

MAINDEC-08-D2BA-D

IDENTIFICATION

Product Code: MAINDEC-08-D2BA-D  
Product Name: Exerciser for the PDP-8  
Teletype Paper Tape Reader  
Date Created: February 15, 1967  
Maintainer: Diagnostics Group  
Author: R. Green  
Previous Code: MAINDEC 810-A

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1. ABSTRACT

This is an exerciser program for the PDP-8 Teletype Paper Tape Reader. Test tapes are read in a random stop-start fashion and errors reported on the Teletype printer.

2. REQUIREMENTS

2.1 Equipment

Standard PDP-8

2.2 Storage

Locations 1-2675

2.3 Preliminary Programs

None

3. LOADING PROCEDURE

The Binary Loader is used.

4. STARTING PROCEDURE

4.1 Control Switch Settings

4.1.1 Test Tape Generator (Part 1) -

SR0 Punch alternate 1s and 0s

SR1 Punch binary count

SR2 Punch all same character as specified by SR4-SR11

4.1.2 Tape Read Test (Part 2) -

SR0 (1) Stop on error  
(0) Print on error

SR1 (1) Ignore errors

SR2 (1) Print on error  
(0) Print all errors at end of block

SR6 (1) Select block size  
(0) Random block size

SR7 (1) Select stall  
(0) Random stall

SR8 (1) Resync tape at end of each block

SR9 (1) Read alternate 1s and 0s

SR10 (1) Read binary count tape

SR11 (1) Read a tape of all the same character

4.2 Starting Addresses

0200 Test tape generator (part 1)

1625 Read binary count tape or alternate 1s and 0s tape (part 2)

2000 Read tape of all the same character (part 2)

4.3 Program and/or Operator Action

4.3.1 Test Tape Generator (Part 1) -

- a. Set SR (SWITCH REGISTER) to 0200 and press LOAD ADDRESS.
- b. Set SR for operating mode and press START.
- c. Tape is punched until program is stopped. To make a closed loop from a test tape, the punched pattern must be maintained at the splice.

4.3.2 Tape Read Test (Part 2) -

- a. Load test tape into Teletype reader.
- b. For tape patterns of all the same character enter the desired character into memory location 0034. Set SR to 2000 and press LOAD ADDRESS. Set SR to desired configuration, then press START. Testing begins. For other tape patterns omit this paragraph and go to c.
- c. Set SR to 1625. Press LOAD ADDRESS. Set SR to desired configuration. If SR6 is a 1 (select block size), enter the desired block size into location 0056 before pressing START. The program reads this block of characters at full speed, then stalls. If SR7 is a 1 (select stall), enter the desired stall into location 2154 before passing START. This will be the stall between blocks. To calculate the stall length convert the stall number to decimal and multiply by 0.1 msec.

In either case, if no entry is made, the last block size or stall generated by the random number generator is used.

Push START.

d. The program reads the test tape until it finds an all-zero character, then it prints an IN SYNC message and halts.

Press START to resync. Press CONTINUE to go on.

e. Testing begins when CONTINUE is pushed.

5. OPERATING PROCEDURE

See paragraph 4.

5.1 Error Printouts

BLK LNG XXX LST STL XXXX GD XXX BD XXX POS XXX

BLK LNG XXX

BLOCK LENGTH where XXX is the octal number of characters in the block being read when the error occurred.

LST STL XXXX	LAST STALL where XXXX is the octal number, in increments of 0.1 msec, which specifies the stall before this block was started.
GD XXX	GOOD where XXX is the correct character.
BD XXX	BAD where XXX is the character read.
POS XXX	POSITION where XXX is the position of the erroneous character in this block.

7. RESTRICTIONS (None)

8. MISCELLANEOUS

8.1 Execution Time

Program runs until halted manually.

9. PROGRAM DESCRIPTION

For test tapes containing a punched pattern (binary count or alternate 1s and 0s) the program reads the tape until it detects the first all 0s character. The IN SYNC message is then printed. For tapes of all the same character, this step is omitted.

When testing begins, a random number from 0-7 is selected for the number of characters to be read. This is referred to as the "block length." Another random number from 0-7777 is selected for the stall to be performed after the block has been read/in. Both the block size and the stall can be held constant under switch control. See paragraph 4.3.2.

