

# **LAP6 MANUSCRIPT LISTINGS**

**MAY 1,1967**

**Computer Systems Laboratory  
Washington University  
St. Louis, Missouri**

## LAP6 MANUSCRIPT LISTINGS

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May 1, 1967

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This document contains program listings for LAP6, the LINC Assembly Program described in the LAP6 Handbook (Computer Systems Laboratory, Technical Report No. 2), and assembled as the Standard configuration of LAP6 on the LAP6 Master Tape, available from the Computer Systems Laboratory. LAP6 was prepared on, and operates on, a LINC (Laboratory Instrument Computer).

This work was supported by the Division of Research Facilities and Resources of the National Institutes of Health under grant FR-218. Requests to reproduce this document, in whole or in part, should be directed to the author.

## LAP6 MANUSCRIPT LISTINGS

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## Assembling LAP6

The Standard configuration of LAP6 may be assembled from the LAP6 manuscripts in this document following the procedure below. Using LAP6, clear the working area by pushing START 20 at the beginning of each numbered step. Then add the appropriate manuscript(s) (in the order given), convert, and copy the relevant binary quarters as described. Ignore any ERRORS following conversion.

Block numbers are for Standard configurations; any configuration, of course, may be used to assemble any other configuration.

ADD MANUSCRIPT(S) and CONVERT	COPY		
	#blk	from block, (LAP6 Unit)	to block, (Unit n)
1. MSDISPLY	10	340	300
2. MSDISPLY ADDMS LO	1	343	324
3. FILECOMS	4	340	320
4. COPYFILE	3	340	314
5. COPY	2	340	336
6. CONVERT	3	340	330
7. CV DIS	2	340	310
8. DISX PX TELETYPE	2	340	325
9. PRINT MS TELETYPE	1	342	322
10. LIST TELETYPE	1	341	333
	1	342	327
	1	343	335
	2	346	312
	1	346	317

W A S H I N G T O N      U N I V E R S I T Y



S T . L O U I S , M I S S O U R I   6 3 1 1 0

COMPUTER SYSTEMS LABORATORY  
724 SOUTH EUCLID AVENUE

June 12, 1968

TELEPHONE: AREA CODE 314  
F O 1 - 7956

To: LAP6 Users

From: M. A. Clark *mac*

The following troubles have been found in LAP6:

The command  $\rightarrow L0_{EOL}$  leaves the Z Register incorrectly set if the LAP6 tape unit is not zero. (The command  $\rightarrow L0 \text{ NAME}, \text{ UNIT}_{EOL}$  works correctly, regardless of unit.)

The commands  $\rightarrow PM (LN(,LN))_{EOL}$  and  $\rightarrow LI (LN(,LN))_{EOL}$  when there is no current manuscript, and the commands  $\rightarrow "0$ ,  $\rightarrow "(space)$ ,  $\rightarrow :W$ , and  $\rightarrow :_$  can damage LAP6. ( $\rightarrow PM (LN, (LN,)) \text{ NAME}, \text{ UNIT}_{EOL}$  and  $\rightarrow LI (LN, (LN,)) \text{ NAME}, \text{ UNIT}_{EOL}$  work correctly regardless of the state of the current manuscript.) Since these are meaningless commands, most users have hopefully not been bothered. These commands can be deleted successfully with "del", as always, if noticed before the terminating EOL is struck.

LAP6 can be corrected by changing 11 or 12 words. Since it is the responsibility of this laboratory to maintain the reliability of this operating system, we cannot, unfortunately, view this as an optional modification. Copies of the "LAP6 Master Tape" released by the laboratory after this date will be corrected copies, and a correction sheet will be appended to the LAP6 Manuscript Listings. To minimize confusion of names for those already using modified versions, the corrected version is known as LAP6A; existing modification identification codes need not then be changed (e.g., LAP6-3L becomes LAP6A-3L, etc.).

The LAP6A corrections are compatible with all modified versions of LAP6 described in "LAP6 Modifications" (Tech. Memo no. 62, CSL, Wash. Univ., St. Louis, June 1, 1968).

I am afraid I must recommend, with many apologies, that you correct your copies. A correction procedure and Listings supplement are enclosed. There is no Handbook supplement. I will be glad to exchange LAP6A Master Tapes for LAP6 Master Tapes mailed here, if that is easier.

Mr. Conrad Bjerke and the Laboratory Computer Facility of the University of Wisconsin are to be credited for recognizing two of the troubles.

LAP6A

Changes to LAP6 Manuscript Listings:

As of June 1, 1968 the LAP6 Master Tape issued by the Computer Systems Laboratory differs from the LAP6 Manuscript Listings as follows. The tape now issued is the LAP6A Master Tape. The LAP6 Handbook is not affected.

