6 09    5029 5-S9
            04824 ADM 6 09    5084 5-Y4
            04829 ADM 6 09    5089 5-Y9
            04834 ADM 6 09    5094 5-Z4
            04839 ADM 6 09    5099 5-Z9
            04844 ADM 6 09    5104 5J 4
            04849 TR 1       4114-----V14

```

CHECK FOR ERROR TAPE #2

NO ERROR

ERROR

PASS NO AT T/O

LONG T/O SWITCH

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES -0150

Z16.....

```
04854 SET B 0001
04859 LOD 8 3685
04864 UNL 7 3213
04869 UNL 7 12 3685 3F85
04874 ADM 6 10 4349 4LM9
04879 ADM 6 10 4354 4LN4
04884 ADM 6 10 4359 4LN9
04889 ADM 6 10 4569 4NO9
04894 ADM 6 10 4574 4NP4
04899 ADM 6 10 4579 4NP9
04904 ADM 6 10 5009 5--9
04909 ADM 6 10 5014 5-J4
04914 ADM 6 10 5019 5-J9
04919 ADM 6 10 5024 5-K4
04924 ADM 6 10 5029 5-K9
04929 ADM 6 10 5084 5-Q4
04934 ADM 6 10 5089 5-Q9
04939 ADM 6 10 5094 5-R4
04944 ADM 6 10 5099 5-R9
04949 ADM 6 10 5104 5J-4
04954 TR 1 4114-----V14
```

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES -0045

AA16.....

```
04959 TRS 0 11 4964 4RF4---
04964 SET B 0001-----I
04969 LOD 8 3212
04974 UNL 7 3730
04979 LOD 8 3213
04984 UNL 7 3685
04989 RCV U 38004 H004
04994 BLM $ 0400
04999 TRA 1 02 3889 38Q9-----U13
05004 TR 1 5594-----AD18
```

RESET FIELDS AND EXIT

TO 3RD ROUTINE

AB15.....

```
05009 SET B 0200
05014 LOD 8 3879
05019 UNL 7 5371
05024 LOD 8 38199 H199
05029 UNL 7 5575
05034 LDA # 5019
05039 ADD G 3215
05044 ULA * 5049
05049 UNL 7 12 0000 0600
05054 LDA # 5029
05059 ADD G 3215
05064 ULA * 5069
05069 UNL 7 12 0000 0600
05074 ADM 6 15 4420 4DB0
05079 TR 1 4394-----W15
```

SET UP FOR LONG T/O TAPE #1

AC16.....

```
05084 SET B 0200
05089 LOD 8 3879
05094 UNL 7 5371
05099 LOD 8 39199 I199
05104 UNL 7 5575
05109 LDA # 5094
05114 ADD G 3215
05119 ULA * 5124
05124 UNL 7 12 0000 0600
05129 LDA # 5104
05134 ADD G 3215
05139 ULA * 5144
05144 UNL 7 12 0000 0600
05149 ADM 6 15 4640 4FD0
05154 TR 1 4614-----Y16
```

SET UP FOR LONG T/O TAPE #2

2 013 05167 TS-8-002-
2 003 05170 WR
5 201 05371
2 003 05374 RD
5 201 05575
2 001 05576
2 001 05577
3 05581
3 05585 5371 5371
5575 5575

ROUTINE #003

AD17
AD22.....
05594 SET B 0004
05599 LOD 8 3222
05604 UNL 7 6174
05609 UNL 7 6289
05614 UNL 7 6729
05619 UNL 7 6804
05624 LOD 8 3226
05629 UNL 7 6184
05634 UNL 7 6744
05639 LOD 8 3242
05644 UNL 7 6179
05649 UNL 7 6294
05654 UNL 7 6734
05659 UNL 7 6809
05664 LOD 8 3230
05669 UNL 7 6299
05674 UNL 7 6819
05679 LOD 8 7303
05684 UNL 7 6739
05689 UNL 7 6814
05694 LOD 8 7307
05699 UNL 7 6749
05704 UNL 7 6824
05709 SET B 0001
05714 LOD 8 3218
05719 UNL 7 3217
05724 LOD 8 3212
05729 UNL 7 3730
05734 LOD 8 3213
05739 UNL 7 3685

WR BSP RD CMP 2CH-ARITHS

RESET PASS CTR

RESET WR FIELDS

05744 SET B 0004
05749 LOD 8 0489
05754 UNL 7 5834
05759 UNL 7 6049
05764 UNL 7 6124
05769 UNL 7 5914
05774 LOD 8 0494
05779 UNL 7 5844
05784 UNL 7 6039
05789 UNL 7 6074

TAPE #1

TAPE #2

AE21
AE22.....
05794 CHR 3 13 0000 0& 0
05799 UNL 7 14 6245 6BM5
05804 UNL 7 14 6360 6C00
05809 UNL 7 12 3880 3H80
05814 EEM 3 14 0000 0&-0
05819 SPC 0 0000
05824 LIM 07 0000 0 &0
05829 TRA I 5834-----
05834 SEL 2
05839 WR R 3680

RESET LONG T/O SWITCH
RESET LONG T/O SWITCH

TURN OFF ANY TGR

TAPE #1

NEXT PAGE

```
□□□□□□□□□□□□□□□□□□□□□□□□
□ 05844 SEL 2
□ 05849 WR R 3680
□ 05854 ADM 6 15 5875 5HG5
□□□□□□□□□□□□□□□□□□□□□□□□
```

TAPE #2

```
□□□□□□□□□□□□□□□□□□□□□□□□
I 05859 SET B 0010
I 05864 RAD H 7318
I 05869 ADD G 7329
I 05874 ST F 7349
I 05879 NOP A 6094-----AG20
□□□□□□□□□□□□□□□□□□□□□□□□
```

ARITHS WHILE RD/WR

SWITCH

```
□□□□□□□□□□□□□□□□□□□□□□□□
I 05884 TRS O 03 5894 58I4-
I 05889 TR 1 5914-----
I 05894 LDA # 02 5774 57P4-
I 05899 ULA * 02 19449 24M9
I 05904 LDA # 02 5904 59-4
I 05909 TR 1 19424 2424-CD39
□□□□□□□□□□□□□□□□□□□□□□□□
```

CHECK TAPE #2 WR

```
□□□□□□□□□□□□□□□□□□□□□□□□
I 05914 SEL 2
I 05919 TRS O 03 5929 59B9-
I 05924 TR 1 5949-----
I 05929 LDA # 02 5749 57M9-
I 05934 ULA * 02 19449 24M9
I 05939 LDA # 02 5939 59L9
I 05944 TR 1 19424 2424-CD39
□□□□□□□□□□□□□□□□□□□□□□□□
```

TAPE #1

CHECK TAPE #1 WR

AF20....

```
□□□□□□□□□□□□□□□□□□□□□□□□
I 05949 ADM 6 15 6015 66A5-
I 05954 ADM 6 15 6030 66C0-
I 05959 SET B 0010
I 05964 LOD 8 7349
I 05969 CMP 4 7339
I 05974 TRE L 6034-----
□□□□□□□□□□□□□□□□□□□□□□□□
```

CHECK FOR ARITH ERROR

```
□□□□□□□□□□□□□□□□□□□□□□□□
I 05979 TRA I 01 6034 60T4-
I 05984 SET B 0001
I 05989 LOD 8 3217
I 05994 UNL 7 7353
I 05999 SEL 2 0500
I 06004 WR R 7350
I 06009 TRS O 12 6014 6614-
I 06014 TRA I 03 6029 60B9-
I 06019 NOP A 6174-----AH20
I 06024 TR 1 6039-----
I 06029 HLT J 1003.....
I 06034 NOP A 6174-----AH20
□□□□□□□□□□□□□□□□□□□□□□□□
```

PASS NO AT T/O

SWITCH

SWITCH

```
□□□□□□□□□□□□□□□□□□□□□□□□
I 06039 SEL 2
I 06044 BSP 3 0004
I 06049 SEL 2
I 06054 BSP 3 0004
I 06059 RCV U 38004 H004
I 06064 BLM $ 0400
□□□□□□□□□□□□□□□□□□□□□□□□
```

TAPE #2

TAPE #1

```
□□□□□□□□□□□□□□□□□□□□□□□□
I 06069 RD Y 38000 H000
I 06074 SEL 2
I 06079 RD Y 39000 I000
I 06084 SGN T 15 5875 5HG5
I 06089 TR 1 5859
□□□□□□□□□□□□□□□□□□□□□□□□
```

TAPE #2

AG19.....06094 TRS 0 03 6104 6164-
06099 TR 1 6124-
06104 LDA # 02 5774 57P4-
06109 ULA * 02 19609 Z6-9
06114 LDA # 02 6114 61J4-
06119 TR 1 19589 Z589-CE40

CHECK TAPE #2 RD

06124 SEL 2
06129 TRS 0 03 6139 61C9-
06134 TR 1 6159-
06139 LDA # 02 5749 57M9-
06144 ULA * 02 19609 Z6-9
06149 LDA # 02 6149 61M9-
06154 TR 1 19589 Z589-CE40
06159 SGN T 15 6015 66A5-
06164 SGN T 15 6030 66C0-
06169 TR 1 5959-AF19

TAPE #1
CHECK TAPE #1 RD

AH19.....06174 SET B 0200
06179 LOD 8 3879
06184 CMP 4 38199 H199
06189 TRE L 6289-

CHECK FOR ERROR TAPE #1

NO ERROR TAPE #1

06194 SET B 0004
06199 LOD 8 0489
06204 UNL 7 6889
06209 UNL 7 12 6890 6H90
06214 TRA I 06 6729 6XK9-AP22
06219 TRA I 01 6289 62Y9-
06224 SET B 0001
06229 LOD 8 3217
06234 UNL 7 6880
06239 SEL 2 0500
06244 WR R 6877
06249 TR 1 6269-
06254 WR R 6891
06259 WR R 7095
06264 SGN T 15 6245 6BD5
06269 TRS 0 12 6274 6B74-
06274 TRA I 03 6284 62H4-
06279 TR 1 6289-
06284 HLT J 2003-

ERROR TAPE #1

LONG T/O SWITCH

AJ22.....06219 TRA I 01 6289 62Y9-
06224 SET B 0001
06229 LOD 8 3217
06234 UNL 7 6880
06239 SEL 2 0500
06244 WR R 6877
06249 TR 1 6269-
06254 WR R 6891
06259 WR R 7095
06264 SGN T 15 6245 6BD5
06269 TRS 0 12 6274 6B74-
06274 TRA I 03 6284 62H4-
06279 TR 1 6289-
06284 HLT J 2003-
06289 SET B 0200-
06294 LOD 8 3879
06299 CMP 4 39199 I199
06304 TRE L 6404-AL21

CHECK FOR ERROR TAPE #2

NO ERROR TAPE #2

NEXT PAGE

FROM PREVIOUS PAGE

PAGE 21 OF 84

8TS08

ERROR TAPE #2

AK22.....

```

06309 SET B 0004
06314 LOD 8 0494
06319 UNL 7 6889
06324 UNL 7 12 6890 6H90
06329 TRA I 06 6804 6Y-4
06334 TRA I 01 6404 64 4
06339 SET B 0001
06344 LOD 8 3217
06349 UNL 7 6880
06354 SEL 2 0500
06359 WR R 6877
06364 TR 1 6384
06369 WR R 6891
06374 WR R 7095
06379 SGN T 15 6360 6CF0
06384 TRS O 12 6389 6C89
06389 TRA I 03 6399 63I9
06394 TR 1 6404
06399 HLT J 3003

```

AQ22

PASS NO AT T/O

LONG T/O SWITCH

AL20.....

```

06404 RCV U 38004 H004
06409 BLM $ 0400
06414 SET B 0001
06419 LOD 8 3217
06424 CMP 4 3218
06429 TRE L 6464
06434 CMP 4 3216
06439 TRE L 6449
06444 TR 1 6679
06449 ADD G 3215
06454 UNL 7 3217
06459 TR 1 6574
06464 ADD G 3215
06469 UNL 7 3217

```

AN22

AM22

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES -0150

```

06474 LOD 8 3730
06479 UNL 7 3212
06484 UNL 7 12 3730 3G30
06489 ADM 6 09 6174 6JX4
06494 ADM 6 09 6179 6JX9
06499 ADM 6 09 6184 6JY4
06504 ADM 6 09 6289 6KY9
06509 ADM 6 09 6294 6KZ4
06514 ADM 6 09 6299 6KZ9
06519 ADM 6 09 6729 6PS9
06524 ADM 6 09 6734 6PT4
06529 ADM 6 09 6739 6PT9
06534 ADM 6 09 6744 6PU4
06539 ADM 6 09 6749 6PU9
06544 ADM 6 09 6804 6Q 4
06549 ADM 6 09 6809 6Q 9
06554 ADM 6 09 6814 6Q/4
06559 ADM 6 09 6819 6Q/9
06564 ADM 6 09 6824 6QS4
06569 TR 1 5794

```

AE18

```
AM21.....06574 SET B 0001
06579 LOD 8 3685
06584 UNL 7 3213
06589 UNL 7 12 3685 3F85
06594 ADM 6 10 6174 6JP4
06599 ADM 6 10 6179 6JP9
06604 ADM 6 10 6184 6JQ4
06609 ADM 6 10 6289 6KQ9
06614 ADM 6 10 6294 6KR4
06619 ADM 6 10 6299 6KR9
06624 ADM 6 10 6729 6PK9
06629 ADM 6 10 6734 6PL4
06634 ADM 6 10 6739 6PL9
06639 ADM 6 10 6744 6PM4
06644 ADM 6 10 6749 6PM9
06649 ADM 6 10 6804 6Q-4
06654 ADM 6 10 6809 6Q-9
06659 ADM 6 10 6814 6QJ4
06664 ADM 6 10 6819 6QJ9
06669 ADM 6 10 6824 6QK4
06674 TR 1 5794-----AE18
```

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES -0045

```
AN21.....06679 TRS 0 11 6684 6OH4-----
06684 SET B 0001-----
06689 LOD 8 3212
06694 UNL 7 3730
06699 LOD 8 3213
06704 UNL 7 3685
06709 RCV U 38004 H004
06714 BLM $ 0400
06719 TRA I 02 5594-----AD18
06724 TR 1 7379-----AR23
```

RESET FIELDS AND EXIT

TO 4TH ROUTINE

```
AP20.....06729 SET B 0200
06734 LOD 8 3879
06739 UNL 7 7093
06744 LOD 8 38199 H199
06749 UNL 7 7297
06754 LDA # 6739
06759 ADD G 3215
06764 ULA * 6769
06769 UNL 7 12 0000 0&00
06774 LDA # 6749
06779 ADD G 3215
06784 ULA * 6789
06789 UNL 7 12 0000 0&00
06794 ADM 6 15 6245 6BD5
06799 TR 1 6219-----AJ20
```

SET UP FOR LONG T/O TAPE #1