During the stall an output character is sent to the Teletype as an added exercise. Successive output characters form a binary count pattern when punched.

When running in the random mode, the tape is read in a random stop-start fashion.

## 10. LISTINGS

@AERHLT	0003	MSK5	0032
AGNRAN	0054	M1	2152
AMSG1	0025		
APC0T	1712	M120	2151
APTEND	0052	M25	0424
APTNOW	0053	M30	2153
ASCOP	0004	M377	0020
ASTSNC	2155	M4	0441
BACK	0401	M7776	0021
BAD2	0133	ONE	1707
BFPNCH	0213		
BGN1	0200	PALT10	0225
BLKLNQ	0075	PBNCNT	0234
BLSTOR	0056	PC0T	2156
CEK	2225	POSIT	0144
CHACNT	0051	PRINT2	0024
CKRESC	2133	PRINT3	0005
CKTEN	2276	PRINT4	0006
CNTEN	0057	PRINT6	1711
CON1	0042	PRTEND	2251
CON10	2146	PRTNOW	2200
CON2	0043	PSWRFG	0241
CON3	0044	PUNCH	0220
CON5	0045	RANUM	1621
CON6	0046	READ	2050
CON7	2143	ROTAT3	0571
CON8	2144	ROTAT6	0562
CON9	2145	SCOPF	0442
CRWAIT	0413	SETONS	1701
DCRSTR	2245	SETUP2	0455
DLY13	1706	STAL	0023
END	0425	STALL1	0112
ERHLT	0450	STAL70	0426
FOUR	1624	STLSTR	2154
GENRAN	1600	STORLM	0055
GOOD?	0123	STOR1	0033
HSKP	2000	STOR2	0034
IISZ	2101	STOR3	0035
INF2	0060	STOR4	0036
INF3	2600	STOR5	0037
INF4	2621	STRSNC	1630
INSYNC	1650	SU2	0040
IR1	0011	SVN4HN	0041
IR2	0012	THREE	1622
ISSZ	2107	THRE77	2150
ISZZ	2122	TH77	1710
LASTAL	0007	TSTZRO	1623
LNLIM	2147	TW6	0577
MSG1	0400	TYPE	2235
MSK1	0026	WORK	0022
MSK2	0027	WORK1	0047
MSK3	0030	WORK2	0050
MSK4	0031	U	

/TTY ERRATIC READ TEST (PDP-8)

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0001	7402	HLT	/INTERRUPT ON ILLEGALLY
0002	5400	JMP I 0	
0003	0450	AERHLT, ERHLT	
0004	0442	ASCOP, SCOPE	
0005	2600	PRINT3, INF3	
0006	2621	PRINT4, INF4	
0007	0000	LASTAL, 0	

/CONSTANTS, VARIABLES, ETC.

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0011	0000	IR1, 0
0012	0000	IR2, 0
0013	0000	0

\*20

0020	7401	M377, -377
0021	0002	M7776, -7776
0022	0000	WORK, 0
0023	0426	STAL, STAL70
0024	0060	PRINT2, INF2
0025	0400	AMSG1, MSG1
0026	0007	MSK1, 7
0027	0070	MSK2, 70
0030	0300	MSK3, 300
0031	0700	MSK4, 700
0032	7000	MSK5, 7000
0033	0000	STOR1, 0
0034	0000	STOR2, 0
0035	0000	STOR3, 0
0036	0000	STOR4, 0
0037	0000	STOR5, 0
0040	0455	SU2, SETUP2
0041	7400	SVN4HN, 7400
0042	7734	CON1, -44
0043	7766	CON2, -12
0044	6545	CON3, -1233
0045	3536	CON5, -4242
0046	2377	CON6, 2377
0047	0000	WORK1, 0
0050	0000	WORK2, 0
0051	0000	CHACNT, 0
0052	2251	APTEND, PRTEND
0053	2200	APTNOW, PRTNOW
0054	1600	AGNRAN, GENRAN
0055	0000	STORLM, 0
0056	0000	BLSTOR, 0
0057	0000	CNTEN, 0

/STORAGE FOR BAD CHARACTER  
 /STORAGE FOR GOOD CHARACTER  
 /STORAGE FOR BLOCK LENGTH  
 /STORAGE FOR STALL  
 /STORAGE FOR POSITION OF BAD CHAR.