<u>LAP6</u>				<u>LAP6A</u>			
<u>MSDISPLAY:</u>	p	CONT		p	CONT		
(p. 5)	250	2176	6Z-1	250	2175	6Z-2	[META TABLE
	:	:	:	:	:	:	
	252	7737	6Z-6Y-3	252	7757	-20	[LENGTH
	:	:	:	:	:	:	
	257	1461 #1N	SAE i 1	257	0221 #1N	XSK i 1	
	260	6253	JMP p-5	260	1461	SAE i 1	
	261	1021	LDA i 1	261	6253	JMP p-6	
	262	4263	STC p+1	262	1021	LDA i 1	
	263	0000	TO META	263	7777	JMP 1777	
	:	:	:	:	:	:	
(p. 18)	1555	7511	JMP 2T-2	1555	7541	JMP 4Z	[CHECK FOR
	:	:	:	:	:	:	CURRENT MS
(p. 19)	1641	7541	JMP 4Z	1641	7511	JMP 2T-2	[WORKING AREA
	:	:	:	:	:	:	MS
	1654	7541	JMP 4Z	1654	7511	JMP 2T-2	
	:	:	:	:	:	:	
(p. 21)	1777	UNUSED		1777	4000	STC 0	[DISPATCH META
<u>ADDMS LO:</u>							
(p. 30)	1760	0000 #8T 7E		1760	0000 #8T 7E		[LAP6 UNIT

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## Correction Procedure for LAP6A

Making the following corrections to LAP6 produces LAP6A. Different configurations of LAP6 must be modified separately.

1. To fix →PM, →LI, →"0, →"(space), →:W, and →:\_ :

- a. RDC block 300 (or the first block of configuration n) into quarter 0.

Change the contents of seven registers:

LAP6	LAP6A
.	.
.	.
p .	.
247 0061	0061
<u>250 2176</u> change to <u>2175</u>	
251 0067	0067
<u>252 7737</u> change to <u>7757</u>	
253 0227	0227
254 6257	6257
255 6654	6654
256 6174	6174
<u>257 1461</u> change to <u>0221</u>	
<u>260 6253</u> change to <u>1461</u>	
<u>261 1021</u> change to <u>6253</u>	
<u>262 4263</u> change to <u>1021</u>	
<u>263 0000*</u> change to <u>7777</u>	
264 1040	1040
.	.
.	.
.	.

WRC quarter 0 in block 300 (or the first block of configuration n).

- b. RDC block 303 (or the fourth block of configuration n) into quarter 0.

Change the contents of four registers:

LAP6	LAP6A
.	.
p .	.
.	.
154 6011	6011
<u>155 7511</u> change to <u>7541</u>	
156 0231	0231
.	.
.	.
240 7647	7647
<u>241 7541</u> change to <u>7511</u>	
242 0721	0721
.	.
.	.

\*If the copy being corrected has been used, location 263 may not contain zero.

.	.	.
253	7660	7660
<u>254</u>	<u>7541</u>	change to <u>7511</u>
255	0720	0720
.	.	.
376	0000	0000
<u>377</u>	<u>0000</u>	change to <u>4000</u>

WRC quarter 0 in block 303 (or the fourth block of configuration n).

2. To fix  $\rightarrow$ LO. Correct only configurations which run on tape units other than Unit 0.

- a. RDC block 324 of, say, configuration 1 (or the 25th block of non-Unit 0 configuration n) into quarter 0.

Change the contents of one register, depending on the original contents:

	<u>LAP6</u>	<u>LAP6A</u>
	.	.
p	.	.
	.	.
357	1020	1020
If <u>360</u> contains <u>0001</u>	change to <u>1000</u>	
361	0354	0354
	.	.
	.	.

If 360 contains 0004 change to 4000

If 360 contains 0005 change to 5000

WRC quarter 0 in block 324 if configuration 1 ( or the 25th block of non-Unit 0 configuration n).

---

June 1, 1968

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## Configuring LAP6

The following equality statements are used in the manuscripts in this document to describe the Standard configuration of LAP6 (Chart I, LAP6 Handbook):

7F = 270	Upper boundary of Lower File
7D = 300	First block of LAP6
7E = 0	LAP6 Unit
7A = 350	First block of manuscript Working Area
7B = 0	Working Area Unit
7G = 426	First block of Index
7C = 430	First block of Upper File

To assemble LAP6 for a different configuration make up a LAP6 manuscript which redefines the appropriate equality statements. Add this "configuration manuscript" just before converting in each numbered step of the assembly procedure.

In redefining the equality statements note that 7E and 7B are for Unit numbers. They must be equal to 0, 10, 40, or 50. 7E need not, however, be equal to 7B (i.e., LAP6 and the Working Area can be on different units).

The remaining equality statements are for tape block numbers (octal). The block number definitions must fit the formula:

$$0 \leq 7F \leq 7D < 7D+50_8 \leq 7A < 7G < 7C-1 \leq 776$$

In addition, the last digit of 7D must be zero, and the last digit of 7G must be 6.

A configuration definition which does not change need not be redefined.

## Modifying LAP6

If you are in a position to modify LAP6 for users other than yourself, it is recommended for clarity that the following modification procedure be followed:

1. Number the modification and pick an identifying letter for your area or institution, e.g., "2W" might be the second modification from Wisconsin. Title the modified version of LAP6 accordingly, e.g., "LAP6-2W".
2. Document the modification by supplying to the users both a LAP6 Handbook supplement and a Manuscript Listings supplement. Each supplement should state clearly; 1) the title of the modified version, 2) the title of the version being modified (i.e., LAP6-2W might be a modified LAP6, LAP6-1W, or LAP6-something else), and 3) the name and address of the person responsible for the modification.
  - a. The Handbook supplement should describe behavioral differences between the modified version and the version described in the LAP6 Handbook or in relevant supplements.
  - b. The Listings supplement should provide actual listings of the new sequence, or the instruction context containing the new sequence, of instructions; it should be clear to the reader which instructions in the Manuscript Listings, or relevant listing supplements, are affected.