```
AQ21.....06804 SET B 0200
06809 LOD 8 3879
06814 UNL 7 7093
06819 LOD 8 39199 I199
06824 UNL 7 7297
06829 LDA # 6814
06834 ADD G 3215
06839 ULA * 6844
06844 UNL 7 12 0000 0&00
06849 LDA # 6824
06854 ADD G 3215
06859 ULA * 6864
06864 UNL 7 12 0000 0&00
06869 ADM 6 15 6360 6CF0
06874 TR 1 6334-----AK21
```

SET UP FOR LONG T/O TAPE #2

2 001 06875
 2 001 06876
 2 013 06889
 2 003 06892
 5 201 07093
 2 003 07096
 5 201 07297
 2 001 07298
 2 001 07299
 3 07303
 3 07307
 2 011 07318
 2 011 07329
 2 010 07339
 2 010 07349
 2 020 07369
 2 001 07370

TS-8-003
 WR

RD

□

7093 7093
 7297 7297

573621489A
 198412637E
 772034126F

TS-8-003 ARITH ERROR
 □

ROUTINE #004

AR22
 AR26.....

□	07379	SET	B	0004	□
□	07384	LOD	8	3222	□
□	07389	UNL	7	7814	□
□	07394	UNL	7	7929	□
□	07399	UNL	7	8374	□
□	07404	UNL	7	8449	□
□	07409	LOD	8	3226	□
□	07414	UNL	7	7824	□
□	07419	UNL	7	8389	□
□	07424	LOD	8	3242	□
□	07429	UNL	7	7819	□
□	07434	UNL	7	7934	□
□	07439	UNL	7	8379	□
□	07444	UNL	7	8454	□
□	07449	LOD	8	3230	□
□	07454	UNL	7	7939	□
□	07459	UNL	7	8464	□
□	07464	LOD	8	9256	□
□	07469	UNL	7	8384	□
□	07474	UNL	7	8459	□
□	07479	LOD	8	9260	□
□	07484	UNL	7	8394	□
□	07489	UNL	7	8469	□
□	07494	SET	B	0001	□
□	07499	LOD	8	3218	□
□	07504	UNL	7	3217	□
□	07509	LOD	8	3212	□
□	07514	UNL	7	3730	□
□	07519	LOD	8	3213	□
□	07524	UNL	7	3685	□

WR BSP RD CMP 2CH-INTERRUPT

RESET WR FIELDS

NEXT PAGE

gscans/g00142

07529 SET B 0004
07534 LOD 8 0489
07539 UNL 7 8524
07544 UNL 7 8549
07549 UNL 7 8589
07554 UNL 7 8614
07559 UNL 7 8639
07564 LDA # 8639
07569 ULA * 8544
07574 ULA * 8584
07579 ULA * 8609
07584 ULA * 8634
07589 ULA * 8674
07594 UNL 7 13 8544 8EU4
07599 UNL 7 13 8584 8EY4
07604 UNL 7 13 8609 8F9
07609 UNL 7 13 8634 8FT4
07614 UNL 7 13 8674 8FX4
07619 SET B 0004
07624 LOD 8 0494
07629 UNL 7 8679
07634 UNL 7 8704
07639 UNL 7 8744
07644 UNL 7 8769
07649 UNL 7 8794
07654 LDA # 8794
07659 ULA * 8699
07664 ULA * 8739
07669 ULA * 8764
07674 ULA * 8789
07679 ULA * 8829
07684 UNL 7 13 8699 8FZ9
07689 UNL 7 13 8739 8GT9
07694 UNL 7 13 8764 8GW4
07699 UNL 7 13 8789 8GY9
07704 UNL 7 13 8829 8HS9
07709 UNL 7 12 3880 3H80
07714 EEM 3 14 0000 0&-0
07719 SPC , 0000
07724 CHR 3 13 0000 0& 0
07729 UNL 7 14 7885 7HQ5
07734 UNL 7 14 8000 8&-0
07739 EIM , 06 0000 0 -0
07744 TRA I 7749

TAPE #1

TAPE #2

AS26.....

RESET LONG T/O SWITCH
RESET LONG T/O SWITCH
TURN OFF ANY TGR

07749 TIP , 14 8524 8EK4-----AZ27

TO WR TAPE #1

07754 TIP , 14 8679 8FP9-----BB28
07759 SET B 19999 Z999
07764 SET B 19999 Z999
07769 NOP A 19999 Z999

TO WR TAPE #2
AUTO TO CHECK TAPE #1 WR
AUTO TO CHECK TAPE #2 WR

07774 TIP , 14 8589 8EQ9-----BA27

TO BKSP TAPE #1

07779 TIP , 14 8744 8GM4-----BC28
07784 SET B 19999 Z999
07789 SET B 19999 Z999

TO BKSP TAPE #2
AUTO TO RD TAPE #1
AUTO TO RD TAPE #2

07794 SET B 19999 Z999
07799 SET B 19999 Z999
07804 SET B 19999 Z999
07809 SET B 19999 Z999

AUTO TO CHECK TAPE #1 RD
AUTO TO CHECK TAPE #2 RD

NEXT PAGE

g...ns/g0014172.

```
07814 SET B 0200
07819 LOD 8 3879
07824 CMP 4 38199 H199
07829 TRE L 7929
07834 SET B 0004
07839 LOD 8 0489
07844 UNL 7 8842
07849 UNL 7 12 8843 8H43
07854 TRA I 06 8374 8TP4
07859 TRA I 01 7929 79S9
07864 SET B 0001
07869 LOD 8 3217
07874 UNL 7 8833
07879 SEL 2 0500
07884 WR R 8830
07889 TR 1 7909
07894 WR R 8844
07899 WR R 9048
07904 SGN T 15 7885 7HH5
07909 TRS O 12 7914 7I14
07914 TRA I 03 7924 79B4
07919 TR 1 7929
07924 HLT J 1004
```

AT27.....

AX27

```
07929 SET B 0200
07934 LOD 8 3879
07939 CMP 4 39199 I199
07944 TRE L 8044
```

AU27.....

AY27

```
07949 SET B 0004
07954 LOD 8 0494
07959 UNL 7 8842
07964 UNL 7 12 8843 8H43
07969 TRA I 06 8449 8UM9
07974 TRA I 01 8044 8OU4
07979 SET B 0001
07984 LOD 8 3217
07989 UNL 7 8833
07994 SEL 2 0500
07999 WR R 8830
08004 TR 1 8024
08009 WR R 8844
08014 WR R 9048
08019 SGN T 15 8000 8E60
08024 TRS O 12 8029 8E29
08029 TRA I 03 8039 8OC9
08034 TR 1 8044
08039 HLT J 2004
```

```
08044 RCV U 38004 H004
08049 BLM $ 0400
08054 SET B 0001
08059 LOD 8 3217
08064 CMP 4 3218
08069 TRE L 8104
08074 CMP 4 3216
08079 TRE L 8089
08084 TR 1 8319
08089 ADD G 3215
08094 UNL 7 3217
08099 TR 1 8214
08104 ADD G 3215
08109 UNL 7 3217
```

NEXT PAGE

CHECK FOR ERROR TAPE #1

NO ERROR

ERROR

PASS NO AT T/O

LONG T/O SWITCH

CHECK FOR ERROR TAPE #2

NO ERROR

ERROR

LONG T/O SWITCH

FOR PASS #2

FOR PASS #3

AW26

AV26

08114 LOD 8 3730
08119 UNL 7 3212
08124 UNL 7 12 3730 3G30
08129 ADM 6 09 7814 7Q/4
08134 ADM 6 09 7819 7Q/9
08139 ADM 6 09 7824 7QS4
08144 ADM 6 09 7929 7RS9
08149 ADM 6 09 7934 7RT4
08154 ADM 6 09 7939 7RT9
08159 ADM 6 09 8374 8LX4
08164 ADM 6 09 8379 8LX9
08169 ADM 6 09 8384 8LY4
08174 ADM 6 09 8389 8LY9
08179 ADM 6 09 8394 8LZ4
08184 ADM 6 09 8449 8MU9
08189 ADM 6 09 8454 8MV4
08194 ADM 6 09 8459 8MV9
08199 ADM 6 09 8464 8MW4
08204 ADM 6 09 8469 8MW9
08209 TR 1 7714

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES -0150

AS24 2ND ROUTINE CYCLE

08214 SET B 0001
08219 LOD 8 3685
08224 UNL 7 3213
08229 UNL 7 12 3685 3F85
08234 ADM 6 10 7814 7QJ4
08239 ADM 6 10 7819 7QJ9
08244 ADM 6 10 7824 7QK4
08249 ADM 6 10 7929 7RK9
08254 ADM 6 10 7934 7RL4
08259 ADM 6 10 7939 7RL9
08264 ADM 6 10 8374 8LP4
08269 ADM 6 10 8379 8LP9
08274 ADM 6 10 8384 8LQ4
08279 ADM 6 10 8389 8LQ9
08284 ADM 6 10 8394 8LR4
08289 ADM 6 10 8449 8MM9
08294 ADM 6 10 8454 8MN4
08299 ADM 6 10 8459 8MN9
08304 ADM 6 10 8464 8MO4
08309 ADM 6 10 8469 8MO9
08314 TR 1 7714

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES -0045

AS24 3RD ROUTINE CYCLE

08319 TRS 0 11 8324 8LB4
08324 SET B 0001
08329 LOD 8 3212
08334 UNL 7 3730
08339 LOD 8 3213
08344 UNL 7 3685
08349 RCV U 38004 H004
08354 BLM \$ 0400
08359 LIM , 07 0000 0 & 0
08364 TRA I 02 7379 73P9
08369 TR 1 9269

RESET FIELDS AND EXIT

AR23
BD29 TO 5TH ROUTINE

AX25.....08374 SET B 0200
08379 LOD 8 3879
08384 UNL 7 9046
08389 LOD 8 38199 H199
08394 UNL 7 9250
08399 LDA # 8384
08404 ADD G 3215
08409 ULA * 8414
08414 UNL 7 12 0000 0600
08419 LDA # 8394
08424 ADD G 3215
08429 ULA * 8434
08434 UNL 7 12 0000 0600
08439 ADM 6 15 7885 7HH5
08444 TR 1 7859-----AT25

SET UP LONG T/O FOR TAPE #1

AY25.....08449 SET B 0200
08454 LOD 8 3879
08459 UNL 7 9046
08464 LOD 8 39199 I199
08469 UNL 7 9250
08474 LDA # 8459
08479 ADD G 3215
08484 ULA * 8489
08489 UNL 7 12 0000 0600
08494 LDA # 8469
08499 ADD G 3215
08504 ULA * 8509
08509 UNL 7 12 0000 0600
08514 ADM 6 15 8000 8660
08519 TR 1 7974-----AU25

SET UP LONG T/O FOR TAPE #2

AZ24.....08524 SEL 2
08529 WR R 3680
08534 LDA # 02 8534 85L4
08539 TRA I 20254 -254-----CN43
08544 LIP , 15 2660 2660

CHANNEL #1 INTERRUPT PROG
TAPE #1

UNL CH #1 HERE

08549 SEL 2
08554 TRS 0 03 8564 85F4-----
08559 TR 1 8584-----
08564 LDA # 02 7534 75L4
08569 ULA * 02 19449 24M9
08574 LDA # 02 8574 85P4
08579 TR 1 19424 2424-----CD39
08584 LIP , 15 2660 2660

TAPE #1

TO WR GYPSY
UNL CH #1 HERE

BA24.....08589 SEL 2
08594 BSP 3 0004
08599 LDA # 02 8599 85R9
08604 TRA I 20254 -254-----CN43
08609 LIP , 15 2660 2660

TAPE #1

UNL CH #1 HERE

08614 SEL 2
08619 RD Y 38000 H000
08624 LDA # 02 8624 86K4
08629 TRA I 20254 -254-----CN43
08634 LIP , 15 2660 2660

TAPE #1

UNL CH #1 HERE

NEXT PAGE

UNL GH #1 HERE

TAPE #2

UNL GH #2 HERE

TAPE #2

TAPE #2

UNL CH #2 HERE

TAPE #2

UNL GH #2 HERE

TAPE #2

UNL CH #2 HERE

WORK AREA AND CONSTANTS

2	013	08842		
2	003	08845		
5	201	09046		
2	003	09049		
5	201	09250		
2	001	09251		
2	001	09252		
3		09256	9046	9046
3		09260	9250	9250

TS-8-004-
WR

RD

ROUTINE #005

BD26

BD33.....

```

09269 SET B 0004
09274 LOD 8 3222
09279 UNL 7 9904
09284 UNL 7 10019 019
09289 UNL 7 10464 464
09294 UNL 7 10539 539
09299 LOD 8 3226
09304 UNL 7 9914
09309 UNL 7 10479 479
09314 LOD 8 3242
09319 UNL 7 9909
09324 UNL 7 10024 024
09329 UNL 7 10469 469
09334 UNL 7 10544 544
09339 LOD 8 3230
09344 UNL 7 10029 029
09349 UNL 7 10554 554
09354 LOD 8 11346 /346
09359 UNL 7 10474 474
09364 UNL 7 10549 549
09369 LOD 8 11350 /350
09374 UNL 7 10484 484
09379 UNL 7 10559 559
09384 SET B 0001
09389 LOD 8 3218
09394 UNL 7 3217
09399 LOD 8 3212
09404 UNL 7 3730
09409 LOD 8 3213
09414 UNL 7 3685

```

WR BSP RD CMP 2CH
-INTERRUPT-ARITHS

RESET WR FIELDS

NEXT PAGE

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8TS08

```
09704 SET B      0010
09709 LOD 8      11402 /402
09714 CMP 4      11392 /392
09719 TRE L      9779
```

CHECK ARITH ERROR

NO ERROR

```
09724 TRA I 01 9779 97X9
09729 SET B      0001
09734 LOD 8      3217
09739 UNL 7      11406 /406
09744 TRA I 01 9779 97X9
09749 SEL 2      0500
09754 WR R      11403 /403
09759 TRS O 12 9764 9G64
09764 TRA I 03 9774 97G4
09769 TR 1      9779
09774 HLT J      1005
09779 SET B      19999 Z999
09784 SET B      19999 Z999
09789 SET B      19999 Z999
```

ERROR

PASS NO AT T/O

AUTO TO RD TAPE #1
AUTO TO RD TAPE #2

```
09794 SET B      0010
09799 LOD 8      11360 /360
09804 ADD G      11371 /371
09809 SUB P      11382 /382
09814 ST F      11402 /402
09819 SET B      19999 Z999
09824 SET B      19999 Z999
09829 SET B      19999 Z999
09834 SET B      19999 Z999
```

ARITHMETICS WHILE RD

AUTO TO CHECK TAPE #1 RD
AUTO TO CHECK TAPE #2 RD

```
09839 SET B      0010
09844 LOD 8      11402 /402
09849 CMP 4      11392 /392
09854 TRE L      9904
```

CHECK FOR ARITH ERROR

NO ERROR

```
09859 TRA I 01 9904 99 4
09864 SET B      0001
09869 LOD 8      3217
09874 UNL 7      11430 /430
09879 SEL 2      0500
09884 WR R      11427 /427
09889 TRA I 03 9899 98I9
09894 TR 1      9904
09899 HLT J      2005
```

ARITH ERROR WHILE RD

PASS NO AT T/O

```
09904 SET B      0200
09909 LOD 8      3879
09914 CMP 4      38199 H199
09919 TRE L      10019 019
```

CHECK FOR ERROR TAPE #1

NO ERROR

BG32

NEXT PAGE

09924 SET B 0004
09929 LOD 8 0489
09934 UNL 7 10932 932
09939 UNL 7 12 10933 133
09944 TRA I 06 10464 U04
09949 TRA I 01 10019 0/9
09954 SET B 0001
09959 LOD 8 3217
09964 UNL 7 10923 923
09969 SEL 2 0500
09974 WR R 10920 920
09979 TR 1 9999
09984 WR R 10934 934
09989 WR R 11138 /138
09994 SGN T 15 9975 91G5
09999 TRS O 12 10004 804
10004 TRA I 03 10014 0A4
10009 TR 1 10019 019
10014 HLT J 3005

ERROR

PASS NO AT T/O

LONG T/O SWITCH

10019 SET B 0200
10024 LOD 8 3879
10029 CMP 4 39199 1199
10034 TRE L 10134 134

CHECK FOR ERROR TAPE #2

NO ERROR

10039 SET B 0004
10044 LOD 8 0494
10049 UNL 7 10932 932
10054 UNL 7 12 10933 133
10059 TRA I 06 10539 VL9
10064 TRA I 01 10134 1T4
10069 SET B 0001
10074 LOD 8 3217
10079 UNL 7 10923 923
10084 SEL 2 0500
10089 WR R 10920 920
10094 TR 1 10114 114
10099 WR R 10934 934
10104 WR R 11138 /138
10109 SGN T 15 10090 610
10114 TRS O 12 10119 A19
10119 TRA I 03 10129 1B9
10124 TR 1 10134 134
10129 HLT J 4005

ERROR

PASS NO AT T/O

LONG T/O SWITCH

10134 RCV U 38004 H004
10139 BLM \$ 0400
10144 SET B 0001
10149 LOD 8 3217
10154 CMP 4 3218
10159 TRE L 10194 194
10164 CMP 4 3216
10169 TRE L 10179 179
10174 TR 1 10409 409
10179 ADD G 3215
10184 UNL 7 3217
10189 TR 1 10304 304
10194 ADD G 3215
10199 UNL 7 3217

BK33

BJ33

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8TS08