0060	0000	INF2,	0		
0061	0215	215			
0062	0212	212			
0063	0377	377			
0064	0377	377			
0065	0302	302		/B	
0066	0314	314		/L	
0067	0313	313		/K	
0070	0240	240		/SPACE	
0071	0314	314		/L	
0072	0316	316		/N	
0073	0307	307		/G	
0074	0240	240		/SPACE	
0075	0330	BLKLNQ,	330		/X
0076	0330	330		/X	
0077	0330	330		/X	
0100	0240	240		/SPACE	
0101	0240	240		/SPACE	
0102	0314	314		/L	
0103	0323	323		/S	
0104	0324	324		/T	
0105	0240	240		/SPACE	
0106	0323	323		/S	
0107	0324	324		/T	
0110	0314	314		/L	
0111	0240	240		/SPACE	
0112	0330	STALL1,	330		/X
0113	0330	330		/X	
0114	0330	330		/X	
0115	0330	330		/X	
0116	0240	240		/SPACE	
0117	0240	240		/SPACE	
0120	0307	307		/G	
0121	0304	304		/D	
0122	0240	240		/SPACE	
0123	0330	GOOD2,	330		/X
0124	0330	330		/X	
0125	0330	330		/X	
0126	0240	240		/SPACE	
0127	0240	240		/SPACE	
0130	0302	302		/B	
0131	0304	304		/D	
0132	0240	240		/SPACE	
0133	0330	BAD2,	330		/X
0134	0330	330		/X	
0135	0330	330		/X	
0136	0240	240		/SPACE	
0137	0240	240		/SPACE	
0140	0320	320		/P	
0141	0317	317		/O	
0142	0323	323		/S	
0143	0240	240		/SPACE	
0144	0330	POSIT,	330		/X
0145	0330	330		/X	
0146	0330	330		/X	
0147	0375	375		/END	



```

/TAPE LOOP GENERATOR
*200
0200 7604 BGN1,      LAS
0201 7004 RAL
0202 7430 SZL
0203 5225 JMP PALT10
0204 7004 RAL
0205 7430 SZL
0206 5234 JMP PBNCNT
0207 7004 RAL
0210 7430 SZL
0211 5241 JMP PSWREG
0212 5200 JMP BGN1

```

/TEST SWITCH REGISTER

/FOR TAPE PATTERN

/PUNCH ALTERNATE 1'S,0'S

/PUNCH BINARY COUNT

/PUNCH SPECIFIC CHARACTER

## /TAPE PUNCH ROUTINE

```

0213 0000 BFPNCH,  0
0214 7200 CLA
0215 1213 TAD BFPNCH
0216 3220 DCA PUNCH
0217 5223 JMP .+4

0220 0000 PUNCH,  0
0221 6041 TSF
0222 5221 JMP .-1
0223 6046 TLS
0224 5620 JMP I PUNCH

```

/ALTERNATE ONES AND ZEROS

```

0225 4213 PALT10,  JMS BFPNCH
0226 7200 CLA
0227 7040 CMA
0230 4220 JMS PUNCH
0231 7200 CLA
0232 4220 JMS PUNCH
0233 5226 JMP PALT10+1

```

## /BINARY COUNT

```

0234 4213 PBNCNT,  JMS BFPNCH
0235 7200 CLA
0236 7001 IAC
0237 4220 JMS PUNCH
0240 5236 JMP PBNCNT+2

```

## /PUNCH SPECIFIC CHARACTER

```

0241 4213 PSWREG,  JMS BFPNCH
0242 7200 CLA
0243 7604 LAS
0244 4220 JMS PUNCH
0245 5242 JMP .-3

```

/TY PRINT ROUTINE

```

*400
0400 0000 MSG1,      0
0401 4226 BACK,      JMS STAL70
0402 1411 TAD I IR1
0403 6046 TLS
0404 1225 TAD END
0405 7640 SZA CLA
0406 7410 SKP
0407 5213 JMP CRWAIT
0410 6041 TSF
0411 5210 JMP .-1 ~
0412 5202 JMP BACK+1
0413 1224 CRWAIT,   TAD M25           /STALL FOR
0414 3047 DCA WORK1                               /CARRIAGE RETURN
0415 1021 TAD M7776
0416 3022 DCA WORK
0417 2022 ISZ WORK
0420 5217 JMP .-1
0421 2047 ISZ WORK1
0422 5215 JMP CRWAIT+2
0423 5600 JMP I MSG1
    
```

```

0424 7753 M25,      -25
0425 7403 END,      -375
    
```