An example of documentation for a modification (1L, from St. Louis) is included. We will be glad to act as a clearing house if you need to know whether an identifying letter has been used.

LAP6-1L

Modification to: LAP6

LAP6 Handbook Supplement:

The teletype commands PX, LI, and PM operate via DEC buffered teletype attached to the LINC on channel 14. The Relay Register is not affected; bit 0 of the Relay Register may be used for anything without interference from LAP6-1L.

The mnemonic EXC is recognized by LAP6-1L during conversion as the mnemonic for the code 740; the mnemonic PDP represents the code 513. The mnemonic MTT is not recognized by LAP6-1L.  
(See Chart III.)

July 1, 1967

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## LAP6-LL

Modification to: LAP6

LAP6 Manuscript Listings Supplement:

<u>LAP6</u>				<u>LAP6-LL</u>			
<u>MSDISPLY:</u>	p	CONT		p	CONT		
(p. 2)	74	1620	BSE i	74	6076	JMP p+2	CDO NOT SET RELAY REGISTER
<u>COPY:</u>							
(p. 67)	660	4740	"TM,"	660	2630	"CE,"	CEXC=740
	⋮	⋮	⋮	⋮	⋮	⋮	⋮
(p. 68)	704	4733	"TH,"	704	4343	"PP,"	CPDP
	⋮	⋮	⋮	⋮	⋮	⋮	⋮
(p. 69)	743	0000	HLT	743	0513	OPR 13	COPIR 13=PDP
<u>TELETYPE:</u>							
(p. 135)	1570	5577	STC p+7	1570	0301	ROR 1	CJUSTIFY TELETYPE CODE
	1571	0015	RTA	1571	0514	OPR 14	CDELIVER CODE
	1572	0071	SET i 11	1572	6017	JMP 17	CRETURN

July 10, 1967

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VALUE	LINE	VALUE	LINE		
1A	0030	17	3T	0426	441
1B	0067	57	3V	0620	644
1C	0077	71	3W	0710	741
1D	0155	153	3X	0737	772
1E	0124	120	4A	0273	301
1F	1737	2051	4B	1301	1354
1G	0151	146	4C	1320	1375
1H	1767	2104	4D	1311	1365
1K	0176	175	4E	1331	1406
1L	0212	212	4F	0341	352
1M	0232	234	4G	1375	1454
1N	0257	261	4H	0353	365
1P	0213	213	4J	0364	376
1R	0113	106	4L	1355	1434
1T	0222	223	4M	0320	326
1W	0133	130	4P	0334	344
1Y	1717	2030	4Q	1274	1346
1Z	1752	2065	4S	1345	1423
2A	1637	1741	4T	0705	734
2B	1625	1723	4U	0665	714
2C	1610	1704	4Z	1541	1630
2D	1407	1470	5A	1022	1061
2E	1572	1664	5B	1024	1063
2F	1432	1514	5C	1235	1304
2G	1663	1767	5D	1051	1110
2H	1762	2076	5E	1060	1120
2I	1652	1755	5F	1070	1131
2J	1703	2012	5H	1076	1140
2K	1014	1051	5J	1115	1157
2L	1627	1726	5K	1251	1321
2M	1000	1034	5L	0264	270
2N	1452	1535	5M	1167	1234
2P	1604	1677	5N	1120	1163
2Q	1667	1774	5P	1137	1202
2R	1673	2001	5V	1261	1332
2S	1615	1712	5W	1202	1247
2T	1513	1600	5X	1222	1270
2U	1476	1562	5Y	1153	1217
2V	1713	2023	5Z	1165	1232
2W	1547	1637	6A	2001	2111
2X	0755	1013	6B	2053	2163
2Y	1530	1616	6C	2013	2123
2Z	1560	1651	6D	2237	2351
3A	0523	543	6E	2371	2354
3B	0726	760	6F	2143	2253
3C	0745	1001	6G	2065	2175
3D	0751	1006	6L	2077	2207
3E	0510	527	6Q	2111	2221
3F	0536	557	6V	2123	2233
3G	0432	447	6Y	2234	2345
3H	0452	470	6Z	2177	2310
3J	0551	573	7A	0350	2363
3K	0557	602	7B	0000	2364
3L	0567	613	7C	0430	2365
3M	0624	651	7D	0300	2366
3N	0650	676	7E	0000	2367
3P	0374	407	7G	0426	2370
3R	0405	420			
3S	0416	431			