```

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□ 10204 LOD 8 3730 □
□ 10209 UNL 7 3212 □
□ 10214 UNL 7 12 3730 3G30 □
□ 10219 ADM 6 09 9904 9R 4 □
□ 10224 ADM 6 09 9909 9R 9 □
□ 10229 ADM 6 09 9914 9R/4 □
□ 10234 ADM 6 09 10019 -/9 □
□ 10239 ADM 6 09 10024 -S4 □
□ 10244 ADM 6 09 10029 -S9 □
□ 10249 ADM 6 09 10464 MW4 □
□ 10254 ADM 6 09 10469 MW9 □
□ 10259 ADM 6 09 10474 MX4 □
□ 10264 ADM 6 09 10479 MX9 □
□ 10269 ADM 6 09 10484 MY4 □
□ 10274 ADM 6 09 10539 NT9 □
□ 10279 ADM 6 09 10544 NU4 □
□ 10284 ADM 6 09 10549 NU9 □
□ 10289 ADM 6 09 10554 NV4 □
□ 10294 ADM 6 09 10559 NV9 □
□ 10299 TR 1 9599 - - - - - □
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

```

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES -0150

-BE30 2ND ROUTINE CYCLE

BJ32.....

10304	SET	8	0001	
10309	LOD	8	3685	
10314	UNL	7	3213	
10319	UNL	7 12	3685	3F85
10324	ADM	6 10	9904	9R-4
10329	ADM	6 10	9909	9R-9
10334	ADM	6 10	9914	9RJ4
10339	ADM	6 10	10019	-J9
10344	ADM	6 10	10024	-K4
10349	ADM	6 10	10029	-K9
10354	ADM	6 10	10464	MO4
10359	ADM	6 10	10469	MO9
10364	ADM	6 10	10474	MP4
10369	ADM	6 10	10479	MP9
10374	ADM	6 10	10484	MQ4
10379	ADM	6 10	10539	NL9
10384	ADM	6 10	10544	NM4
10389	ADM	6 10	10549	NM9
10394	ADM	6 10	10554	NN4
10399	ADM	6 10	10559	NN9
10404	TR	1	9599	

SET UP FIELDS FOR PASS #3

CHANGE SDDRESSES -0045

-BE30 3RD ROUTINE CYCLE

BK32.....

[illegible]

RESET FIELDS AND EXIT

```
-BD29
-CQ43  END 2  CH  ROUTINES
```

BL32.....
10464 SET B 0200
10469 LOD 8 3879
10474 UNL 7 11136 /136
10479 LOD 8 38199 H199
10484 UNL 7 11340 /340
10489 LDA # 10474 474
10494 ADD G 3215
10499 ULA * 10504 504
10504 UNL 7 12 0000 0600
10509 LDA # 10484 484
10514 ADD G 3215
10519 ULA * 10524 524
10524 UNL 7 12 0000 0600
10529 ADM 6 15 9975 91G5
10534 TR 1 9949-----BF32

SET UP LONG T/O FOR TAPE #1

BM32.....
10539 SET B 0200
10544 LOD 8 3879
10549 UNL 7 11136 /136
10554 LOD 8 39199 I199
10559 UNL 7 11340 /340
10564 LDA # 10549 549
10569 ADD G 3215
10574 ULA * 10579 579
10579 UNL 7 12 0000 0600
10584 LDA # 10559 559
10589 ADD G 3215
10594 ULA * 10599 599
10599 UNL 7 12 0000 0600
10604 ADM 6 15 10090 610
10609 TR 1 10064 064-----BH32

SET UP LONG T/O FOR TAPE #2

BN30.....
10614 SEL 2
10619 WR R 3680
10624 LDA # 02 10624 6K4
10629 TRA I 20254 -254-----CN43
10634 LIP , 15 2660 2660

CHANNEL #1 INTERRUPT PROG

TAPE #1

10639 SEL 2
10644 TRS 0 03 10654 6E4
10649 TR 1 10674 674
10654 LDA # 02 9424 94K4
10659 ULA * 02 19449 Z4M9
10664 LDA # 02 10664 604
10669 TR 1 19424 Z424-----CD39
10674 LIP , 15 2660 2660

TAPE #1

TO WR GYPSY

BP30.....
10679 SEL 2
10684 BSP 3 0004
10689 LDA # 02 10689 6Q9
10694 TRA I 20254 -254-----CN43
10699 LIP , 15 2660 2660
10704 SEL 2
10709 RD Y 38000 H000
10714 LDA # 02 10714 7J4
10719 TRA I 20254 -254-----CN43
10724 LIP , 15 2660 2660

TAPE #1

TAPE #1

NEXT PAGE

□□□□□□□□□□□□□□□□□□□□

□ 10729 SEL 2 □
□ 10734 TRS 0 03 10744 7D4-
□ 10739 TR 1 10764 764-
□ 10744 LDA # 02 9424 94K4.
□ 10749 ULA * 02 19609 Z6-9
□ 10754 LDA # 02 10754 7N4
□ 10759 TR 1 19589 Z589-
□ 10764 LIP , 15 2&60 2&60.

TAPE #1

TO RD GYPSY

□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□

BQ30.....□ 10769 SEL 2 □
□ 10774 WR R 3680 □
□ 10779 LDA # 02 10779 7P9 □
□ 10784 TRA I 20254 -254-
□ 10789 LIP , 15 2&60 2&60

CHANNEL #2 INTERRUPT PROG

TAPE #2

□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□

□ 10794 SEL 2 □
□ 10799 TRS 0 03 10809 8&9-
□ 10804 TR 1 10829 829-
□ 10809 LDA # 02 9514 95J4.
□ 10814 ULA * 02 19449 Z4M9
□ 10819 LDA # 02 10819 8J9
□ 10824 TR 1 19424 Z424-
□ 10829 LIP , 15 2&60 2&60.

TAPE #2

TO WR GYPSY

□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□

BR30.....□ 10834 SEL 2 □
□ 10839 BSP 3 0004 □
□ 10844 LDA # 02 10844 8M4 □
□ 10849 TRA I 20254 -254-
□ 10854 LIP , 15 2&60 2&60

TAPE #2

□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□

□ 10859 SEL 2 □
□ 10864 RD Y 39000 1000 □
□ 10869 LDA # 02 10869 809 □
□ 10874 TRA I 20254 -254-
□ 10879 LIP , 15 2&60 2&60

TAPE #2

□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□

□ 10884 SEL 2 □
□ 10889 TRS 0 03 10899 8I9-
□ 10894 TR 1 10919 9I9-
□ 10899 LDA # 02 9514 95J4.
□ 10904 ULA * 02 19609 Z6-9
□ 10909 LDA # 02 10909 9-9
□ 10914 TR 1 19589 Z589-
□ 10919 LIP , 15 2&60 2&60.

TAPE #2

TO RD GYPSY

□□□□□□□□□□□□□□□□□□□□

NEXT PAGE

2	013	10932
2	003	10935
2	201	111136
2	003	111139
2	201	111340
2	001	11341
2	001	11342
		11346
3		11350
2	010	11360
2	011	11371
2	011	11382
2	010	11392
2	010	11402
2	023	11425
2	001	11426
2	023	11449
2	001	11450

TS-8-005-
WR

RD

11136 / 136
11340 / 340

&5273416890
& 3615471998
& 1111111111
&7777777777
&

TS- -005 ARITH ERROR WR

TS- 0005 ABITH ERROR RD

□

RD 03 GYPSY AREA

[illegible]

BT36.....
19039 ADD G 02 19423 Z4K3
19044 ULA * 02 19059 Z0N9
19049 SEL 2 0500
19054 WR R 19060 Z060
19059 TR 1 0000

2 010 19069 RW REG VRC
2 001 19070

BU36.....
19079 ADD G 02 19423 Z4K3
19084 ULA * 02 19099 Z0R9
19089 SEL 2 0500
19094 WR R 19100 Z100
19099 TR 1 0000

2 009 19108 REG A VRC
2 001 19109

BV36.....
19114 ADD G 02 19423 Z4K3
19119 ULA * 02 19134 Z1L4
19124 SEL 2 0500
19129 WR R 19135 Z135
19134 TR 1 0000

2 008 19142 ECHO CHK
2 001 19143

BW36.....
19149 ADD G 02 19423 Z4K3
19154 ULA * 02 19169 Z109
19159 SEL 2 0500
19164 WR R 19170 Z170
19169 TR 1 0000

2 007 19176 RD LRCR
2 001 19177

BX36.....
19184 ADD G 02 19423 Z4K3
19189 ULA * 02 19204 Z2-4
19194 SEL 2 0500
19199 WR R 19205 Z205
19204 TR 1 0000

2 007 19211 CMP CHK
2 001 19212

BY36.....
19219 ADD G 02 19423 Z4K3
19224 ULA * 02 19239 Z2L9
19229 SEL 2 0500
19234 WR R 19240 Z240
19239 TR 1 0000

2 008 19247 SKEW CHK
2 001 19248

BZ36.....
19254 ADD G 02 19423 Z4K3
19259 ULA * 02 19274 Z2P4
19264 SEL 2 0500
19269 WR R 19275 Z275
19274 TR 1 0000

2 007 19281 DWT CHK
2 001 19282

CA36.....
19289 ADD G 02 19423 Z4K3
19294 ULA * 02 19309 Z3-9
19299 SEL 2 0500
19304 WR R 19310 Z310
19309 TR 1 0000

2 009 19318 UNANS DMD
2 001 19319

CB36.....
19324 ADD G 02 19423 Z4K3
19329 ULA * 02 19344 Z3M4
19334 SEL 2 0500
19339 WR R 19345 Z345
19344 TR 1 0000

2 005 19349 CH ID
2 001 19350

CC36.....
19359 ADD G 02 19423 Z4K3
19364 ULA * 02 19379 Z3P9
19369 SEL 2 0500
19374 WR R 19380 Z380
19379 TR 1 0000

```

MPX OVFL
□

□
SENSE INFO
□
NO ERROR
□

```

CD10
CD14
CD15
CD19
CD27
CD28
CD34
CD35
CD45
CD46
CD52
CD53
CD54
CD55
CD60
CD71
CD72
CD73
CD80
CD81
CD82

G 24 K 3
G-~~NO BY~~ Add

01	00	10	08
9	4	2	3
19	4	2	3

PLUS TEN

[illegible]

CHAN CHK TD 1 WR
H

-BS36 TO 916 GYPSY-RD 03

CHAN CHK TD 1 RD
H

CF39

CF40.....

```

19749 SPC , 0000
19754 NOP A 0000
19759 SET B 02 0004 00-4
19764 LOD 8 02 19859 Z8N9
19769 UNL 7 02 19879 Z8P9
19774 TRA I 01 19794 Z7Z4
19779 SEL 2 0500
19784 WR R 19865 Z865
19789 TRS O 12 19794 ZG94
19794 SET B 0004
19799 LOD 8 0398
19804 UNL 7 19809 Z809
19809 LOD 8 0504
19814 CMP 4 1721
19819 TRE L 19854 Z854
19824 UNL 7 19829 Z829
19829 SEL 2 0000
19834 IOF 3 0000
19839 RWD 3 0002
19844 ADM 6 01 19809 Z8 9
19849 TR 1 19809 Z809
19854 SEL 2 0000
19859 NOP A 0000
19864 TR 1 0754

```

TI GYPSY

RWD SUB-ROUTINE--TI ON

BLANKS

C04 RESTART

2 018 19882
2 001 19883

TI ON
□

-IC

CG43.....

```

19889 LDA # 02 19889 Z8Q9
19894 SEL 2 0900
19899 TRS O 19984 Z984
19904 LDA # 02 19904 Z9-4
19909 SEL 2 0901
19914 TRS O 20024 -024
19919 LDA # 02 19919 Z9J9
19924 SEL 2 0902
19929 TRS O 20064 -064
19934 LDA # 02 19934 Z9L4
19939 SEL 2 0903
19944 TRS O 20104 -104
19949 LDA # 02 19949 Z9M9
19954 SEL 2 0904
19959 TRS O 20144 -144
19964 LDA # 02 19964 Z9O4
19969 SEL 2 0905
19974 TRS O 20184 -184
19979 TR 1 20299 -299

```

19984 ADD G 02 19423 Z4K3
19989 ULA * 02 20009 -0-9
19994 TRA I 01 20009 -0 9
19999 SEL 2 0500
20004 WR R 20010 -010
20009 TR 1 0000

CH42

CJ42

CK42

CL42

CM42

CP43

2 007 20016
2 001 20017

900 CHK
□

```

2 007 20056      901 CHK
2 001 20057      □

```

2 007 20096 902 CHK
2 001 20097 □

2 007 20136 903 CHK
2 001 20137 □

2 007 20176 904 CHK
2 001 20177 □

```
CM41..... 20184 ADD G 02 19423 Z4K3  20189 ULA * 02 20209 -2-9  20194 TRA I 01 20209 -2 9  20199 SEL 2 0500  20204 WR R 20210 -210  20209 TR 1 0000.....
```

905 CHK
ANY TGR ON IN INT
PROG -IC

	20254	ADD	G	02	19423	Z4K3
	20259	ULA	*	02	20299	-2R9
	20264	SET	B	02	0004	00-4
	20269	LOD	8	02	20299	-2R9
	20274	UNL	7	02	20244	-2M4
	20279	TRA	I	01	20294	-2Z4
	20284	SEL	2		0500	
	20289	WR	R		20218	-218
	20294	TR	1		19889	Z889
	20299	TR	1		0000	

CP41.....

CQ33
CR80

```

#####
#.20304 TR 1 0799-----#
#.20309 TR 1 1179-----#
#####

```

-D04 TO RESTART 2 CH ROUTINES
-F06 TO RESTART 4 CH ROUTINES

ROUTINE #008

```
CS08
CS49.....  20314 SET B 0004
              20319 LOD 8 3222
              20324 UNL 7 21094 J094
              20329 UNL 7 21159 J159
              20334 UNL 7 21224 J224
              20339 UNL 7 21289 J289
              20344 LOD 8 3234
              20349 UNL 7 21104 J104
              20354 UNL 7 21124 J124
              20359 LOD 8 3242
              20364 UNL 7 21099 J099
              20369 UNL 7 21114 J114
              20374 UNL 7 21164 J164
              20379 UNL 7 21179 J179
              20384 UNL 7 21229 J229
              20389 UNL 7 21244 J244
              20394 UNL 7 21294 J294
              20399 UNL 7 21309 J309
              20404 LOD 8 3238
              20409 UNL 7 21169 J169
              20414 UNL 7 21189 J189
              20419 LOD 8 3226
              20424 UNL 7 21234 J234
              20429 UNL 7 21254 J254
              20434 LOD 8 3230
              20439 UNL 7 21299 J299
              20444 UNL 7 21319 J319
              20449 LOD 8 22374 K374
              20454 UNL 7 21119 J119
              20459 UNL 7 21184 J184
              20464 UNL 7 21249 J249
              20469 UNL 7 21314 J314
              20474 LOD 8 22378 K378
              20479 UNL 7 21129 J129
              20484 UNL 7 21194 J194
              20489 UNL 7 21259 J259
              20494 UNL 7 21324 J324
              20499 SET B 0001
              20504 LOD 8 3218
              20509 UNL 7 3217
              20514 LOD 8 3212
              20519 UNL 7 3730
              20524 LOD 8 3213
              20529 UNL 7 3685
```

WR BSP RD CMP 4CH

RESET PASS CTR
RESET WR FIELDSV
NEXT PAGE

```

□□□□□□□□□□□□□□□□□□□□□□□□
□ 20534 SET B      0004 □
□ 20539 LOD 8      1669 □
□ 20544 UNL 7      20689 -689 □
□ 20549 UNL 7      20729 -729 □
□ 20554 UNL 7      20899 -899 □
□ 20559 UNL 7      20954 -954 □
□ 20564 LOD 8      1674 □
□ 20569 UNL 7      20699 -699 □
□ 20574 UNL 7      20764 -764 □
□ 20579 UNL 7      20889 -889 □
□ 20584 UNL 7      20924 -924 □
□ 20589 UNL 7      20989 -989 □
□ 20594 LOD 8      1679 □
□ 20599 UNL 7      20709 -709 □
□ 20604 UNL 7      20799 -799 □
□ 20609 UNL 7      20879 -879 □
□ 20614 UNL 7      20934 -934 □
□ 20619 UNL 7      21024 J024 □
□ 20624 LOD 8      1684 □
□ 20629 UNL 7      20719 -719 □
□ 20634 UNL 7      20834 -834 □
□ 20639 UNL 7      20869 -869 □
□ 20644 UNL 7      20944 -944 □
□ 20649 UNL 7      21059 J059 □

```

TAPE #1

TAPE #2

TAPE #3

TAPE #4

CT48

CT49