/70 M.S. STALL

```

0426 0000 STAL70,   0
0427 7200 CLA
0430 1241 TAD M4
0431 3022 DCA WORK
0432 1021 TAD M7776
0433 3047 DCA WORK1
0434 2047 ISZ WORK1
0435 5234 JMP .-1
0436 2022 ISZ WORK
0437 5232 JMP STAL70+4
0440 5626 JMP I STAL70
0441 7774 M4,      -4
0442 0000 SCOPE,   0
0443 7604 LAS                               /CHECK FOR SCOPE MODE
0444 7006 RTL
0445 7430 SZL
0446 2242 ISZ SCOPE                               /YES, SCOPE MODE. ICR RETURN
0447 5642 JMP I SCOPE                               /RETURN
0450 0000 ERHLT,   0
0451 7604 LAS                               /CHECK FOR HALT ON ERROR
0452 7700 SMA CLA
0453 2250 ISZ ERHLT                               /NO HALT ON ERROR. ICR RETURN
0454 5650 JMP I ERHLT                               /RETURN
    
```

0455	0000	SETUP2,	0	
0456	7300	CLA CLL		
0457	1056	TAD BLSTOR		/BLOCK LENGTH
0460	0031	AND MSK4		
0461	4362	JMS ROTAT6		
0462	3075	DCA BLKLNG		
0463	1056	TAD BLSTOR		
0464	0027	AND MSK2		
0465	4371	JMS ROTAT3		
0466	3076	DCA BLKLNG+1		
0467	1056	TAD BLSTOR		
0470	0026	AND MSK1		
0471	1377	TAD TW6		
0472	3077	DCA BLKLNG+2		
0473	1007	TAD LASTAL		/STALL
0474	0032	AND MSK5		
0475	7006	RTL		
0476	7006	RTL		
0477	1377	TAD TW6		
0500	3112	DCA STALL1		
0501	1007	TAD LASTAL		
0502	0031	AND MSK4		
0503	4362	JMS ROTAT6		
0504	3113	DCA STALL1+1		
0505	1007	TAD LASTAL		
0506	0027	AND MSK2		
0507	4371	JMS ROTAT3		
0510	3114	DCA STALL1+2		
0511	1007	TAD LASTAL		
0512	0026	AND MSK1		
0513	1377	TAD TW6		
0514	3115	DCA STALL1+3		
0515	1037	TAD STOR5		/CHARACTER POSITION
0516	0031	AND MSK4		
0517	4362	JMS ROTAT6		