P CONT

[LAP6 MANUSCRIPT INPUT AND DISPLAY

[INITIAL SETTINGS

B15

15 0701 RCG 7E  
 16 7300 717D [INITIAL START  
 17 6020 JMP 20  
 20 6030 JMP 1A [START 20  
 21 6030 JMP 1A  
 22 4020 STC 20  
 23 0077 SET i 17  
 24 6073 JMP 1C-4  
 25 0704 WRC 7E  
 26 0300 7D  
 27 6073 JMP 1C-4  
 30 0062 #1A SET i 2  
 31 6777 6777  
 32 1020 LDA i  
 33 2065 2065  
 34 1062 STA i 2  
 35 0017 COM  
 36 1062 STA i 2  
 37 0063 SET i 3  
 40 7001 7001  
 41 0065 SET i 5  
 42 2237 6D  
 43 1020 LDA i  
 44 5347 517A-1  
 45 1040 STA  
 46 0735 3B+7 [BN FOR BQ  
 47 4721 STC 3W+11  
 50 2044 ADD P-4 [FOR CHECKING WA TOO FULL  
 51 2144 ADD 1W+11 [1000  
 52 4151 STC 1G  
 53 2224 ADD 1T+2 [FOR CONTROL BLOCK NOT FULL  
 54 4576 STC 3L+7  
 55 4762 STC 2X+5  
 56 2213 ADD 1P  
 57 1040 STA  
 60 0524 3A+1  
 61 4526 STC 3A+3  
 62 2276 ADD 4A+3  
 63 1040 STA  
 64 1025 5B+1 [LNSIFRAME  
 65 0244 ROL 4 [140-VERT  
 66 5066 STC 5E+6  
 [KNOB SET  
 67 7261 #1B JMP 5V [READ KNOB  
 70 5072 STC 5F+2  
 71 0017 COM  
 72 4227 STC 1T+5 [TAPE OK  
 [SET TELETYPEWRITER  
 73 0015 RTA  
 74 1620 BSE i  
 75 0001 1  
 76 0014 ATR  
 [FIRST CHARACTER

P CONT  
77 0066 #1C SET i 6  
100 7000 -777  
101 7022 JMP 5A  
102 0515 KBD  
103 0077 SET i 17  
104 5766 1H-4000 [CHARS  
105 1437 SHD i 17  
106 7717 JMP 1Y [1ST CASE  
107 1437 SHD i 17  
110 6101 JMP 1C+2 [EOL  
111 1437 SHD i 17  
112 6155 JMP 1D [DELETE  
[REGULAR CHARACTER  
113 1362 #1R STH i 2  
114 6432 JMP 3G  
115 6452 JMP 3H  
116 6212 JMP 1L  
117 6374 JMP 3P  
120 0226 XSK i 6  
121 7737 JMP 1F  
122 1020 LDA i  
123 0012 12 [LINE TOO LONG  
[EOL  
124 1362 #1E STH i 2  
125 0046 SET 6  
126 0003 3  
127 1326 LDH i 6  
130 1420 SHD i  
131 5600 5600  
132 6232 JMP 1M  
[REGULAR EOL  
133 6557 #1W JMP 3K  
134 0017 COM [CONSTANT  
135 2526 ADD 3A+3  
136 4526 STC 3A+3 [MAX LN  
137 6222 JMP 1T  
140 6432 JMP 3G  
141 6452 JMP 3H  
142 6212 JMP 1L  
143 6374 JMP 3P  
144 1000 LDA [CONSTANT  
145 0526 3A+3  
146 0470 AZE i  
147 6155 JMP 1D  
150 1020 LDA i [WA FULL  
151 6350 #1G 617A  
152 1460 SAE i  
153 6425 617G-1 [INDEX-1  
154 6077 JMP 1C  
[DELETE WHOLE LINE  
155 1020 #1D LDA i  
156 0001 1  
157 1440 SAE  
160 0526 3A+3  
161 6163 JMP P+2  
162 6030 JMP 1A

P CONT  
163 1440 SAE  
164 0524 3A+1  
165 6167 JMP P+2  
166 6077 JMP 1C  
167 0017 COM  
170 6561 JMP 3K+2  
171 2526 ADD 3A+3  
172 4526 STC 3A+3  
173 6222 JMP 1T  
174 6176 JMP 1K  
175 6077 JMP 1C  
[DELETE UNFINISHED LINE OR META  
176 0050 #1K SET 10  
177 0000 0  
200 6624 JMP 3M  
201 1020 LDA i  
202 7776 -1 [CONSTANT  
203 6214 JMP 1L+2  
204 4215 STC 1L+3  
205 6654 JMP 3N+4  
206 6200 JMP 1K+2  
207 0043 SET 3  
210 0002 2  
211 6010 JMP 10  
[COUNT PLAYGROUND  
212 1020 #1L LDA i  
213 0001 #1P 1 [CONSTANT  
214 1160 ADM i  
215 1740 PLAYGROUND SCORE  
216 0450 AZE  
217 0220 XSK i 0  
220 2144 ADD 1W+11 [1000  
221 6000 JMP 0  
[TAPE NOT OK  
222 0011 #1T CLR  
223 4762 STC 2X+5 [CLEAR META EXIT  
224 4227 STC P+3  
225 6000 JMP 0  
226 1520 SRO i  
227 7777 7777 [OK IF ONE  
230 0220 XSK i 0 EOK  
231 6000 JMP 0 [NOT OK  
[META CHECK  
232 1326 #1M LDH i 6  
233 1120 ADA i  
234 7770 -7 [CONSTANT  
235 0451 APO  
236 6273 JMP 4A  
237 1306 LDH 6  
240 1420 SHD i  
241 3100 3100 [FREE META  
242 7703 JMP 2J  
243 0246 ROL 6  
244 4000 STC 0  
245 1326 LDH i 6  
246 2000 ADD 0