```

□ 20654 CHR 3 13 0000 06 0 □
□ 20659 UNL 7 14 21845 JHM5 □
□ 20664 UNL 7 12 3880 3H80 □
□ 20669 EEM 3 14 0000 06-0 □
□ 20674 SPC , 0000 □
□ 20679 LIM , 07 0000 0 60 □
□ 20684 TRA I 20689 -689 -

```

RESET LONG T/O SWITCH

TURN OFF ANY TGR

```

□□□□□□□□□□□□□□□□□□□□□□□□
□ 20689 SEL 2      ..... □
□ 20694 WR R      3680 □

```

TAPE #1

```

□□□□□□□□□□□□□□□□□□□□□□□□
□ 20699 SEL 2      ..... □
□ 20704 WR R      3680 □

```

TAPE #2

```

□□□□□□□□□□□□□□□□□□□□□□□□
□ 20709 SEL 2      ..... □
□ 20714 WR R      3680 □

```

TAPE #3

```

□□□□□□□□□□□□□□□□□□□□□□□□
□ 20719 SEL 2      ..... □
□ 20724 WR R      3680 □

```

TAPE #4

```

□□□□□□□□□□□□□□□□□□□□□□□□
□ 20729 SEL 2      ..... □
□ 20734 TRS 0 03 20744 -7D4 -
□ 20739 TR 1 20764 -764 -

```

TAPE #1

```

□ 20744 LDA # 02 20539 -5L9 .
□ 20749 ULA * 02 19449 Z4M9 □
□ 20754 LDA # 02 20754 -7N4 □
□ 20759 TR 1 19424 Z424 -

```

CD39

TO WR GYPSY

```

□□□□□□□□□□□□□□□□□□□□□□□□
□ 20764 SEL 2      ..... □
□ 20769 TRS 0 03 20779 -7G9 -
□ 20774 TR 1 20799 -799 -
□ 20779 LDA # 02 20564 -504 .
□ 20784 ULA * 02 19449 Z4M9 □
□ 20789 LDA # 02 20789 -7Q9 □
□ 20794 TR 1 19424 Z424 -

```

TAPE #2

CU46

CD39

TO WR GYPSY

CU45.....

```

20799 SEL 2
20804 TRS 0 03 20814 -8A4-
20809 TR 1 20834 -834-
20814 LDA # 02 20594 -5R4-
20819 ULA * 02 19449 Z4M9
20824 LDA # 02 20824 -8K4-
20829 TR 1 19424 Z424-

```

TAPE #3

TO WR GYPSY

```

20834 SEL 2
20839 TRS 0 03 20849 -8D9-
20844 TR 1 20869 -869-
20849 LDA # 02 20624 -6K4-
20854 ULA * 02 19449 Z4M9
20859 LDA # 02 20859 -8N9-
20864 TR 1 19424 Z424-

```

TAPE #4

TO WR GYPSY

```

20869 SEL 2
20874 BSP 3 0004
20879 SEL 2
20884 BSP 3 0004
20889 SEL 2
20894 BSP 3 0004
20899 SEL 2
20904 BSP 3 0004

```

TAPE #4

TAPE #3

TAPE #2

TAPE #1

```

20909 RCV U 36004 F004
20914 BLM $ 0800

```

RD FIELD

```

20919 RD Y 36000 F000

```

RD TAPE #1

```

20924 SEL 2
20929 RD Y 37000 G000

```

RD TAPE #2

```

20934 SEL 2
20939 RD Y 38000 H000

```

RD TAPE #3

```

20944 SEL 2
20949 RD Y 39000 I000

```

RD TAPE #4

```

20954 SEL 2
20959 TRS 0 03 20969 -9F9-
20964 TR 1 20989 -989-
20969 LDA # 02 20539 -5L9-
20974 ULA * 02 19609 Z6-9
20979 LDA # 02 20979 -9P9-
20984 TR 1 19589 Z589-

```

TAPE #1

TO RD GYPSY

```

20989 SEL 2
20994 TRS 0 03 21004 J064-
20999 TR 1 21024 J024-
21004 LDA # 02 20564 -504-
21009 ULA * 02 19609 Z6-9
21014 LDA # 02 21014 J0J4
21019 TR 1 19589 Z589-

```

TAPE #2

CV47

TO RD GYPSY

CV46.....

```

□ 21024 SEL 2
□ 21029 TRS 0 03 21039 J0C9-
□ 21034 TR 1 21059 J059-
□ 21039 LDA # 02 20594 -5R4.
□ 21044 ULA * 02 19609 Z6-9
□ 21049 LDA # 02 21049 J0M9
□ 21054 TR 1 19589 Z589-

```

TAPE #3

CE40 TO RD GYPSY

```

□ 21059 SEL 2
□ 21064 TRS 0 03 21074 J0G4-
□ 21069 TR 1 21094 J094-
□ 21074 LDA # 02 20624 -6K4.
□ 21079 ULA * 02 19609 Z6-9
□ 21084 LDA # 02 21084 J0Q4
□ 21089 TR 1 19589 Z589-

```

TAPE #4

CE40 TO RD GYPSY

```

□ 21094 SET B 0200
□ 21099 LOD 8 3879
□ 21104 CMP 4 36199 F199
□ 21109 TRE L 21159 J159-
□ 21114 LOD 8 3879
□ 21119 UNL 7 22164 K164
□ 21124 LOD 8 36199 F199
□ 21129 UNL 7 22368 K368
□ 21134 SET B 0004
□ 21139 LOD 8 1669
□ 21144 UNL 7 21960 J960
□ 21149 LDA # 21149 J149
□ 21154 TR 1 21799 J799-

```

CHECK FOR ERROR TAPE #1

NO ERROR TAPE #1

RD FIELD

CZ49 ERROR TAPE #1

```

□ 21159 SET B 0200
□ 21164 LOD 8 3879
□ 21169 CMP 4 37199 G199
□ 21174 TRE L 21224 J224-
□ 21179 LOD 8 3879
□ 21184 UNL 7 22164 K164
□ 21189 LOD 8 37199 G199
□ 21194 UNL 7 22368 K368
□ 21199 SET B 0004
□ 21204 LOD 8 1674
□ 21209 UNL 7 21960 J960
□ 21214 LDA # 21214 J214
□ 21219 TR 1 21799 J799-

```

CHECK FOR ERROR TAPE #2

NO ERROR TAPE #2

CZ49 ERROR TAPE #2

```

□ 21224 SET B 0200
□ 21229 LOD 8 3879
□ 21234 CMP 4 38199 H199
□ 21239 TRE L 21289 J289-
□ 21244 LOD 8 3879
□ 21249 UNL 7 22164 K164
□ 21254 LOD 8 38199 H199
□ 21259 UNL 7 22368 K368
□ 21264 SET B 0004
□ 21269 LOD 8 1679
□ 21274 UNL 7 21960 J960
□ 21279 LDA # 21279 J279
□ 21284 TR 1 21799 J799-

```

CHECK FOR ERROR TAPE #3

CW48 NO ERROR TAPE #3

CZ49 ERROR TAPE #3

CW47.....
□ 21289 SET B 0200
□ 21294 LOD 8 3879
□ 21299 CMP 4 39199 I199
□ 21304 TRE L 21354 J354
□ 21309 LOD 8 3879
□ 21314 UNL 7 22164 K164
□ 21319 LOD 8 39199 I199
□ 21324 UNL 7 22368 K368
□ 21329 SET B 0004
□ 21334 LOD 8 1684
□ 21339 UNL 7 21960 J960
□ 21344 LDA # 21344 J344
□ 21349 TR 1 21799 J799
-----CZ49

CHECK FOR ERROR TAPE #4

NO ERROR TAPE #4

□ 21354 RCV U 36004 F004
□ 21359 BLM \$ 0800
□ 21364 SET B 0001
□ 21369 LOD 8 3217
□ 21374 CMP 4 3218
□ 21379 TRE L 21414 J414
□ 21384 CMP 4 3216
□ 21389 TRE L 21399 J399
□ 21394 TR 1 21749 J749
-----CY49
□ 21399 ADD G 3215
□ 21404 UNL 7 3217
□ 21409 TR 1 21584 J584
-----CX49
□ 21414 ADD G 3215
□ 21419 UNL 7 3217

FOR PASS #2

FOR PASS #3

□ 21424 LOD 8 3730
□ 21429 UNL 7 3212
□ 21434 UNL 7 12 3730 3G30
□ 21439 ADM 6 09 21094 J-Z4
□ 21444 ADM 6 09 21099 J-Z9
□ 21449 ADM 6 09 21104 JJ 4
□ 21454 ADM 6 09 21114 JJ/4
□ 21459 ADM 6 09 21119 JJ/9
□ 21464 ADM 6 09 21124 JJS4
□ 21469 ADM 6 09 21129 JJS9
□ 21474 ADM 6 09 21159 JJV9
□ 21479 ADM 6 09 21164 JJW4
□ 21484 ADM 6 09 21169 JJW9
□ 21489 ADM 6 09 21179 JJX9
□ 21494 ADM 6 09 21184 JJJ4
□ 21499 ADM 6 09 21189 JJY9
□ 21504 ADM 6 09 21194 JJZ4
□ 21509 ADM 6 09 21224 JKS4
□ 21514 ADM 6 09 21229 JKS9
□ 21519 ADM 6 09 21234 JKT4
□ 21524 ADM 6 09 21244 JKU4
□ 21529 ADM 6 09 21249 JKU9
□ 21534 ADM 6 09 21254 JKV4
□ 21539 ADM 6 09 21259 JKV9
□ 21544 ADM 6 09 21289 JKY9
□ 21549 ADM 6 09 21294 JKZ4
□ 21554 ADM 6 09 21299 JKZ9
□ 21559 ADM 6 09 21309 JL 9
□ 21564 ADM 6 09 21314 JL/4
□ 21569 ADM 6 09 21319 JL/9
□ 21574 ADM 6 09 21324 JLS4
□ 21579 TR 1 20654 -654
-----CT45

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES -0150

PASS #2

CX48.....

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
21584 SET B 0001
21589 LOD 8 3685
21594 UNL 7 3213
21599 UNL 7 12 3685 3F85
21604 ADM 6 10 21094 J-R4
21609 ADM 6 10 21099 J-R9
21614 ADM 6 10 21104 JJ-4
21619 ADM 6 10 21114 JJJ4
21624 ADM 6 10 21119 JJJ9
21629 ADM 6 10 21124 JJK4
21634 ADM 6 10 21129 JJK9
21639 ADM 6 10 21159 JJN9
21644 ADM 6 10 21164 JJO4
21649 ADM 6 10 21169 JJO9
21654 ADM 6 10 21179 JJP9
21659 ADM 6 10 21184 JJQ4
21664 ADM 6 10 21189 JJQ9
21669 ADM 6 10 21194 JJR4
21674 ADM 6 10 21224 JKK4
21679 ADM 6 10 21229 JKK9
21684 ADM 6 10 21234 JKL4
21689 ADM 6 10 21244 JKM4
21694 ADM 6 10 21249 JKM9
21699 ADM 6 10 21254 JKN4
21704 ADM 6 10 21259 JKN9
21709 ADM 6 10 21289 JKQ9
21714 ADM 6 10 21294 JKR4
21719 ADM 6 10 21299 JKR9
21724 ADM 6 10 21309 JL-9
21729 ADM 6 10 21314 JIJ4
21734 ADM 6 10 21319 JIJ9
21739 ADM 6 10 21324 JIK4
21744 TR 1 20654 -654-----CT45
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES -0045

CY48.....

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
21749 TRS 0 11 21754 JPE4-----
21754 SET B 0001.....
21759 LOD 8 3212
21764 UNL 7 3730
21769 LOD 8 3213
21774 UNL 7 3685
21779 RCV U 36004 F004
21784 BLM $ 0800
21789 TRA I 02 20314 -3J4-----CS44
21794 TR 1 22384 K384-----DC51
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

RESET FIELDS AND EXIT

TO ROUTINE #009

CZ47

CZ48.....

DA50.....

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
21799 ADD G 21942 J942
21804 ULA * 21889 J889
21809 TRA I 06 21894 JYR4-----DB50
21814 UNL 7 12 21961 JI61
21819 TRA I 01 21889 J8Y9-----
21824 SET B 0001
21829 LOD 8 3217
21834 UNL 7 21951 J951
21839 SEL 2 0500
21844 WR R 21948 J948
21849 TR 1 21869 J869-----
21854 WR R 21962 J962
21859 WR R 22166 K166
21864 SGN T 15 21845 JHD5
21869 TRS 0 12 21874 JH74
21874 TRA I 03 21884 J8H4
21879 TR 1 21889 J889-----
21884 HLT J 1008.....
21889 TR 1 0000.....
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

TYPE OUT AREA-
ALL CHANNELS

PASS NO AT T/O

LONG T/O SWITCH

DB49.....
 21894 LDA # 21119 J119
 21899 ADD 6 3215
 21904 ULA * 21909 J909
 21909 UNL 7 12 0000 0600
 21914 LDA # 21129 J129
 21919 ADD G 3215
 21924 ULA * 21929 J929
 21929 UNL 7 12 0000 0600
 21934 ADM 6 15 21845 JHD5
 21939 TR 1 21814 J814-----DA49

SET UP LONG T/O

GROUP MARK

2 003 21942
 2 005 21947
 2 013 21960
 2 003 21963
 5 201 22164
 2 003 22167
 5 201 22368
 2 001 22369
 2 001 22370
 3 22374
 3 22378
 22164 K164
 22368 K368

WORK AREA AND CONSTANTS

16
 G*#1
 TS- -008-
 WR
 RD
 □

ROUTINE #009

gans/g0014185.png

```
DC49
DC57.....
22384 SET B 0004
22389 LOD 8 3222
22394 UNL 7 23274 L274
22399 UNL 7 23339 L339
22404 UNL 7 23594 L594
22409 UNL 7 23659 L659
22414 LOD 8 3234
22419 UNL 7 23284 L284
22424 UNL 7 23304 L304
22429 LOD 8 3242
22434 UNL 7 23279 L279
22439 UNL 7 23294 L294
22444 UNL 7 23344 L344
22449 UNL 7 23359 L359
22454 UNL 7 23599 L599
22459 UNL 7 23614 L614
22464 UNL 7 23664 L664
22469 UNL 7 23679 L679
22474 LOD 8 3238
22479 UNL 7 23604 L604
22484 UNL 7 23624 L624
22489 LOD 8 3226
22494 UNL 7 23349 L349
22499 UNL 7 23369 L369
22504 LOD 8 3230
22509 UNL 7 23669 L669
22514 UNL 7 23689 L689
22519 LOD 8 24313 M313
22524 UNL 7 23299 L299
22529 UNL 7 23364 L364
22534 UNL 7 23619 L619
22539 UNL 7 23684 L684
22544 LOD 8 24317 M317
22549 UNL 7 23309 L309
22554 UNL 7 23374 L374
22559 UNL 7 23629 L629
22564 UNL 7 23694 L694
22569 SET B 0001
22574 LOD 8 3218
22579 UNL 7 3217
22584 LOD 8 3212
22589 UNL 7 3730
22594 LOD 8 3213
22599 UNL 7 3685
I
22604 SET B 0004
22609 LOD 8 1669
22614 UNL 7 22824 K824
22619 UNL 7 22864 K864
22624 UNL 7 23004 L004
22629 UNL 7 23054 L054
22634 UNL 7 23094 L094
22639 UNL 7 23234 L234
22644 UNL 7 23414 L414
22649 UNL 7 23454 L454
I
22654 LOD 8 1674
22659 UNL 7 22834 K834
22664 UNL 7 22899 K899
22669 UNL 7 23014 L014
22674 UNL 7 23064 L064
22679 UNL 7 23129 L129
22684 UNL 7 23244 L244
22689 UNL 7 23424 L424
22694 UNL 7 23489 L489
I
```

WR 2CH WHILE RD 2CH
CMP FOR ERROR

RESET SET 0200

RESET F199

RESET G199

RESET H199

RESET I199

RESET CYCLE CTR

TAPE #1

TAPE #2

NEXT PAGE

gscans/g0014223.png