0520	3144	DCA POSIT	
0521	1037	TAD STOR5	
0522	0027	AND MSK2	
0523	4371	JMS ROTAT3	
0524	3145	DCA POSIT+1	
0525	1037	TAD STOR5	
0526	0026	AND MSK1	
0527	1377	TAD TW6	
0530	3146	DCA POSIT+2	
0531	1034	TAD STOR2	/GOOD CHARACTER
0532	0030	AND MSK3	
0533	4362	JMS ROTAT6	
0534	3123	DCA GOOD2	
0535	1034	TAD STOR2	
0536	0027	AND MSK2	
0537	4371	JMS ROTAT3	
0540	3124	DCA GOOD2+1	
0541	1034	TAD STOR2	
0542	0026	AND MSK1	
0543	1377	TAD TW6	
0544	3125	DCA GOOD2+2	
0545	1033	TAD STOR1	/BAD CHARACTER
0546	0030	AND MSK3	
0547	4362	JMS ROTAT6	
0550	3133	DCA BAD2	
0551	1033	TAD STOR1	
0552	0027	AND MSK2	
0553	4371	JMS ROTAT3	
0554	3134	DCA BAD2+1	
0555	1033	TAD STOR1	
0556	0026	AND MSK1	
0557	1377	TAD TW6	
0560	3135	DCA BAD2+2	
0561	5655	JMP I SETUP2	
0562	0000	ROTAT6,        0	
0563	7012	RTR	
0564	7012	RTR	
0565	7012	RTR	
0566	1377	TAD TW6	
0567	7100	CLL	
0570	5762	JMP I ROTAT6	
0571	0000	ROTAT3,        0	
0572	7012	RTR	
0573	7010	RAR	
0574	1377	TAD TW6	
0575	7100	CLL	
0576	5771	JMP I ROTAT3	
0577	0260	TW6,            260	

```

                                /RANDOM NUMBER GENERATOR
                                *1600
1600 0000 GENRAN,      0
1601 7200  CLA

1602 1221  TAD RANUM
1603 7104  RAL CLL
1604 7430  SZL
1605 1222  TAD THREE
1606 3221  DCA RANUM
1607 1221  TAD RANUM
1610 0223  AND TSTZERO
1611 7440  SZA
1612 5216  JMP .+4
1613 1224  TAD FOUR
1614 1221  TAD RANUM
1615 5600  JMP I GENRAN
1616 7200  CLA
1617 1221  TAD RANUM
1620 5600  JMP I GENRAN
1621 2371  RANUM,      2371
1622 0003  THREE,      3
1623 0007  TSTZERO,   7
1624 0004  FOUR,      4
```

```

/TAPE LOOP SYNC ROUTINE
1625 1311 TAD PRINT6
1626 3011 DCA IR1
1627 4425 JMS I AMSG1
1630 1021 STRSNC, TAD M7776
1631 3306 DCA DLY13
1632 6036 KRB /CHECK FOR SYNC CHARACTERS
1633 6031 KSF
1634 5233 JMP .-1
1635 7200 CLA
1636 6034 KRS
1637 7450 SNA /TEST CHARACTER READ
1640 5250 JMP INSYNC
1641 2306 ISZ DLY13 /13 SECOND TIMER
1642 5232 JMP STRSNC+2
1643 7200 CLA
1644 1005 TAD PRINT3 /TIME OUT
1645 3011 DCA IR1
1646 4425 JMS I AMSG1
1647 5230 JMP STRSNC
1650 7200 INSYNC, CLA /SYNC CHARACTER DETECTED
1651 3712 DCA I APC0T
1652 1006 TAD PRINT4
1653 3011 DCA IR1
1654 4425 JMS I AMSG1
1655 7604 LAS /CHECK SW3
1656 7006 RTL
1657 7006 RTL
1660 7430 SZL
1661 5266 JMP .+5
1662 1020 TAD M377
1663 7402 HLT /START TO RESYNC
/CONTINUE TO GO ON
/IF SELECTING BLOCK LENGTH
/OR STALL, LOAD PARAMETERS.
/IF READING ALL SAME
/CHAR. PUT IT IN STOR2

1664 7450 SNA
1665 5230 JMP STRSNC
1666 7604 LAS /SET UP 1ST CHAR. COMPARE
1667 7010 RAR
1670 7430 SZL
1671 5705 JMP I SETONS+4
1672 7012 RTR
1673 7430 SZL
1674 5301 JMP SETONS
1675 7200 CLA
1676 1307 TAD ONE
1677 3034 DCA STOR2
1700 5705 JMP I SETONS+4
1701 7240 SETONS, CLA CMA
1702 0310 AND TH77
1703 3034 DCA STOR2
1704 5705 JMP I .+1
1705 2000 2000
1706 0000 DLY13, 0

1707 0001 ONE, 1
1710 0377 TH77, 377
1711 0146 PRINT6, POSIT+2
1712 2156 PC0T, PC0T