P CONT  
247 0061 SET i 1  
250 2176 6Z-1 [META TABLE  
251 0067 SET i 7  
252 7737 6Z-6Y-3 [LENGTH  
253 0227 XSK i 7  
254 6257 JMP P+3  
255 6654 JMP 3N+4  
256 6174 JMP 1K-2  
257 1461 #1N SAE i 1  
260 6253 JMP P-5  
261 1021 LDA i 1  
262 4263 STC P+1  
263 0000 TO META  
[KNOB SET  
[NEW LINESIFRAME  
264 1040 #5L STA  
265 1072 SF+2  
266 1040 STA  
267 1025 5B+1 [LINESIFRAME  
270 0244 ROL 4  
271 5066 STC 5E+6 [VERTICAL  
272 7024 JMP 5B  
[LOCATES  
[LOCATE #  
273 1020 #4A LDA i  
274 3777 -4000  
275 1140 ADM  
276 0006 6 [CONTANT  
277 6665 JMP 4U  
300 2213 ADD 1P  
301 1040 STA  
302 0705 4T  
303 4320 STC 4M  
304 6654 JMP 3N+4  
305 6176 JMP 1K  
306 0011 CLR  
307 2524 ADD 3A+1  
310 0017 COM  
311 1200 LAM  
312 0705 4T  
313 6226 JMP 1T+4  
314 7345 JMP 4S  
315 0472 LZE i  
316 7355 JMP 4L  
317 1020 LDA i  
320 0000 #4M REQ LN  
321 0017 COM  
322 4326 STC P+4  
323 0011 CLR  
324 2526 ADD 3A+3  
325 1220 LAM i  
326 0017 CHECK MAX  
327 1000 LDA  
330 0526 3A+3  
331 0472 LZE i  
332 4320 STC 4M

P CONT

333 7355 JMP 4L  
 [LOCATE FORWARD  
 [FORWARD PAGE

334 1000 #4P LDA  
 335 1025 SB+1  
 336 2202 ADD 1K+4  
 337 0450 AZE  
 340 6343 JMP 4F+2  
 [FORWARD LINE

341 0011 #4F CLR  
 342 2213 ADD 1P  
 343 4705 STC 4T  
 344 0050 SET 10  
 345 0227 1T+5 [TAPE STATUS  
 346 6353 JMP #4H  
 347 1000 LDA  
 350 0010 10  
 351 4227 STC 1T+5  
 352 6077 JMP 1C  
 [SLIDE FORWARD

353 0053 #4H SET 13  
 354 0000 0  
 355 6523 JMP 3A  
 356 6013 JMP 13  
 357 6551 JMP 3J  
 360 6364 JMP 4J  
 361 6557 JMP 3K  
 362 1140 ADM  
 363 0705 4T  
 364 6510 #4J JMP 3E  
 365 6432 JMP 3G  
 366 6452 JMP 3H [WQ FULL  
 367 1000 LDA  
 370 0705 4T  
 371 0450 AZE  
 372 6355 JMP 4H+2  
 373 6013 JMP 13  
 [PLAYGROUND FULL

374 0057 #3P SET 17  
 375 0000 0  
 376 6523 JMP 3A  
 377 6017 JMP 17  
 400 1000 LDA  
 401 0735 3B+7  
 402 4536 STC 3F  
 403 0054 SET 14  
 404 0002 2  
 405 1324 #3R LDH i 4  
 406 1420 SHD i  
 407 7700 7700  
 410 6416 JMP 3S  
 411 1362 STH i 2  
 412 6510 JMP 3E  
 413 6432 JMP 3G  
 414 0016 NOP  
 415 6405 JMP 3R

```

P CONT
416 1362 #3S STH i 2
417 6710 JMP 3W
420 6726 JMP 3B
421 0042 SET 2
422 0014 i4
423 2531 ADD 3A+6
424 4151 STC 1G [WA FULL
425 6533 JMP 3F-3
426 1020 #3T LDA i
427 0700 RDC 7B
430 6712 JMP 3W+2
431 6017 JMP 17

[MSINPUT SUBROUTINES
[CHECK WQ FULL
432 0055 #3G SET 15
433 0000 0
434 0220 XSK i 0
435 1020 LDA i
436 7377 7377
437 1440 SAE
440 0002 2
441 6000 JMP 0
442 6710 JMP 3W
443 6726 JMP 3B
444 6222 JMP 1T [TAPE NOT OK
445 0062 SET i 2
446 6777 6777
447 6523 JMP 3A [WA FULL
450 4151 STC 1G
451 6015 JMP 15

[ WQ FULL-FIX BPL AND BQ
452 0055 #3H SET 15
453 0000 0
454 1020 LDA i
455 7377 -400
456 2003 ADD 3
457 4003 STC 3
460 2524 ADD 3A+1
461 1045 STA 5
462 0225 XSK i 5
463 0076 SET i 16 [ WQ TO BQ [ CONSTANT
464 2777 2777
465 0074 SET i 14
466 2377 2377
467 0072 SET i 12
470 7377 -400
471 1036 LDA i 16
472 1074 STA i 14
473 0232 XSK i 12
474 6471 JMP P-3
475 1000 LDA
476 0005 5
477 1460 SAE i
500 2371 6E
501 6015 JMP 15
502 1020 LDA i [ CONTROL TABLE FULL