```
□ 22699 LOD 8 1679 □
□ 22704 UNL 7 22844 K844 □
□ 22709 UNL 7 22934 K934 □
□ 22714 UNL 7 23024 L024 □
□ 22719 UNL 7 23074 L074 □
□ 22724 UNL 7 23164 L164 □
□ 22729 UNL 7 23254 L254 □
□ 22734 UNL 7 23434 L434 □
□ 22739 UNL 7 23524 L524 □
```

TAPE #3

```
□ 22744 LOD 8 1684 □
□ 22749 UNL 7 22854 K854 □
□ 22754 UNL 7 22969 K969 □
□ 22759 UNL 7 23034 L034 □
□ 22764 UNL 7 23084 L084 □
□ 22769 UNL 7 23199 L199 □
□ 22774 UNL 7 23264 L264 □
□ 22779 UNL 7 23444 L444 □
□ 22784 UNL 7 23559 L559 □
```

TAPE #4

DD56

```
DD57.....□ 22789 CHR 3 13 0000 06 0 □
□ 22794 UNL 7 14 24215 MBJ5 □
□ 22799 UNL 7 12 3880 3H80 □
□ 22804 EEM 3 14 0000 06-0 □
□ 22809 SPC , 0000 □
□ 22814 LIM , 07 0000 0 60 □
□ 22819 TRA I 22824 K824 □
```

RESET LONG T/O SWITCH

TURN OFF ANY TGR

```
□ 22824 SEL 2 ..... □
□ 22829 WR R 3680 □
□ 22834 SEL 2 ..... □
□ 22839 WR R 3680 □
□ 22844 SEL 2 ..... □
□ 22849 WR R 3680 □
□ 22854 SEL 2 ..... □
□ 22859 WR R 3680 □
```

#1-WRITE 4 TAPES

#2

#3

#4

```
□ 22864 SEL 2 ..... □
□ 22869 TRS 0 03 22879 K8G9 □
□ 22874 TR 1 22899 K899 □
□ 22879 LDA # 02 22609 K6-9 □
□ 22884 ULA * 02 19449 Z4M9 □
□ 22889 LDA # 02 22889 K8Q9 □
□ 22894 TR 1 19424 Z424 □
```

TAPE #1

TO WR GYPSY

```
□ 22899 SEL 2 ..... □
□ 22904 TRS 0 03 22914 K9A4 □
□ 22909 TR 1 22934 K934 □
□ 22914 LDA # 02 22654 K6N4 □
□ 22919 ULA * 02 19449 Z4M9 □
□ 22924 LDA # 02 22924 K9K4 □
□ 22929 TR 1 19424 Z424 □
```

TAPE #2

TO WR GYPSY

```
□ 22934 SEL 2 ..... □
□ 22939 TRS 0 03 22949 K9D9 □
□ 22944 TR 1 22969 K969 □
□ 22949 LDA # 02 22699 K6R9 □
□ 22954 ULA * 02 19449 Z4M9 □
□ 22959 LDA # 02 22959 K9N9 □
□ 22964 TR 1 19424 Z424 □
```

TAPE #3

TO WR GYPSY

TAPE #4

-CD39 TO WR GYPSY

#1 BKSP ALL TAPES

#2

#3

#4

BLANK RD AREA

#1 WR 2 WHILE RD 2

#2

#3

#4

TAPE #1

-CE40 TO RD GYPSY

TAPE #2

-CD39 TO WR GYPSY

TAPE #3

-DF54

-CE40 TO RD GYPSY

TO WR GYPSY

#4

NO ERROR

NO ERROR

BLANK RD AREA

#4

NEXT PAGE

```

□ 23454 SEL 2
□ 23459 TRS 0 03 23469 L4F9-
□ 23464 TR 1 23489 L489-
□ 23469 LDA # 02 22609 K6-9-
□ 23474 ULA * 02 19449 Z4M9
□ 23479 LDA # 02 23479 L4P9
□ 23484 TR 1 19424 Z424-

```

TAPE #1

CD39 TO WR GYPSY

```

□ 23489 SEL 2
□ 23494 TRS 0 03 23504 L564-
□ 23499 TR 1 23524 L524-
□ 23504 LDA # 02 22654 K6N4-
□ 23509 ULA * 02 19609 Z6-9
□ 23514 LDA # 02 23514 L5J4
□ 23519 TR 1 19589 Z589-

```

TAPE #2

CE40 TO RD GYPSY

```

□ 23524 SEL 2
□ 23529 TRS 0 03 23539 L5C9-
□ 23534 TR 1 23559 L559-
□ 23539 LDA # 02 22699 K6R9-
□ 23544 ULA * 02 19449 Z4M9
□ 23549 LDA # 02 23549 L5M9
□ 23554 TR 1 19424 Z424-

```

TAPE #3

CD39 TO WR GYPSY

```

□ 23559 SEL 2
□ 23564 TRS 0 03 23574 L5G4-
□ 23569 TR 1 23594 L594-
□ 23574 LDA # 02 22744 K7M4-
□ 23579 ULA * 02 19609 Z6-9
□ 23584 LDA # 02 23584 L5Q4
□ 23589 TR 1 19589 Z589-

```

TAPE #4

CE40 TO RD GYPSY

```

□ 23594 SET B 0200
□ 23599 LOD 8 3879
□ 23604 CMP 4 37199 G199
□ 23609 TRE L 23659 L659-
□ 23614 LOD 8 3879
□ 23619 UNL 7 24534 M534
□ 23624 LOD 8 37199 G199
□ 23629 UNL 7 24738 M738
□ 23634 SET B 0004
□ 23639 LOD 8 1674
□ 23644 UNL 7 24330 M330
□ 23649 LDA # 23649 L649
□ 23654 TR 1 24169 M169-

```

CHECK FOR ERROR TAPE #2

NO ERROR

DK57 TO T/O LOOP

```

□ 23659 SET B 0200
□ 23664 LOD 8 3879
□ 23669 CMP 4 39199 I199
□ 23674 TRE L 23724 L724-
□ 23679 LOD 8 3879
□ 23684 UNL 7 24534 M534
□ 23689 LOD 8 39199 I199
□ 23694 UNL 7 24738 M738
□ 23699 SET B 0004
□ 23704 LOD 8 1684
□ 23709 UNL 7 24330 M330
□ 23714 LDA # 23714 L714
□ 23719 TR 1 24169 M169-

```

CHECK FOR ERROR TAPE #4

DG56 NO ERROR

DK57 TO T/O LOOP

-DH57

ROUTINE CYCLE 2

LONG T/O SWITCH

SET UP LONG T/O

WORK AREA AND CONSTANTS

3	24313	24534	M534	
3	24317	24738	M738	
2	013	24330		TS- -009
5	003	24333		WR
5	201	24534		
5	003	24537		RD
5	201	24738		
2	001	24739		□
2	003	24742		18

ROUTINE #010

24749	SET	8	0004	
24754	LOD	8	3222	
24759	UNL	7	25704	N704
24764	UNL	7	25769	N769
24769	UNL	7	25834	N834
24774	UNL	7	25899	N899
24779	LOD	8	3234	
24784	UNL	7	25714	N714
24789	UNL	7	25734	N734
24794	LOD	8	3242	
24799	UNL	7	25709	N709
24804	UNL	7	25724	N724
24809	UNL	7	25774	N774
24814	UNL	7	25789	N789
24819	UNL	7	25839	N839
24824	UNL	7	25854	N854
24829	UNL	7	25904	N904
24834	UNL	7	25919	N919
24839	LOD	8	3238	
24844	UNL	7	25779	N779
24849	UNL	7	25799	N799
24854	LOD	8	3226	
24859	UNL	7	25844	N844
24864	UNL	7	25864	N864
24869	LOD	8	3230	
24874	UNL	7	25909	N909
24879	UNL	7	25929	N929
24884	LOD	8	26553	O553
24889	UNL	7	25729	N729
24894	UNL	7	25794	N794
24899	UNL	7	25859	N859
24904	UNL	7	25924	N924
24909	LOD	8	26557	O557
24914	UNL	7	25739	N739
24919	UNL	7	25804	N804
24924	UNL	7	25869	N869
24929	UNL	7	25934	N934
24934	SET	8	0001	
24939	LOD	8	3218	
24944	UNL	7	3217	
24949	LOD	8	3212	
24954	UNL	7	3730	
24959	LOD	8	3213	
24964	UNL	7	3685	

WR BSP RD CMP 4CH-
ARITHMETICS

F199

G199

H199

1199

RESET PASS CTR

NEXT PAGE

□ 24969 SET B 0004 □
□ 24974 LOD 8 1669 □
□ 24979 UNL 7 25144 N144 □
□ 24984 UNL 7 25219 N219 □
□ 24989 UNL 7 25449 N449 □
□ 24994 UNL 7 25499 N499 □
□ 24999 UNL 7 25549 N549 □

TAPE #1

□ 25004 SET B 0004 □
□ 25009 LOD 8 1674 □
□ 25014 UNL 7 25154 N154 □
□ 25019 UNL 7 25254 N254 □
□ 25024 UNL 7 25459 N459 □
□ 25029 UNL 7 25509 N509 □
□ 25034 UNL 7 25584 N584 □

TAPE #2

□ 25039 SET B 0004 □
□ 25044 LOD 8 1679 □
□ 25049 UNL 7 25164 N164 □
□ 25054 UNL 7 25289 N289 □
□ 25059 UNL 7 25469 N469 □
□ 25064 UNL 7 25519 N519 □
□ 25069 UNL 7 25619 N619 □

TAPE #3

□ 25074 SET B 0004 □
□ 25079 LOD 8 1684 □
□ 25084 UNL 7 25174 N174 □
□ 25089 UNL 7 25324 N324 □
□ 25094 UNL 7 25479 N479 □
□ 25099 UNL 7 25529 N529 □
□ 25104 UNL 7 25654 N654 □

TAPE #4

□ 25109 CHR 3 13 0000 06 0 □
□ 25114 UNL 7 14 26455 ODN5 □
□ 25119 UNL 7 12 3880 3H80 □
□ 25124 EEM 3 14 0000 06-0 □
□ 25129 SPC 0 0000 □
□ 25134 LIM 07 0000 0 60 □
□ 25139 TRA 1 25144 N144 □

RESET LONG T/O SWITCH

TURN OFF ANY TGR

□ 25144 SEL 2 □
□ 25149 WR R 3680 □

TAPE #1

□ 25154 SEL 2 □
□ 25159 WR R 3680 □

TAPE #2

□ 25164 SEL 2 □
□ 25169 WR R 3680 □

TAPE #3

□ 25174 SEL 2 □
□ 25179 WR R 3680 □
□ 25184 ADM 6 15 25210 NBA0 □

TAPE #4

NEXT PAGE

FROM PREVIOUS PAGE

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8TS08

□ 25189 SET B 0010 □
□ 25194 LOD 8 26994 0994 □
□ 25199 ADD G 27005 P005 □
□ 25204 SUB P 27016 P016 □
□ 25209 ST F 27036 P036 □
□ 25214 NOP A 25549 N549 □

ARITHS WHILE WR/RD

SWITCH

□ 25219 SEL 2 □
□ 25224 TRS 0 03 25234 N2C4 □
□ 25229 TR 1 25254 N254 □
□ 25234 LDA # 02 24974 M9P4 □
□ 25239 ULA * 02 19449 Z4M9 □
□ 25244 LDA # 02 25244 N2M4 □
□ 25249 TR 1 19424 Z424 □

TAPE #1

TO WR GYPSY

□ 25254 SEL 2 □

TAPE #2

□ 25259 TRS 0 03 25269 N2F9 □
□ 25264 TR 1 25289 N289 □
□ 25269 LDA # 02 25009 N0-9 □
□ 25274 ULA * 02 19449 Z4M9 □
□ 25279 LDA # 02 25279 N2P9 □
□ 25284 TR 1 19424 Z424 □

TAPE #2

TO WR GYPSY

□ 25289 SEL 2 □
□ 25294 TRS 0 03 25304 N3E4 □
□ 25299 TR 1 25324 N324 □
□ 25304 LDA # 02 25044 N0M4 □
□ 25309 ULA * 02 19449 Z4M9 □
□ 25314 LDA # 02 25314 N3J4 □
□ 25319 TR 1 19424 Z424 □

TAPE #3

TO WR GYPSY

□ 25324 SEL 2 □
□ 25329 TRS 0 03 25339 N3C9 □
□ 25334 TR 1 25359 N359 □
□ 25339 LDA # 02 25079 N0P9 □
□ 25344 ULA * 02 19449 Z4M9 □
□ 25349 LDA # 02 25349 N3M9 □
□ 25354 TR 1 19424 Z424 □

TAPE #4

TO WR GYPSY

□ 25359 ADM 6 15 25425 NDB5 □
□ 25364 ADM 6 15 25440 NDD0 □
□ 25369 SET B 0010 □
□ 25374 LOD 8 27036 P036 □
□ 25379 CMP 4 27026 P026 □
□ 25384 TRE L 25444 N444 □

CHECK FOR ARITH ERROR

NO ARITH ERROR

NEXT PAGE

SWITCH

TAPE #4

RD FIELD

TAPE #1

TAPE #2

TAPE #3

TAPE #4

TO RD GYPSY

TO RD GYPSY

TAPE #3

TO RD GYPSY

TAPE #4

TO RD GYPSY

TO CHK ARITHS WHILE RD

CHECK FOR ERROR TAPE #1

NO ERROR
ERROR

TO T/O LOOP

CHECK FOR ERROR TAPE #2

NO ERROR
ERROR

CHECK FOR ERROR TAPE #3

NO ERROR
ERROR

TO T/O LOOP

-----DP59

```

0000000000000000000000000000000000
26194 SET 8 0001
26199 LOD 8 3685
26204 UNL 7 3213
26209 UNL 7 12 3685 3F85
26214 ADM 6 10 25704 NP-4
26219 ADM 6 10 25709 NP-9
26224 ADM 6 10 25714 NPJ4
26229 ADM 6 10 25724 NPK4
26234 ADM 6 10 25729 NPK9
26239 ADM 6 10 25734 NPL4
26244 ADM 6 10 25739 NPL9
26249 ADM 6 10 25769 NPO9
26254 ADM 6 10 25774 NPP4
26259 ADM 6 10 25779 NPP9
26264 ADM 6 10 25789 NPQ9
26269 ADM 6 10 25794 NPR4
26274 ADM 6 10 25799 NPR9
26279 ADM 6 10 25804 NQ-4
26284 ADM 6 10 25834 NQL4
26289 ADM 6 10 25839 NQL9
26294 ADM 6 10 25844 NQM4
26299 ADM 6 10 25854 NQN4
26304 ADM 6 10 25859 NQN9
26309 ADM 6 10 25864 NQO4
26314 ADM 6 10 25869 NQO9
26319 ADM 6 10 25899 NQR9
26324 ADM 6 10 25904 NR-4
26329 ADM 6 10 25909 NR-9
26334 ADM 6 10 25919 NRJ9
26339 ADM 6 10 25924 NRK4
26344 ADM 6 10 25929 NRK9
26349 ADM 6 10 25934 NRL4
26354 TR 1 25109 N109-----DP59
0000000000000000000000000000000000

```

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES -0045

```

0000000000000000000000000000000000
26359 TRS 0 11 26364 OLF4-----
26364 SET B 0001.....
26369 LOD 8 3212
26374 UNL 7 3730
26379 LOD 8 3213
26384 UNL 7 3685
26389 RCV U 36004 F004
26394 BLM $ 0800
26399 TRA I 02 24749 M7M9-----DN58
26404 TR 1 27064 P064-----EC66
0000000000000000000000000000000000

```

RESET FIELDS AND EXIT

TO ROUTINE #011