```

```

/BETWEEN BLOCK HOUSEKEEPING
*2000
2000 7200 HSKP,          CLA          /SET ERRORED CHAR
2001 1353 TAD M30          /STORAGE LIMIT
2002 3055 DCA STORLM
2003 7604 LAS
2004 7012 RTR
2005 7012 RTR
2006 7012 RTR
2007 7430 SZL
2010 5214 JMP .+4
2011 4454 JMS I AGNRAN      /GET RANDOM BLOCK LENGTH
2012 0347 AND LNGLIM      /MAX LENGTH 177
2013 3056 DCA BLSTOR
2014 7200 CLA
2015 1056 TAD BLSTOR
2016 7041 CIA
2017 3035 DCA STOR3
2020 7604 LAS
2021 7012 RTR
2022 7012 RTR
2023 7010 RAR
2024 7430 SZL
2025 5230 JMP .+3
2026 4454 JMS I AGNRAN      /GET RANDOM STALL
2027 3354 DCA STLSTR
2030 7200 CLA
2031 1354 TAD STLSTR
2032 7041 CIA          /MAX STALL 2 SEC
2033 3036 DCA STOR4
2034 1351 TAD M120      /CLEAR ERROR STORAGE
2035 3022 DCA WORK
2036 1046 TAD CON6
2037 3012 DCA IR2
2040 3412 DCA I IR2
2041 2022 ISZ WORK
2042 5240 JMP .-2
2043 1046 TAD CON6
2044 3012 DCA IR2
2045 3051 DCA CHACNT
2046 1043 TAD CON2
2047 3057 DCA CNTEN

```

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/READ-COMPARE LOOP
2050 6036 READ,      KRB
2051 6031 KSF
2052 5251 JMP .-1
2053 2051 ISZ CHACNT
2054 7200 CLA
2055 6034 KRS /READ NEXT CHARACTER
2056 3033 DCA STOR1
2057 1033 TAD STOR1
2060 7041 CIA
2061 1034 TAD STOR2
2062 7440 SZA /SKIP IF COMPARE
2063 4453 JMS I APTNOW /BAD
2064 7604 LAS /GOOD
2065 7010 RAR /SET UP NEXT
2066 7430 SZL /GOOD CHARACTER
2067 5307 JMP ISSZ /ALL SAME
2070 7010 RA
2071 7430 SZL
2072 5301 JMP IISZ /BINARY COUNT
2073 7200 CLA
2074 1034 TAD STOR2
2075 7040 CMA
2076 0350 AND THRE77
2077 3034 DCA STOR2
2100 5307 JMP ISSZ
2101 2034 IISZ, ISZ STOR2 /INCREMENT COUNT
2102 7000 NOP
2103 7200 CLA
2104 1034 TAD STOR2
2105 0350 AND THRE77 /MASK OUT 8 BITS
2106 3034 DCA STOR2
2107 2035 ISSZ, ISZ STOR3 /CHECK FOR END BLOCK
2110 5250 JMP READ /NOT AT END
2111 7200 CLA /CHECK FOR STORED ERRORS
2112 1046 TAD CON6
2113 3012 DCA IR2
2114 1412 TAD I IR2
2115 7510 SPA /SKIP IF NO ERROR
2116 4452 JMS I APTEND /PRINT ERRORS. END BLOCK
2117 7200 CLA
2120 1354 TAD STLSTR
2121 3007 DCA LASTAL
2122 2036 ISSZ, ISZ STOR4 /STALL IN INCREMENTS
2123 7410 SKP /OF 100 US.
2124 5333 JMP CKRESC
2125 7200 CLA

```



2126	1343	TAD CON7		/100US STALL
2127	3022	DCA WORK		
2130	2022	ISZ WORK		
2131	5330	JMP .-1		
2132	5322	JMP ISZZ		
2133	7604	CKRESC,	LAS	/CHECK FOR RESYNC
2134	0346	AND CON10		
2135	7440	SZA		
2136	5755	JMP I ASTSNC		
2137	2356	ISZ PC0T		
2140	1356	TAD PC0T		
2141	6046	TLS		
2142	5200	JMP HSKP		/START NEW BLOCK

/CONSTANTS AND VARIABLES

2143	7750	CON7,	-30
2144	0020	CON8,	20
2145	0040	CON9,	40
2146	0010	CON10,	10
2147	0007	LNLIM,	7
2150	0377	THRE77,	377
2151	7660	M120,	-120
2152	7777	M1,	-1
2153	7750	M30,	-30
2154	0000	STLSTR,	0
2155	1630	ASTSNC,	STRSNC
2156	0000	PC0T,	0