```

P CONT  
503 6222 JMP 1T [MAKE TAPE ALWAYS NOT OK  
504 4576 STC 3L+7  
505 0065 SET i 5  
506 2237 6D  
507 6015 JMP 15  
[CHECK CQ EMPTY  
510 0055 #3E SET 15  
511 0000 0  
512 1000 LDA  
513 0004 4  
514 0450 AZE  
515 6000 JMP 0  
516 6737 JMP 3X  
517 6745 JMP 3C  
520 0064 SET i 4  
521 7377 7377 [FIX PFA  
522 6015 JMP 15  
[CHECK CONTINUATION  
523 1020 #3A LDA i  
524 0011 CURRENT LN  
525 1460 SAE i  
526 0000 MAXIMUM LN  
527 0220 XSK i 0  
530 1020 LDA i  
531 0000 BIGGEST BLOCK USED IN WA  
532 6000 JMP 0  
[FIX BNS  
533 0055 SET 15  
534 0000 0  
535 1020 LDA i  
536 0000 #3F BQBN SAVED  
537 1440 SAE  
540 0735 3B+7  
541 6543 JMP P+2  
542 6614 JMP 3V-4  
543 1040 STA  
544 0735 3B+7  
545 4721 STC 3W+11  
546 6734 JMP 3B+6 [RDC BQ  
547 2735 ADD 3B+7  
550 6607 JMP 3V-11 [RDC CQ  
[CQ TO WQ  
551 1324 #3J LDH i 4  
552 1362 STH i 2  
553 1420 SHD i  
554 1200 1200  
555 0220 XSK i 0  
556 6000 JMP 0  
[EOL FIXES  
557 1020 #3K LDA i  
560 0001 1  
561 2524 ADD 3A+1  
562 4524 STC 3A+1  
563 0043 SET 3  
564 0002 2  
565 2202 ADD 1K+4

```

P CONT
566 6000    JMP 0
              [MAKE TAPE OK
567 0055 #3L SET 15
570 0000    0
571 0044    SET 4
572 0002    2
573 1020    LDA i
574 7777    7777
575 1364    STH i 4
576 4227    STC 1T+5
577 2524    ADD 3A+1
600 1045    STA 5
601 1020    LDA i
602 0724    WRC i 7B
603 6712    JMP 3W+2
604 2735    ADD 3B+7
605 1060    STA i
606 0000    BQBN SAVED
607 1620    BSE i
610 2000    2000
611 4746    STC 3C+1
612 6737    JMP 3X
613 6745    JMP 3C
614 1020    LDA i
615 0400    400
616 2002    ADD 2
617 4004    STC 4
620 1020 #3V LDA i
621 6777    6777
622 4215    STC 1L+3
623 6447    JMP 3G+15
              [CHECK WQ EMPTY
624 0055 #3M SET 15
625 0000    0
626 1020    LDA i
627 6777    6777
630 1440    SAE
631 0002    2
632 6000    JMP 0
633 0243    ROL 3
634 6730    JMP 3B+2
635 6734    JMP 3B+6 [RDC BQ
636 2745    ADD 3C
637 6712    JMP#3W+2
640 0062    SET i 2
641 7377    7377
642 2005    ADD 5
643 1460    SAE i [CONTROL TABLE NOT EMPTY
644 2237    6D
645 2202    ADD 1K+4 [-1
646 4005    STC 5
647 6447    JMP 3G+15
              [LOWER PSA, PFA
650 1020 #3N LDA i
651 3777    -4000
652 2004    ADD 4

```

P CONT

653 4004 STC 4  
 654 1020 LDA i  
 655 3777 -4000  
 656 2002 ADD 2  
 657 4002 STC 2  
 660 1302 LDH 2  
 661 1420 SHD i  
 662 1200 1200  
 663 0220 XSK i 0  
 664 6000 JMP 0

[DECODE META

665 0056 #4U SET 16 [CONSTANT  
 666 0000 0  
 667 0011 CLR  
 670 4705 STC 4T  
 671 1326 LDH i 6  
 672 1420 SHD i  
 673 1400 1400  
 674 6671 JMP P-3  
 675 2234 ADD 1M+2  
 676 0471 APO i  
 677 6704 JMP 4T-1  
 700 1306 LDH 6  
 701 2705 ADD 4T  
 702 0243 ROL 3  
 703 6670 JMP 4U+3  
 704 1020 LDA i  
 705 0000 #4T NUM TO MOVE  
 706 0303 ROR 3  
 707 6016 JMP 16

[TAPE SRS FOR STRING SLIDE  
 [WQ WRC OR RDC, FWD OR BWD

710 1020 #3W LDA i  
 711 0704 WRC 7B  
 712 4720 STC P+6  
 713 1020 LDA i  
 714 1001 1001  
 715 1140 ADM  
 716 0721 P+3  
 717 4531 STC 3A+6 [WA BN  
 720 0340 TAPE INSTR  
 721 0006 BN-Q6  
 722 1000 LDA  
 723 0735 3B+7  
 724 4721 STC P-3  
 725 6000 JMP 0

[BQ RDC,FWD OR BWD

726 1020 #3B LDA i  
 727 0001 1  
 730 1140 ADM  
 731 0735 P+4  
 732 4721 STC 3W+11  
 733 6000 JMP 0  
 734 0720 RDC i 7B  
 735 0005 BN-Q5  
 736 6000 JMP 0

\* CONT

[CQ FIX

737 1020 #3X LDA i  
 740 0001 1  
 741 1140 ADM  
 742 0746 3C+1  
 743 4751 STC 3D  
 744 6000 JMP 0

[CQ RDC FWD

745 0700 #3C RDC 7B  
 746 0007 BN-Q7  
 747 6000 JMP 0

[CQ WRC BWD

750 0704 WRC 7B  
 751 0007 #3D BN-Q7  
 752 6000 JMP 0

[META EXIT

753 0077 SET i 17  
 754 6073 JMP 1C-4 [FOR EXIT  
 755 0041 #2X SET 1  
 756 0000 0  
 757 6654 JMP 3N+4  
 760 6176 JMP 1K  
 761 1520 SRO i  
 762 0000 0  
 763 6001 JMP 1  
 764 1020 LDA i  
 765 7777 -0  
 766 4762 STC P-4  
 767 0076 SET i 16  
 770 7300 717D  
 771 0725 WCG i 7E  
 772 7300 717D  
 773 6001 JMP 1  
 B1000