```

0000000000000000000000000000000000
26409 ADD G 26983 0983
26414 ULA * 26499 0499
26419 TRA I 06 26504 OV-4-----EB65
26424 UNL 7 12 26571 OE71
26429 TRA I 01 26499 0429-----
26434 SET B 0001
26439 LOD 8 3217
26444 UNL 7 26561 0561
26449 SEL 2 0500
26454 WR R 26558 0558
26459 TR 1 26479 0479-----
26464 WR R 26572 0572
26469 WR R 26776 0776
26474 SGN T 15 26455 ODE5
26479 TRS 0 12 26484 OD84
26484 TRA I 03 26494 0414
26489 TR 1 26499 0499-----
26494 HLT J 2010.....
26499 TR 1 0000.....
0000000000000000000000000000000000

```

T/O LOOP

LONG T/O SWITCH


```

#####
26504 LDA # 25729 N729
26509 ADD G 3215
26514 ULA * 26519 0519
26519 UNL 7 12 0000 0600
26524 LDA # 25739 N739
26529 ADD G 3215
26534 ULA * 26539 0539
26539 UNL 7 12 0000 0600
26544 ADM 6 15 26455 ODE5
26549 TR 1 26424 0424 EA64
#####
    
```

SET UP LONG T/O

WORK AREA AND CONSTANTS

```

3      26553      26774 0774
3      26557      26978 0978
2 013 26570
2 003 26573
5 201 26774
2 003 26777
5 201 26978
2 001 26979
2 001 26980
2 003 26983
2 011 26994
2 011 27005
2 011 27016
2 010 27026
2 010 27036
2 020 27056
2 001 27057

TS- -010-
WR
RD
16
5273416896
361547199H
111111111A
7777777777
TS- -010-ARITH ERROR
    
```

ROUTINE #011

WR-BSP-ORD & CMP 4 CH
INTERRUPT

F199

G199

H199

I199

RESET PASS CTR

RESET WR FIELDS

TAPE #1

```
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□ 27064 SET B 0004 □
□ 27069 LOD 8 3222 □
□ 27074 UNL 7 27794 P794 □
□ 27079 UNL 7 27859 P859 □
□ 27084 UNL 7 27924 P924 □
□ 27089 UNL 7 27989 P989 □
□ 27094 LOD 8 3234 □
□ 27099 UNL 7 27804 P804 □
□ 27104 UNL 7 27824 P824 □
□ 27109 LOD 8 3242 □
□ 27114 UNL 7 27799 P799 □
□ 27119 UNL 7 27814 P814 □
□ 27124 UNL 7 27864 P864 □
□ 27129 UNL 7 27879 P879 □
□ 27134 UNL 7 27929 P929 □
□ 27139 UNL 7 27944 P944 □
□ 27144 UNL 7 27994 P994 □
□ 27149 UNL 7 28009 Q009 □
□ 27154 LOD 8 3238 □
□ 27159 UNL 7 27869 P869 □
□ 27164 UNL 7 27889 P889 □
□ 27169 LOD 8 3226 □
□ 27174 UNL 7 27934 P934 □
□ 27179 UNL 7 27954 P954 □
□ 27184 LOD 8 3230 □
□ 27189 UNL 7 27999 P999 □
□ 27194 UNL 7 28019 Q019 □
□ 27199 LOD 8 29268 R268 □
□ 27204 UNL 7 27819 P819 □
□ 27209 UNL 7 27884 P884 □
□ 27214 UNL 7 27949 P949 □
□ 27219 UNL 7 28014 Q014 □
□ 27224 LOD 8 29272 R272 □
□ 27229 UNL 7 27829 P829 □
□ 27234 UNL 7 27894 P894 □
□ 27239 UNL 7 27959 P959 □
□ 27244 UNL 7 28024 Q024 □
□ 27249 SET B 0001 □
□ 27254 LOD 8 3218 □
□ 27259 UNL 7 3217 □
□ 27264 LOD 8 3212 □
□ 27269 UNL 7 3730 □
□ 27274 LOD 8 3213 □
□ 27279 UNL 7 3685 □
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
```

```
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□ 27284 SET B 0004 □
□ 27289 LOD 8 1669 □
□ 27294 UNL 7 28649 Q649 □
□ 27299 UNL 7 28674 Q674 □
□ 27304 UNL 7 28714 Q714 □
□ 27309 UNL 7 28739 Q739 □
□ 27314 UNL 7 28764 Q764 □
□ 27319 LDA # 28764 Q764 □
□ 27324 ULA * 28669 Q669 □
□ 27329 ULA * 28709 Q709 □
□ 27334 ULA * 28734 Q734 □
□ 27339 ULA * 28759 Q759 □
□ 27344 ULA * 28799 Q799 □
□ 27349 UNL 7 13 28669 QFW9 □
□ 27354 UNL 7 13 28709 QG 9 □
□ 27359 UNL 7 13 28734 QGT4 □
□ 27364 UNL 7 13 28759 QGV9 □
□ 27369 UNL 7 13 28799 QGZ9 □
□□□□□□□□□□□□□□□□□□□□□□□□□□□□
```

NEXT PAGE

TAPE #2

TAPE #3

TAPE #4

RESET LONG T/O SWITCH

NEXT PAGE

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```

I
#####V#####
 27679 TIP , 14 28649 QFM9-#-----EK71 TO WR TAPE #1
#####I#####
I
#####V#####
 27684 TIP , 14 28804 QH-4-#-----EM72 TO WR TAPE #2
#####I#####
I
#####V#####
 27689 TIP , 14 28959 QIN9-#-----EP72 TO WR TAPE #3
#####I#####
I
#####V#####
 27694 TIP , 14 29114 RAJ4-#-----ER73 TO WR TAPE #4
#####I#####
I
#####V#####
 27699 SET B      19999 Z999  □ AUTO TO CHK TAPE #1 WR
 27704 SET B      19999 Z999  □ AUTO TO CHK TAPE #2 WR
 27709 SET B      19999 Z999  □ AUTO TO CHK TAPE #3 WR
 27714 SET B      19999 Z999  □ AUTO TO CHK TAPE #4 WR
 27719 SET B      19999 Z999  □
#####I#####
I
#####V#####
 27724 TIP , 14 28714 QGJ4-#-----EL71 TO BSP TAPE #1
#####I#####
I
#####V#####
 27729 TIP , 14 28869 QHO9-#-----EN72 TO BSP TAPE #2
#####I#####
I
#####V#####
 27734 TIP , 14 29024 R&K4-#-----EQ73 TO BSP TAPE #3
#####I#####
I
#####V#####
 27739 TIP , 14 29179 RAP9-#-----ES73 TO BSP TAPE #4
#####I#####
I
#####V#####
 27744 SET B      19999 Z999  □ AUTO TO RD TAPE #1
 27749 SET B      19999 Z999  □ AUTO TO RD TAPE #2
 27754 SET B      19999 Z999  □ AUTO TO RD TAPE #3
 27759 SET B      19999 Z999  □ AUTO TO RD TAPE #4
 27764 SET B      19999 Z999  □
 27769 SET B      19999 Z999  □ AUTO TO CHK TAPE #1 RD
 27774 SET B      19999 Z999  □ AUTO TO CHK TAPE #2 RD
 27779 SET B      19999 Z999  □ AUTO TO CHK TAPE #3 RD
 27784 SET B      19999 Z999  □ AUTO TO CHK TAPE #4 RD
 27789 SET B      19999 Z999  □
#####I#####
I
#####V#####
 27794 SET B      0200      □
 27799 LOD 8      3879      □
 27804 CMP 4      36199 F199  □
 27809 TRE L      27859 P859-#-----EF69 NO ERROR
 27814 LOD 8      3879      □
 27819 UNL 7      29489 R489  □
 27824 LOD 8      36199 F199  □
 27829 UNL 7      29693 R693  □
 27834 SET B      0004      □
 27839 LOD 8      1669      □
 27844 UNL 7      29285 R285  □
 27849 LDA #      27849 P849  □
 27854 TR 1      28504 Q504-#-----EJ71 TO T/O LOOP
#####I#####

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1
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□ 28124 LOD 8 3730 □
□ 28129 UNL 7 3212 □
□ 28134 UNL 7 12 3730 3G30 □
□ 28139 ADM 6 09 27794 PPZ4 □
□ 28144 ADM 6 09 27799 PPZ9 □
□ 28149 ADM 6 09 27804 PQ 4 □
□ 28154 ADM 6 09 27814 PQ/4 □
□ 28159 ADM 6 09 27819 PQ/9 □
□ 28164 ADM 6 09 27824 PQS4 □
□ 28169 ADM 6 09 27829 PQS9 □
□ 28174 ADM 6 09 27859 PQV9 □
□ 28179 ADM 6 09 27864 PQW4 □
□ 28184 ADM 6 09 27869 PQW9 □
□ 28189 ADM 6 09 27879 PQX9 □
□ 28194 ADM 6 09 27884 PQY4 □
□ 28199 ADM 6 09 27889 PQY9 □
□ 28204 ADM 6 09 27894 PQZ4 □
□ 28209 ADM 6 09 27924 PRS4 □
□ 28214 ADM 6 09 27929 PRS9 □
□ 28219 ADM 6 09 27934 PRT4 □
□ 28224 ADM 6 09 27944 PRU4 □
□ 28229 ADM 6 09 27949 PRU9 □
□ 28234 ADM 6 09 27954 PRV4 □
□ 28239 ADM 6 09 27959 PRV9 □
□ 28244 ADM 6 09 27989 PRY9 □
□ 28249 ADM 6 09 27994 PRZ4 □
□ 28254 ADM 6 09 27999 PRZ9 □
□ 28259 ADM 6 09 28009 Q- 9 □
□ 28264 ADM 6 09 28014 Q-/4 □
□ 28269 ADM 6 09 28019 Q-/9 □
□ 28274 ADM 6 09 28024 Q-S4 □
□ 28279 TR 1 27644 P644 □-----ED67
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES-0150

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□ 28284 SET B 0001 □
□ 28289 LOD 8 3685 □
□ 28294 UNL 7 3213 □
□ 28299 UNL 7 12 3685 3F85 □
□ 28304 ADM 6 10 27794 PPR4 □
□ 28309 ADM 6 10 27799 PPR9 □
□ 28314 ADM 6 10 27804 PQ-4 □
□ 28319 ADM 6 10 27814 PQJ4 □
□ 28324 ADM 6 10 27819 PQJ9 □
□ 28329 ADM 6 10 27824 PQK4 □
□ 28334 ADM 6 10 27829 PQK9 □
□ 28339 ADM 6 10 27859 PQN9 □
□ 28344 ADM 6 10 27864 PQO4 □
□ 28349 ADM 6 10 27869 PQO9 □
□ 28354 ADM 6 10 27879 PQP9 □
□ 28359 ADM 6 10 27884 PQQ4 □
□ 28364 ADM 6 10 27889 PQQ9 □
□ 28369 ADM 6 10 27894 PQR4 □
□ 28374 ADM 6 10 27924 PRK4 □
□ 28379 ADM 6 10 27929 PRK9 □
□ 28384 ADM 6 10 27934 PRL4 □
□ 28389 ADM 6 10 27944 PRM4 □
□ 28394 ADM 6 10 27949 PRM9 □
□ 28399 ADM 6 10 27954 PRN4 □
□ 28404 ADM 6 10 27959 PRN9 □
□ 28409 ADM 6 10 27989 PRQ9 □
□ 28414 ADM 6 10 27994 PRR4 □
□ 28419 ADM 6 10 27999 PRR9 □
□ 28424 ADM 6 10 28009 Q--9 □
□ 28429 ADM 6 10 28014 Q-J4 □
□ 28434 ADM 6 10 28019 Q-J9 □
□ 28439 ADM 6 10 28024 Q-K4 □
□ 28444 TR 1 27644 P644 □-----ED67
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES-0045

RESET FIELDS & EXIT

TO ROUTINE #012

T/O LOOP

AT T/O

LONG T/O SWITCH

CHANNEL #1 INTERRUPT PROG

TO WR GYPSY

```

      1
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
□ 28714 SEL 2           0004          □
□ 28719 BSP 3           0004          □
□ 28724 LDA # 02 28724 Q7K4          □
□ 28729 TRA I    20254 -254-6-----CN43
□ 28734 LIP ,   15    2&&0 2&&0     □
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

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□□□□□□□□□□V□□□□□□□□□□□□□□
□ 28739 SEL 2 □
□ 28744 RD Y 36000 F000 □
□ 28749 LDA # 02 28749 Q7M9 □
□ 28754 TRA I 20254 -254-□-----CN43
□ 28759 LIP , 15 2&0 2&0 □
□□□□□□□□□□I□□□□□□□□□□□□□□

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□□□□□□□□□□□□↓□□□□□□□□□□□□□□
□ 28764 SEL 2 □
□ 28769 TRS 0 03 28779 Q7G9-□-▼
□ 28774 TR 1 28799 Q799-□-↑
□ 28779 LDA # 02 27289 P2Q9.●.●.I
□ 28784 ULA # 02 19609 Z6-9 □ I
□ 28789 LDA # 02 28789 Q7Q9 □ I
□ 28794 TR 1 19589 Z589-□-↑-----CE40
□ 28799 LIP , 15 26&O 26&O.●.●.I
□□□□□□□□□□□□I□□□□□□□□□□□□□□

```

TO RD GYPSY

CHANNEL #2 INTERRUPT PROG

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□ □ □ □ □ □ □ □ □ □ □ ↑ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
□ 28804 SEL 2      V    □
□ 28809 WR   R     □
□ 28814 LDA # 02  3680 □
□ 28819 TRA I    20254 -254- □ -----CN43
□ 28824 LIP , 15  2&&O 2&&O □
□ □ □ □ □ □ □ □ □ □ □ I □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

```

```

□ 28829 SEL 2
□ 28834 TRS 0 03 28844 Q8D4-
□ 28839 TR 1 28864 Q864-
□ 28844 LDA # 02 27379 P3P9.
□ 28849 ULA # 02 19449 Z4M9.
□ 28854 LDA # 02 28854 Q8N4.
□ 28859 TR 1 19424 Z424-
□ 28864 LIP , 15 2&E0 2&E0.

```

[illegible]

```

      28894 SEL 2          38000 H000
      28899 RD Y         28904 Q9-4
      28904 LDA # 02     20254 -254-----CN43
      28909 TRA I       26&0 26&0
      28914 LIP , 15

```

```

      28919 SEL 2
      28924 TRS 0 03 28934 Q9C4
      28929 TR 1 28954 Q954
      28934 LDA # 02 27379 P3P9
      28939 ULA * 02 19609 Z6-9
      28944 LDA # 02 28944 Q9M4
      28949 TR 1 19589 Z589
      28954 LIP , 15 2860 2860

```

CHANNEL #3 INTERRUPT PROG

```

000000000000V00000000000000
0028959 SEL 2      000000000000
0028964 WR R      3680      0000
0028969 LDA # 02 28969 Q909 0000
0028974 TRA I      20254 -254-----CN43
0028979 LIP , 15 2880 2880 0000
0000000000000000000000000000

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NEXT PAGE

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```
□ 28984 SEL 2
□ 28989 TRS 0 03 28999 Q9I9-
□ 28994 TR 1 29019 R019-
□ 28999 LDA # 02 27469 P409-
□ 29004 ULA * 02 19449 Z4M9
□ 29009 LDA # 02 29009 R0-9
□ 29014 TR 1 19424 Z424-
□ 29019 LIP , 15 2&80 2&80-
CD39
```

```
□ 29024 SEL 2
□ 29029 BSP 3 0004
□ 29034 LDA # 02 29034 R0L4
□ 29039 TRA I 20254 -254-
□ 29044 LIP , 15 2&80 2&80
CN43
```

```
□ 29049 SEL 2
□ 29054 RD Y 37000 G000
□ 29059 LDA # 02 29059 R0N9
□ 29064 TRA I 20254 -254-
□ 29069 LIP , 15 2&80 2&80
CN43
```

```
□ 29074 SEL 2
□ 29079 TRS 0 03 29089 R0H9-
□ 29084 TR 1 29109 R109-
□ 29089 LDA # 02 27469 P409-
□ 29094 ULA * 02 19609 Z6-9
□ 29099 LDA # 02 29099 R0R9
□ 29104 TR 1 19589 Z589-
□ 29109 LIP , 15 2&80 2&80-
CE40
```