```

/READ - COMPARE LOOP SUBROUTINES
*2200
/ERROR ROUTINE
2200 0000 PRTNOW, 0
2201 4404 JMS I ASCOP
2202 7410 SKP
2203 5600 JMP I PRTNOW
2204 7604 LAS /ERROR REPORTING NOW
2205 7006 RTL /OR LATER
2206 7004 RAL
2207 7430 SZL
2210 5230 JMP TYPE-5 /PRINT NOW
2211 7200 CLA /STORE ERRORS. PRINT LATER
2212 2055 ISZ STORLM
2213 7410 SKP
2214 5245 JMP DCRSTR /LIMIT REACHED
2215 1032 TAD MSK5 /PUT ERR CHAR IN STORAGE
2216 3412 DCA I IR2
2217 1033 TAD STOR1
2220 3412 DCA I IR2
2221 1034 TAD STOR2
2222 3412 DCA I IR2
2223 1051 TAD CHACNT
2224 3412 DCA I IR2
2225 4403 CEK, JMS I AERHLT /SKIP FOR NO HALT ON ERROR

2226 7402 HLT /READ ERROR
2227 5600 JMP I PRTNOW
2230 7604 LAS
2231 7006 RTL
2232 7006 RTL
2233 7430 SZL
2234 4276 JMS CKTEN
2235 7200 TYPE, CLA /PRINT BAD AND GOOD
2236 1051 TAD CHACNT
2237 3037 DCA STOR5
2240 1024 TAD PRINT2
2241 3011 DCA IR1
2242 4440 JMS I SU2
2243 4425 JMS I AMSG1
2244 5225 JMP CEK
2245 7200 DCRSTR, CLA
2246 7040 CMA
2247 3055 DCA STORLM
2250 5600 JMP I PRTNOW

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                /PRINT ERRORS AT END BLOCK
2251 0000 PRTEND,      0
2252 7200 CLA
2253 1034 TAD STOR2
2254 3000 DCA AERHLT-3
2255 1412 TAD I IR2                /PUT BAD CHAR IN STOR1
2256 3033 DCA STOR1
2257 1412 TAD I IR2                /PUT GOOD CHAR IN STOR2
2260 3034 DCA STOR2
2261 1412 TAD I IR2                /PUT POSITION IN STOR5
2262 3037 DCA STOR5
2263 1024 TAD PRINT2
2264 3011 DCA IR1
2265 4440 JMS I SU2
2266 4425 JMS I AMSG1
2267 1412 TAD I IR2
2270 7710 SPA CLA
2271 5255 JMP PRTEND+4
2272 7200 CLA
2273 1000 TAD AERHLT-3
2274 3034 DCA STOR2
2275 5651 JMP I PRTEND
2276 0000 CKTEN,      0
2277 2057 ISZ CNTEN
2300 5676 JMP I CKTEN
2301 5702 JMP I .+1
2302 1630 STRSNC
    
```

/TTY PRINTOUTS

```

*2600
2600 0000 INF3, 0
2601 0215 215
2602 0212 212
2603 0377 377
2604 0377 377
2605 0303 303 /C
2606 0301 301 /A
2607 0316 316 /N
2610 0316 316 /N
2611 0317 317 /O
2612 0324 324 /T
2613 0240 240 /SPACE
2614 0323 323 /S
2615 0331 331 /Y
2616 0316 316 /N
2617 0303 303 /C
2620 0375 375 /END

2621 0000 INF4, 0
2622 0215 215
2623 0212 212
2624 0377 377
2625 0377 377
2626 0311 311 /I
2627 0316 316 /N
2630 0240 240 /SPACE
2631 0323 323 /S
2632 0331 331 /Y
2633 0316 316 /N
2634 0303 303 /C
2635 0256 256 /.
2636 0240 240 /SPACE
2637 0323 323 /S
2640 0324 324 /T
2641 0301 301 /A
2642 0322 322 /R
2643 0324 324 /T
2644 0240 240 /SPACE
2645 0324 324 /T
2646 0317 317 /O
2647 0240 240 /SPACE
2650 0322 322 /R
2651 0305 305 /E
2652 0323 323 /S
2653 0331 331 /Y
2654 0316 316 /N
2655 0303 303 /C
2656 0240 240 /SPACE
2657 0303 303 /C
2660 0317 317 /O
2661 0316 316 /N
2662 0324 324 /T
2663 0256 256 /.
2664 0240 240 /SPACE
    
```

2665	0324	324	/T
2666	0317	317	/O
2667	0240	240	/SPACE
2670	0307	307	/G
2671	0317	317	/O
2672	0240	240	/SPACE
2673	0317	317	/O
2674	0316	316	/N
2675	0375	375	/END

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