[ADD MANUSCRIPT

1000 7407 #2M JMP 2D  
 1001 7003 JMP P+2  
 1002 7006 JMP P+4 [NAME,UNIT  
 1003 1000 LDA  
 1004 2372 6E+1  
 1005 7501 JMP 2U+3  
 1006 0720 RDC i 7E  
 1007 3324 317D+24  
 1010 7403 JMP 1403  
 1011 0700 RDC 7E  
 1012 3303 317D+3  
 1013 6077 JMP 1C

[LOAD BINARY

1014 7407 #2K JMP 2D  
 1015 0016 NOP  
 1016 7572 JMP 2E  
 1017 0720 RDC i 7E  
 1020 3324 317D+24  
 1021 7400 JMP 1400

[DISPLAY

[ONCE PER ENTRY

P CONT

```

1022 0057 #5A SET 17
1023 0000 0
1024 1020 #5B LDA i
1025 0000 LINES-FRAME
1026 0017 COM
1027 4014 STC 14
1030 2524 ADD 3A+1
1031 5240 STC 5C+3
1032 0050 SET 10
1033 0002 2
1034 2002 ADD 2
1035 1120 ADA i
1036 3542 -235-4000
1037 5051 STC 5D
1040 1310 LDH 10
1041 1420 SHD i
1042 1200 1200
1043 7235 JMP 5C
1044 1020 LDA i
1045 3777 -4000
1046 1140 ADM
1047 0010 10
1050 1460 SAE i
1051 0000 #5D NO MATTER
1052 7040 JMP 5D-11
1053 1020 LDA i
1054 7776 -1
1055 3240 ADD 5C+3
1056 0241 ROL 1
1057 5063 STC 5E+3
    [PRESET-ONCE PER FRAME
1060 0054 #5E SET 14
1061 0010 10
1062 1020 LDA i
1063 0137 LN-1 FOR DIS
1064 5252 STC 5K+1
1065 1020 LDA i
1066 0000 VERT COOR
1067 5172 STC 5M+3
    [CONCE PER LINE
1070 7261 #5F JMP 5V [READ KNOB
1071 1460 SAE i
1072 0007 KNOB 7 [LINES|FRAME
1073 6264 JMP 5L
1074 0435 KST i
1075 6017 JMP 17
    [DISPLAY LN
1076 0061 #5H SET i 1
1077 1013 1013
1100 1020 LDA i
1101 0002 2
1102 3252 ADD 5K+1
1103 5252 STC 5K+1
1104 7251 JMP 5K
1105 0450 AZE
1106 7115 JMP 5J

```

P CONT

1107 1120 ADA i  
 1110 0024 24  
 1111 2001 ADD 1  
 1112 4001 STC 1  
 1113 7246 JMP SK-3  
 1114 7105 JMP P-7  
 1115 7166 #5J JMP SZ+1  
 1116 7246 JMP SK-3  
 1117 7115 JMP SJ

## [FIRST CHARACTER

1120 0061 #5N SET i 1  
 1121 1157 1157  
 1122 7222 JMP 5X  
 1123 1334 LDH i 14  
 1124 1420 SHD i  
 1125 2200 2200  
 1126 7137 JMP SP  
 1127 1420 SHD i  
 1130 6600 6600  
 1131 7137 JMP SP  
 1132 1420 SHD i  
 1133 5600 S600  
 1134 7153 JMP SY  
 1135 0061 SET i 1  
 1136 1277 1277  
 1137 7165 #5P JMP SZ  
 1140 7222 JMP 5X  
 1141 1334 LDH i 14  
 1142 1460 SAE i  
 1143 0012 12  
 1144 7137 JMP SP  
 1145 1020 LDA i  
 1146 1063 1063  
 1147 1440 SAE  
 1150 0001 1  
 1151 7202 JMP SW  
 1152 7070 JMP SF

## [DISPLAY META

1153 1020 #5Y LDA i  
 1154 7440 -337  
 1155 5172 STC 5M+3 [VERT  
 1156 2665 ADD 4U [56  
 1157 7207 JMP 5W+5 [HORIZ  
 1160 7165 JMP SZ  
 1161 0061 SET i 1  
 1162 1103 1103  
 1163 7173 JMP SZ+6  
 1164 7140 JMP SP+1

## [DISPLAY

1165 0241 #5Z ROL 1  
 1166 1120 ADA i  
 1167 2000 #5M 6A-1  
 1170 4012 STC 12  
 1171 1120 ADA i  
 1172 0000 VERT COOR  
 1173 1772 DSC i 12