CHANNEL #4 INTERRUPT PROG

```
□ 29114 SEL 2
□ 29119 WR R 3680
□ 29124 LDA # 02 29124 R1K4
□ 29129 TRA I 20254 -254-
□ 29134 LIP , 15 2&80 2&80
CN43
```

```
□ 29139 SEL 2
□ 29144 TRS 0 03 29154 R1E4-
□ 29149 TR 1 29174 R174-
□ 29154 LDA # 02 27559 P5N9-
□ 29159 ULA * 02 19449 Z4M9
□ 29164 LDA # 02 29164 R104
□ 29169 TR 1 19424 Z424-
□ 29174 LIP , 15 2&80 2&80-
CD39
```

```
□ 29179 SEL 2
□ 29184 BSP 3 0004
□ 29189 LDA # 02 29189 R1Q9
□ 29194 TRA I 20254 -254-
□ 29199 LIP , 15 2&80 2&80
CN43
```

```
□ 29204 SEL 2
□ 29209 RD Y 39000 I000
□ 29214 LDA # 02 29214 R2J4
□ 29219 TRA I 20254 -254-
□ 29224 LIP , 15 2&80 2&80
CN43
```

NEXT PAGE

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000000000000I↓000000000000000000
0 29229 SEL 2                                H
0 29234 TRS 0 03 29244 R2D4-H-▼
0 29239 TR 1          29264 R264-H-†
0 29244 LDA * 02      27559 P5N9.W●.I
0 29249 ULA * 02      19609 Z6-9   I
0 29254 LDA * 02      29254 R2N4    I
0 29259 TR 1          19589 Z589-H-†---CE40
0 29264 LIP , 15     2880 2880.W●.I
000000000000I000000000000000000

```

WORK AREA AND CONSTANTS

3		29253	29489	R489	
3		29272	29693	R693	
2	013	29235			TS- -011-
2	003	29233			WR
5	201	29489			
2	003	29492			RD
5	201	29693			
2	001	29694			□
2	001	29695			
2	003	29698			18

ROUTINE #012

29704	SET	8	00004	
29709	LOD	8	32222	
29714	UNL	7	30604	£6604
29719	UNL	7	30669	£6669
29724	UNL	7	30734	£7734
29729	UNL	7	30799	£7799
29734	LOD	8	32234	
29739	UNL	7	30514	£6114
29744	UNL	7	30634	£6634
29749	LOD	8	32242	
29754	UNL	7	30609	£6609
29759	UNL	7	30624	£6624
29764	UNL	7	30674	£6674
29769	UNL	7	30689	£6689
29774	UNL	7	30739	£7739
29779	UNL	7	30754	£7754
29784	UNL	7	30804	£8804
29789	UNL	7	30819	£8819
29794	LOD	8	32238	
29799	UNL	7	30679	£6679
29804	UNL	7	30699	£6699
29809	LOD	8	32226	
29814	UNL	7	30744	£7744
29819	UNL	7	30764	£7764
29824	LOD	8	32230	
29829	UNL	7	30809	£8809
29834	UNL	7	30829	£8829
29839	LOD	8	32073	B073
29844	UNL	7	30629	£6629
29849	UNL	7	30694	£6694
29854	UNL	7	30759	£7759
29859	UNL	7	30824	£8824
29864	LOD	8	32077	B077
29869	UNL	7	30639	£6639
29874	UNL	7	30704	£7704
29879	UNL	7	30769	£7769
29884	UNL	7	30834	£8834
29889	SET	8	00001	
29894	LOD	8	32118	
29899	UNL	7	32117	
29904	LOD	8	32112	
29909	UNL	7	3730	
29914	LOD	8	32113	
29919	UNL	7	3685	

WR BSP RD CMP 4CH-
INTERRUPT -ARITHS

RESET WR FIELDS

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0000000000000000↓0000000000000000
0 299224 SET 8      0004      0000
0 299229 LOD 8      1669      0000
0 299334 UNL 7      31519    A519
0 299339 UNL 7      31454    A454
0 299444 UNL 7      31479    A479
0 299449 UNL 7      31544    A544
0 299544 UNL 7      31569    A569
0 299559 LDA #      31569    A569
0 299644 ULA *      31474    A474
0 299694 ULA *      31514    A514
0 299744 ULA *      31564    A564
0 299794 ULA *      31604    A604
0 299844 ULA *      31539    A539
0 299889 UNL 7 13    31474    ADX4
0 299944 UNL 7 13    31514    AE74
0 299994 UNL 7 13    31564    AEW4
0 300044 UNL 7 13    31604    AF 4
0 300094 UNL 7 13    31539    AET9
0000000000000000I0000000000000000

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TAPE #1

[illegible]

TAPE #2

Address	Op	OpC	OpD	OpI	OpJ	OpK	OpL	OpM	OpN	OpO	OpP	OpQ	OpR	OpS	OpT	OpU	OpV	OpW	OpX	OpY	OpZ	OpAA	OpAB	OpAC	OpAD	OpAE	OpAF	OpAG	OpAH	OpAI	OpAJ	OpAK	OpAL	OpAM	OpAN	OpAO	OpAP	OpAQ	OpAR	OpAS	OpAT	OpAU	OpAV	OpAW	OpAX	OpAY	OpAZ	OpBA	OpBB	OpBC	OpBD	OpBE	OpBF	OpBG	OpBH	OpBI	OpBJ	OpBK	OpBL	OpBM	OpBN	OpBO	OpBP	OpBQ	OpBR	OpBS	OpBT	OpBU	OpBV	OpBW	OpBX	OpBY	OpBZ	OpCA	OpCB	OpCC	OpCD	OpCE	OpCF	OpCG	OpCH	OpCI	OpCJ	OpCK	OpCL	OpCM	OpCN	OpCO	OpCP	OpCQ	OpCR	OpCS	OpCT	OpCU	OpCV	OpCW	OpCX	OpCY	OpCZ	OpDA	OpDB	OpDC	OpDD	OpDE	OpDF	OpDG	OpDH	OpDI	OpDJ	OpDK	OpDL	OpDM	OpDN	OpDO	OpDP	OpDQ	OpDR	OpDS	OpDT	OpDU	OpDV	OpDW	OpDX	OpDY	OpDZ	OpEA	OpEB	OpEC	OpED	OpEE	OpEF	OpEG	OpEH	OpEI	OpEJ	OpEK	OpEL	OpEM	OpEN	OpEO	OpEP	OpEQ	OpER	OpES	OpET	OpEU	OpEV	OpEW	OpEX	OpEY	OpEZ	OpFA	OpFB	OpFC	OpFD	OpFE	OpFF	OpFG	OpFH	OpFI	OpFJ	OpFK	OpFL	OpFM	OpFN	OpFO	OpFP	OpFQ	OpFR	OpFS	OpFT	OpFU	OpFV	OpFW	OpFX	OpFY	OpFZ	OpGA	OpGB	OpGC	OpGD	OpGE	OpGF	OpGG	OpGH	OpGI	OpGJ	OpGK	OpGL	OpGM	OpGN	OpGO	OpGP	OpGQ	OpGR	OpGS	OpGT	OpGU	OpGV	OpGW	OpGX	OpGY	OpGZ	OpHA	OpHB	OpHC	OpHD	OpHE	OpHF	OpHG	OpHH	OpHI	OpHJ	OpHK	OpHL	OpHM	OpHN	OpHO	OpHP	OpHQ	OpHR	OpHS	OpHT	OpHU	OpHV	OpHW	OpHX	OpHY	OpHZ	OpIA	OpIB	OpIC	OpID	OpIE	OpIF	OpIG	OpIH	OpII	OpIJ	OpIK	OpIL	OpIM	OpIN	OpIO	OpIP	OpIQ	OpIR	OpIS	OpIT	OpIU	OpIV	OpIW	OpIX	OpIY	OpIZ	OpJA	OpJB	OpJC	OpJD	OpJE	OpJF	OpJG	OpJH	OpJI	OpJJ	OpJK	OpJL	OpJM	OpJN	OpJO	OpJP	OpJQ	OpJR	OpJS	OpJT	OpJU	OpJV	OpJW	OpJX	OpJY	OpJZ	OpKA	OpKB	OpKC	OpKD	OpKE	OpKF	OpKG	OpKH	OpKI	OpKJ	OpKK	OpKL	OpKM	OpKN	OpKO	OpKP	OpKQ	OpKR	OpKS	OpKT	OpKU	OpKV	OpKW	OpKX	OpKY	OpKZ	OpLA	OpLB	OpLC	OpLD	OpLE	OpLF	OpLG	OpLH	OpLI	OpLJ	OpLK	OpLL	OpLM	OpLN	OpLO	OpLP	OpLQ	OpLR	OpLS	OpLT	OpLU	OpLV	OpLW	OpLX	OpLY	OpLZ	OpMA	OpMB	OpMC	OpMD	OpME	OpMF	OpMG	OpMH	OpMI	OpMJ	OpMK	OpML	OpMM	OpMN	OpMO	OpMP	OpMQ	OpMR	OpMS	OpMT	OpMU	OpMV	OpMW	OpMX	OpMY	OpMZ	OpNA	OpNB	OpNC	OpND	OpNE	OpNF	OpNG	OpNH	OpNI	OpNJ	OpNK	OpNL	OpNM	OpNN	OpNO	OpNP	OpNQ	OpNR	OpNS	OpNT	OpNU	OpNV	OpNW	OpNX	OpNY	OpNZ	OpOA	OpOB	OpOC	OpOD	OpOE	OpOF	OpOG	OpOH	OpOI	OpOJ	OpOK	OpOL	OpOM	OpON	OpOO	OpOP	OpOQ	OpOR	OpOS	OpOT	OpOU	OpOV	OpOW	OpOX	OpOY	OpOZ	OpPA	OpPB	OpPC	OpPD	OpPE	OpPF	OpPG	OpPH	OpPI	OpPJ	OpPK	OpPL	OpPM	OpPN	OpPO	OpPP	OpPQ	OpPR	OpPS	OpPT	OpPU	OpPV	OpPW	OpPX	OpPY	OpPZ	OpQA	OpQB	OpQC	OpQD	OpQE	OpQF	OpQG	OpQH	OpQI	OpQJ	OpQK	OpQL	OpQM	OpQN	OpQO	OpQP	OpQQ	OpQR	OpQS	OpQT	OpQU	OpQV	OpQW	OpQX	OpQY	OpQZ	OpRA	OpRB	OpRC	OpRD	OpRE	OpRF	OpRG	OpRH	OpRI	OpRJ	OpRK	OpRL	OpRM	OpRN	OpRO	OpRP	OpRQ	OpRR	OpRS	OpRT	OpRU	OpRV	OpRW	OpRX	OpRY	OpRZ	OpSA	OpSB	OpSC	OpSD	OpSE	OpSF	OpSG	OpSH	OpSI	OpSJ	OpSK	OpSL	OpSM	OpSN
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TAPE #3

NEXT PAGE

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```

I
□ 30194 SET B      0004      □
□ 30199 LOD 8      1684      □
□ 30204 UNL 7      31984 A984 □
□ 30209 UNL 7      31919 A919 □
□ 30214 UNL 7      31944 A944 □
□ 30219 UNL 7      32009 B009 □
□ 30224 UNL 7      32034 B034 □
□ 30229 LDA #      32034 B034 □
□ 30234 ULA *      31939 A939 □
□ 30239 ULA *      31979 A979 □
□ 30244 ULA *      32029 B029 □
□ 30249 ULA *      32069 B069 □
□ 30254 ULA *      32004 B004 □
□ 30259 UNL 7 13 31939 AIT9 □
□ 30264 UNL 7 13 31979 AIX9 □
□ 30269 UNL 7 13 32029 B&S9 □
□ 30274 UNL 7 13 32069 B&W9 □
□ 30279 UNL 7 13 32004 B& 4 □
I

```

TAPE #4

```

I
□ 30284 CHR 3 13 0000 0& 0 □
□ 30289 UNL 7 14 31355 ACN5 □
□ 30294 UNL 7 12 3880 3H80 □
□ 30299 EEM 3 14 0000 0&-0 □
□ 30304 SPC ,      0000      □
□ 30309 EIM , 06 0000 0 -0 □
□ 30314 TRA I      30319 &319-
I

```

RESET LONG T/O SWITCH

TURN OFF ANY TGR

```

I
□ 30319 TIP , 14 31454 ADN4-
I

```

TO WR TAPE #1

```

I
□ 30324 TIP , 14 31609 AF-9-
I

```

TO WR TAPE #2

```

I
□ 30329 TIP , 14 31764 AGO4-
I

```

TO WR TAPE #3

```

I
□ 30334 TIP , 14 31919 AIJ9-
I

```

TO WR TAPE #4

```

I
□ 30339 SET B      0010      □
□ 30344 LOD 8      32510 B510 □
□ 30349 ADD G      32521 B521 □
□ 30354 SUB P      32532 B532 □
□ 30359 ST F       32552 B552 □
□ 30364 SET B      19999 Z999 □
□ 30369 SET B      19999 Z999 □
□ 30374 SET B      19999 Z999 □
□ 30379 SET B      19999 Z999 □
I

```

ARITHMETICS WHILE WR

```

AUTO INT TO CHECK TAPE #1 WR
AUTO INT TO CHECK TAPE #2 WR
AUTO INT TO CHECK TAPE #3 WR
AUTO INT TO CHECK TAPE #4 WR

```

```

I
□ 30384 TIP , 14 31519 AEJ9-
I

```

TO BSP TAPE #1

```

I
□ 30389 TIP , 14 31674 AFP4-
I

```

TO BSP TAPE #2

```

I
□ 30394 TIP , 14 31829 AHK9-
I

```

TO BSP TAPE #3

```

I
□ 30399 TIP , 14 31984 AIQ4-
I

```

TO BSP TAPE #4

NEXT PAGE

FROM PREVIOUS PAGE

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8TS08

```

□□□□□□□□□□V□□□□□□□□□□□□□□
□ 30404 SET B      0010 □
□ 30409 LOD 8      32552 B552 □
□ 30414 CMP 4      32542 B542 □
□ 30419 TRE L      30469 &469 ---I
□□□□□□□□□□I□□□□□□□□□□□□□□

```

CHECK FOR ARITH ERROR WR

NO ERROR

```

□□□□□□□□□□V□□□□□□□□□□□□□□
□ 30424 TRA I 01 30469 &4W9 ---I
□ 30429 SET B      0001 □
□ 30434 LOD 8      3217 □
□ 30439 UNL 7      32556 B556 □
□ 30444 SEL 2      0500 □
□ 30449 WR R      32553 B553 □
□ 30454 TRA I 03 30464 &4F4 ---I
□ 30459 TR 1      30469 &469 ---I
□ 30464 HLT J      1012.....I
□ 30469 SET B      19999 Z999...I
□ 30474 SET B      19999 Z999...I
□ 30479 SET B      19999 Z999...I
□ 30484 SET B      19999 Z999...I
□□□□□□□□□□I□□□□□□□□□□□□□□

```

ARITH ERROR WR

PASS NO AT T/O

```

AUTO TO RD TAPE #1
AUTO TO RD TAPE #2
AUTO TO RD TAPE #3
AUTO TO RD TAPE #4

```

```

□□□□□□□□□□V□□□□□□□□□□□□□□
□ 30489 SET B      0010 □
□ 30494 LOD 8      32510 B510 □
□ 30499 ADD G      32521 B521 □
□ 30504 SUB P      32532 B532 □
□ 30509 ST F      32552 B552 □
□ 30514 SET B      19999 Z999 □
□ 30519 SET B      19999 Z999 □
□ 30524 SET B      19999 Z999 □
□ 30529 SET B      19999 Z999 □
□□□□□□□□□□I□□□□□□□□□□□□□□

```

ARITHMETICS WHILE RD

```

AUTO INT TO CHECK TAPE #1 RD
AUTO INT TO CHECK TAPE #2 RD
AUTO INT TO CHECK TAPE #3 RD
AUTO INT TO CHECK TAPE #4 RD

```

```

□□□□□□□□□□V□□□□□□□□□□□□□□
□ 30534 SET B      0010 □
□ 30539 LOD 8      32552 B552 □
□ 30544 CMP 4      32542 B542 □
□ 30549 TRE L      30604 &604 ---I
□□□□□□□□□□I□□□□□□□□□□□□□□

```

CHECK FOR ARITH ERROR RD

NO ERROR

```

□□□□□□□□□□V□□□□□□□□□□□□□□
□ 30554 TRA I 01 30604 &6 4 ---I
□ 30559 SET B      0001 □
□ 30564 LOD 8      3217 □
□ 30569 UNL 7      32580 B580 □
□ 30574 SEL 2      0500 □
□ 30579 WR R      32577 B577 □
□ 30584 TRS O 12 30589 &E89 ---I
□ 30589 TRA I 03 30599 &519 ---I
□ 30594 TR 1      30604 &604 ---I
□ 30599 HLT J      2012.....I
□□□□□□□□□□I□□□□□□□□□□□□□□

```

ARITH ERROR RD

PASS NO AT T/O

```

□□□□□□□□□□V□□□□□□□□□□□□□□
□ 30604 SET B      0200.....I
□ 30609 LOD 8      3879 □
□ 30614 CMP 4      36199 F199 □
□ 30619 TRE L      30669 &669 ---EV78
□ 30624 LOD 8      3879 □
□ 30629 UNL 7      32294 B294 □
□ 30634 LOD 8      36199 F199 □
□ 30639 UNL 7      32498 B498 □
□ 30644 SET B      0004 □
□ 30649 LOD 8      1669 □
□ 30654 UNL 7      32090 B090 □
□ 30659 LDA #      30659 &659 □
□ 30664 TR 1      31309 A309 ---EY80
□□□□□□□□□□□□□□□□□□□□□□□□

```

CHECK FOR ERROR TAPE #1

NO ERROR

RD FIELD

```

TAPE NO
AT T/O
TO T/O LOOP

```

NEXT PAGE

[illegible]

SET UP FIELDS FOR PASS #2

CHANGE ADDRESSES -0150

-EU76 PASS #2

0	3	1	0	9	4	S	E	T	8			0	0	0	1					
0	3	1	0	9	9	L	O	D	8						3	6	8	5		
0	3	1	1	0	4	U	N	L	7						3	2	1	3		
0	3	1	1	0	9	U	N	L	7	1	2				3	6	8	5		
0	3	1	1	1	4	A	D	M	6	1	0	3	0	6	0	4	&	0	-	4
0	3	1	1	1	9	A	D	M	6	1	0	3	0	6	0	9	&	0	-	9
0	3	1	1	2	4	A	D	M	6	1	0	3	0	6	1	4	&	O	J	4
0	3	1	1	2	9	A	D	M	6	1	0	3	0	6	2	4	&	O	K	4
0	3	1	1	3	4	A	D	M	6	1	0	3	0	6	2	9	&	O	K	9
0	3	1	1	3	9	A	D	M	6	1	0	3	0	6	3	4	&	O	L	4
0	3	1	1	4	4	A	D	M	6	1	0	3	0	6	3	9	&	O	L	9
0	3	1	1	4	9	A	D	M	6	1	0	3	0	6	6	9	&	O	O	9
0	3	1	1	5	4	A	D	M	6	1	0	3	0	6	7	4	&	O	P	4
0	3	1	1	5	9	A	D	M	6	1	0	3	0	6	7	9	&	O	P	9
0	3	1	1	6	4	A	D	M	6	1	0	3	0	6	8	9	&	O	Q	9
0	3	1	1	6	9	A	D	M	6	1	0	3	0	6	9	4	&	O	R	4
0	3	1	1	7	4	A	D	M	6	1	0	3	0	6	9	9	&	O	R	9
0	3	1	1	7	9	A	D	M	6	1	0	3	0	7	0	4	&	P	-	4
0	3	1	1	8	4	A	D	M	6	1	0	3	0	7	3	4	&	P	L	4
0	3	1	1	8	9	A	D	M	6	1	0	3	0	7	3	9	&	P	L	9
0	3	1	1	9	4	A	D	M	6	1	0	3	0	7	4	4	&	P	M	4
0	3	1	1	9	9	A	D	M	6	1	0	3	0	7	5	4	&	P	N	4
0	3	1	2	0	4	A	D	M	6	1	0	3	0	7	5	9	&	P	N	9
0	3	1	2	0	9	A	D	M	6	1	0	3	0	7	6	4	&	P	O	4
0	3	1	2	1	4	A	D	M	6	1	0	3	0	7	6	9	&	P	O	9
0	3	1	2	1	9	A	D	M	6	1	0	3	0	7	9	9	&	P	R	9
0	3	1	2	2	4	A	D	M	6	1	0	3	0	8	0	4	&	Q	-	4
0	3	1	2	2	9	A	D	M	6	1	0	3	0	8	0	9	&	Q	-	9
0	3	1	2	3	4	A	D	M	6	1	0	3	0	8	1	9	&	Q	J	9
0	3	1	2	3	9	A	D	M	6	1	0	3	0	8	2	4	&	Q	K	4
0	3	1	2	4	4	A	D	M	6	1	0	3	0	8	3	4	&	Q	L	4
0	3	1	2	4	9	T	R		1			3	0	2	8	4	&	2	8	4

SET UP FIELDS FOR PASS #3

CHANGE ADDRESSES -0045

-EU76

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```

□ 31254 TRS 0 11 31259 AKE9- - - - -
□ 31259 SET B 0001.....I
□ 31264 LOD 8 3212
□ 31269 UNL 7 3730
□ 31274 LOD 8 3213
□ 31279 UNL 7 3685
□ 31284 RCV U 36004 F004
□ 31289 BLM $ 0800
□ 31294 LIM , 07 0000 0 &0
□ 31299 TRA I 02 29704 R7-4- - - - - ET74
□ 31304 TR 1 20309 -309- - - - - CR43
□ 31309 ADD G 32603 B603
□ 31314 ULA * 31399 A399
□ 31319 TRA I 06 31404 AU-4- - - - - I
□ 31324 UNL 7 12 32091 B&91
□ 31329 TRA I 01 31399 A3Z9- - - - - I
□ 31334 SET B 0001
□ 31339 LOD 8 3217
□ 31344 UNL 7 32081 B081
□ 31349 SEL 2 0500
□ 31354 WR R 32078 B078
□ 31359 TR 1 31379 A379- - - - - I
□ 31364 WR R 32092 B092
□ 31369 WR R 32296 B296
□ 31374 SGN T 15 31355 ACE5
□ 31379 TRS O 12 31384 AC84- - - - - I
□ 31384 TRA I 03 31394 A3I4- - - - - I
□ 31389 TR 1 31399 A399- - - - - I
□ 31394 HLT J 3012.....I
□ 31399 TR 1 0000.....I
□ 31404 LDA # 30629 &629.....I
□ 31409 ADD G 3215
□ 31414 ULA * 31419 A419
□ 31419 UNL 7 12 0000 0&00
□ 31424 LDA # 30639 &639
□ 31429 ADD G 3215
□ 31434 ULA * 31439 A439
□ 31439 UNL 7 12 0000 0&00
□ 31444 ADM 6 15 31355 ACE5
□ 31449 TR 1 31324 A324

```

RESET FIELDS AND EXIT

END 4 CH ROUTINES

TYPE OUT AREA-
ALL CHANNELS

PASS NO AT T/O

LONG T/O SWITCH

```

□ 31309 ADD G 32603 B603
□ 31314 ULA * 31399 A399
□ 31319 TRA I 06 31404 AU-4- - - - - I
□ 31324 UNL 7 12 32091 B&91
□ 31329 TRA I 01 31399 A3Z9- - - - - I
□ 31334 SET B 0001
□ 31339 LOD 8 3217
□ 31344 UNL 7 32081 B081
□ 31349 SEL 2 0500
□ 31354 WR R 32078 B078
□ 31359 TR 1 31379 A379- - - - - I
□ 31364 WR R 32092 B092
□ 31369 WR R 32296 B296
□ 31374 SGN T 15 31355 ACE5
□ 31379 TRS O 12 31384 AC84- - - - - I
□ 31384 TRA I 03 31394 A3I4- - - - - I
□ 31389 TR 1 31399 A399- - - - - I
□ 31394 HLT J 3012.....I
□ 31399 TR 1 0000.....I
□ 31404 LDA # 30629 &629.....I
□ 31409 ADD G 3215
□ 31414 ULA * 31419 A419
□ 31419 UNL 7 12 0000 0&00
□ 31424 LDA # 30639 &639
□ 31429 ADD G 3215
□ 31434 ULA * 31439 A439
□ 31439 UNL 7 12 0000 0&00
□ 31444 ADM 6 15 31355 ACE5
□ 31449 TR 1 31324 A324

```

CHANNEL #1 INTERRUPT PROG

TAPE #1

```

□ 31454 SEL 2
□ 31459 WR R 3680
□ 31464 LDA # 02 31464 A404
□ 31469 TRA I 20254 -254- - - - - CN43
□ 31474 LIP , 15 2&&0 2&&0

```

TAPE #1

```

□ 31479 SEL 2
□ 31484 TRS O 03 31494 A4I4- - - - -
□ 31489 TR 1 31514 A5I4- - - - -
□ 31494 LDA # 02 29929 R9K9.....I
□ 31499 ULA * 02 19449 Z4M9.....I
□ 31504 LDA # 02 31504 A5-4.....I
□ 31509 TR 1 19424 Z4Z4- - - - - CD39
□ 31514 LIP , 15 2&&0 2&&0.....I

```

TAPE #1

```

□ 31519 SEL 2
□ 31524 BSP 3 0004
□ 31529 LDA # 02 31529 A5K9
□ 31534 TRA I 20254 -254- - - - - CN43
□ 31539 LIP , 15 2&&0 2&&0

```

NEXT PAGE

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```
□ 31544 SEL 2
□ 31549 RD Y 36000 F000
□ 31554 LDA # 02 31554 A5N4
□ 31559 TRA I 20254 -254-----CN43
□ 31564 LIP , 15 2&&0 2&&0
```

TAPE #1

```
□ 31569 SEL 2
□ 31574 TRS 0 03 31584 A5H4-----
□ 31579 TR 1 31604 A604-----
□ 31584 LDA # 02 29929 R9K9.....I
□ 31589 ULA * 02 19609 Z6-9
□ 31594 LDA # 02 31594 A5R4
□ 31599 TR 1 19589 Z589-----CE40
□ 31604 LIP , 15 2&&0 2&&0.....I
```

TAPE #1

```
□ 31609 SEL 2
□ 31614 WR R 3680
□ 31619 LDA # 02 31619 A6J9
□ 31624 TRA I 20254 -254-----CN43
□ 31629 LIP , 15 2&&0 2&&0
```

CHANNEL #2 INTERRUPT PROG

TAPE #2

```
□ 31634 SEL 2
□ 31639 TRS 0 03 31649 A6D9-----
□ 31644 TR 1 31669 A669-----
□ 31649 LDA # 02 30019 &0J9.....I
□ 31654 ULA * 02 19449 Z4M9
□ 31659 LDA # 02 31659 A6N9
□ 31664 TR 1 19424 Z424-----CD39
□ 31669 LIP , 15 2&&0 2&&0.....I
```

TAPE #2

```
□ 31674 SEL 2
□ 31679 BSP 3 0004
□ 31684 LDA # 02 31684 A6Q4
□ 31689 TRA I 20254 -254-----CN43
□ 31694 LIP , 15 2&&0 2&&0
```

TAPE #2

```
□ 31699 SEL 2
□ 31704 RD Y 37000 G000
□ 31709 LDA # 02 31709 A7-9
□ 31714 TRA I 20254 -254-----CN43
□ 31719 LIP , 15 2&&0 2&&0
```

TAPE #2

```
□ 31724 SEL 2
□ 31729 TRS 0 03 31739 A7C9-----
□ 31734 TR 1 31759 A759-----
□ 31739 LDA # 02 30019 &0J9.....I
□ 31744 ULA * 02 19609 Z6-9
□ 31749 LDA # 02 31749 A7M9
□ 31754 TR 1 19589 Z589-----CE40
□ 31759 LIP , 15 2&&0 2&&0.....I
```

TAPE #2

```
□ 31764 SEL 2
□ 31769 WR R 3680
□ 31774 LDA # 02 31774 A7P4
□ 31779 TRA I 20254 -254-----CN43
□ 31784 LIP , 15 2&&0 2&&0
```

CHANNEL #3 INTERRUPT PROG

TAPE #3

NEXT PAGE

gscans/g0014208.png

```
□ 31789 SEL 2
□ 31794 TRS O 03 31804 A864
□ 31799 TR 1 31824 A824
□ 31804 LDA # 02 30109 81-9
□ 31809 ULA * 02 19449 Z4M9
□ 31814 LDA # 02 31814 A8J4
□ 31819 TR 1 19424 Z424
□ 31824 LIP , 15 2880 2880
-----CD39
```

TAPE #3

```
□ 31829 SEL 2
□ 31834 BSP 3 0004
□ 31839 LDA # 02 31839 A8L9
□ 31844 TRA I 20254 -254
□ 31849 LIP , 15 2880 2880
-----CN43
```

TAPE #3

```
□ 31854 SEL 2
□ 31859 RD Y 38000 H000
□ 31864 LDA # 02 31864 A804
□ 31869 TRA I 20254 -254
□ 31874 LIP , 15 2880 2880
-----CN43
```

TAPE #3

```
□ 31879 SEL 2
□ 31884 TRS O 03 31894 A8I4
□ 31889 TR 1 31914 A9I4
□ 31894 LDA # 02 30109 81-9
□ 31899 ULA * 02 19609 Z6-9
□ 31904 LDA # 02 31904 A9-4
□ 31909 TR 1 19589 Z589
□ 31914 LIP , 15 2880 2880
-----CE40
```

TAPE #3

```
□ 31919 SEL 2
□ 31924 WR R 3680
□ 31929 LDA # 02 31929 A9K9
□ 31934 TRA I 20254 -254
□ 31939 LIP , 15 2880 2880
-----CN43
```

CHANNEL #4 INTERRUPT PROG

TAPE #4

```
□ 31944 SEL 2
□ 31949 TRS O 03 31959 A9E9
□ 31954 TR 1 31979 A979
□ 31959 LDA # 02 30199 81R9
□ 31964 ULA * 02 19449 Z4M9
□ 31969 LDA # 02 31969 A909
□ 31974 TR 1 19424 Z424
□ 31979 LIP , 15 2880 2880
-----CD39
```

TAPE #4

```
□ 31984 SEL 2
□ 31989 BSP 3 0004
□ 31994 LDA # 02 31994 A9R4
□ 31999 TRA I 20254 -254
□ 32004 LIP , 15 2880 2880
-----CN43
```

TAPE #4

```
□ 32009 SEL 2
□ 32014 RD Y 39000 I000
□ 32019 LDA # 02 32019 B0J9
□ 32024 TRA I 20254 -254
□ 32029 LIP , 15 2880 2880
-----CN43
```

TAPE #4

NEXT PAGE

```

#####
32034 SEL 2
32039 TRS 0 03 32049 B0D9-
32044 TR 1 32069 B069-
32049 LDA # 02 30199 61R9.
32054 ULA * 02 19609 Z6-9
32059 LDA # 02 32059 B0N9
32064 TR 1 19589 Z589-CE40
32069 LIP 15 2680 2680.
#####

```

TAPE #4

WORK AREA AND CONSTANTS

```

3 32073
3 32077
2 013 32090
2 003 32093
5 201 32294
2 003 32297
5 201 32498
2 001 32499
2 001 32500
2 010 32510
2 011 32521
2 011 32532
2 010 32542
2 010 32552
2 023 32575
2 001 32576
2 023 32599
2 001 32600
2 003 32603

```

```

32294 B294
32498 B498

```

TS- -012-
WR

RD

□

```

5273416890
361547199H
111111111A
7777777777

```

TS- -012 ARITH ERROR WR

□

TS- -012 ARITH ERROR RD

□

16

WORK AREA

2 005 36004

2 005 37004

2 005 38004

2 005 39004

DSD POUGHKEEPSIE

DEPT. 265, BLDG. 918

ERRATA SHEET, NUMBER 1, FOR 8TS08

TWO AND FOUR CHANNEL TAPE TEST

Done 006

11-22-61

I. Changes to Program Write-Up

- A. One Page iii, Section F., subsection 1, the second sentence now reads: This half occurs on the first pass of the program. The sentence should read: This halt occurs only on the first pass of this program.
- B. On Page iv, Section F., subsection 2, the paranthetic expression now reads: (Always preceded by a type-out). The paranthetic expression should read: (Always preceded by a type-out unless Alteration Switch 911 is ON).

WBB:eh
June 6, 1961