P CONT

```

1174 1772      DSC i 12
1175 0221      XSK i 1
1176 0221      XSK i 1
1177 0221      XSK i 1
1200 0221      XSK i 1
1201 6000      JMP 0
1202 0011 #5W CLR
1203 1020      LDA i
1204 7740      -37
1205 1200      LAM
1206 1172      5M+3
1207 1560      BCL i
1210 7020      7020
1211 0061      SET i 1
1212 1063      1063
1213 0435      KST i
1214 6017      JMP 17
1215 1460      SAE i
1216 0340      340
1217 6000      JMP 0
1220 5066      STC 5E+6 [MOVE DISPLAY TO TOP OF SCOPE
1221 6000      JMP 0
[CHK END OF FRAME
1222 1000 #5X LDA
1223 0002      2
1224 1440      SAE
1225 0014      14
1226 6000      JMP 0
1227 0061      SET i 1
1230 1753      1753
1231 1020      LDA i
1232 0156      156 [MARKER
1233 7166      JMP 5Z+1
1234 7060      JMP 5E
[EOL-LOWER LN
1235 1020 #5C LDA i
1236 7776      -1
1237 1160      ADM i
1240 0000      LN FOR DIS
1241 0470      AZE i
1242 7056      JMP 5E-2
1243 0234      XSK i 14
1244 6000      JMP 0
1245 7056      JMP 5E-2
[COUNT DIGITS
1246 1520      SRO i
1247 4210      4210
1250 7120      JMP 5J+3
1251 1020 #5K LDA i
1252 0000      LN FOR DIS
1253 0243      ROL 3
1254 1040      STA
1255 1252      SK+1
1256 1560      BCL i
1257 7761      7761
1260 6000      JMP 0

```

P CONT

[KNOB SUBROUTINE

1261 0107 #5V SAM 7  
 1262 0344 SCR 4 [+, -7 OR +, -17  
 1263 2234 ADD 1M+2 [-7, GIVES -0 TO -16 OR -26 TO +10  
 1264 0471 APO 1  
 1265 0011 CLR [TOO BIG  
 1266 2134 ADD 1W+1 [17, GIVES 1 TO 17 OR -7 TO 17  
 1267 0471 APO 1  
 1270 6000 JMP 0 [1 TO 17  
 1271 1020 LDA i  
 1272 0001 1 [TOO SMALL  
 1273 6000 JMP 0

[BACKWARD PAGE

1274 1000 #4Q LDA  
 1275 1025 5B+1  
 1276 2202 ADD 1K+4  
 1277 0450 AZE  
 1300 7303 JMP 4B+2

[BACKWARD LINE

1301 0011 #4B CLR  
 1302 2213 ADD 1P  
 1303 4705 STC 4T  
 1304 6226 JMP 1T+4  
 1305 7307 JMP P+2  
 1306 7311 JMP 4D  
 1307 6523 JMP 3A  
 1310 6567 JMP 3L

[BACKWARD SLIDE

1311 1020 #4D LDA i  
 1312 0001 1  
 1313 1440 SAE  
 1314 0524 3A+1  
 1315 7317 JMP P+2  
 1316 6077 JMP 1C  
 1317 6624 JMP 3M

[CHECK CQ FULL

1320 1020 #4C LDA i  
 1321 7377 7377  
 1322 1440 SAE  
 1323 0004 4  
 1324 7331 JMP 4E  
 1325 6750 JMP 3D-1 [WRC CQ  
 1326 4004 STC 4  
 1327 3336 ADD 4E+5  
 1330 6741 JMP 3X+2  
 1331 1302 #4E LDH 2  
 1332 1344 STH 4  
 1333 6650 JMP 3N  
 1334 7317 JMP 4C-1  
 1335 1020 LDA i  
 1336 7776 -1 [CONSTANT  
 1337 6561 JMP 3K+2  
 1340 1140 ADM  
 1341 0705 4T  
 1342 0450 AZE  
 1343 7311 JMP 4C-7

```

    P CONT
1344 6077    JMP 1C
              [LOCATE-TAPE NOT OK
1345 0452 #4S LZE
1346 6342    JMP 4F+1
1347 0017    COM
1350 4705    STC 4T
1351 6523    JMP 3A
1352 7354    JMP P+2
1353 7311    JMP 4D
1354 6567    JMP 3L
              [FIND REQUEST IN CONTROL BLOCK
1355 0011 #4L CLR
1356 0065    SET i 5
1357 2235    6D-2
1360 2213    ADD 1P
1361 4705    STC 4T
1362 1005    LDA 5
1363 4524    STC 3A+1
1364 1025    LDA i 5
1365 0017    COM
1366 5372    STC P+4
1367 0011    CLR
1370 2320    ADD 4M
1371 1220    LAM i
1372 0000    NO MATTER
1373 0452    LZE
1374 7360    JMP 4L+3
1375 1020 #4G LDA i
1376 3110    5000+7A-6D-1
1377 2005    ADD 5
1400 4536    STC 3F
1401 6533    JMP 3F-3
1402 0062    SET i 2
1403 6777    6777
1404 0064    SET i 4
1405 7377    7377
1406 6344    JMP 4F+3
              [META PARAMETER DECODE
              [LN-NAME-UNIT
1407 0011 #2D CLR
1410 0072    SET i 12
1411 2371    6E
1412 1052    STA i 12
1413 1072    STA i 12
1414 0017    COM
1415 1072    STA i 12
1416 1072    STA i 12
1417 1072    STA i 12
1420 1072    STA i 12
1421 1072    STA i 12
1422 0041    SET i 1
1423 0000    0
              [LINE NUMBER
1424 0072    SET i 12
1425 2370    6E-1
1426 0077    SET i 17

```

P CONT

1427 7775 -2  
 1430 0054 SET 14  
 1431 0006 6  
 1432 6665 #2F JMP 4U  
 1433 1072 STA i 12  
 1434 1306 LDH 6  
 1435 1420 SHD i  
 1436 1200 1200  
 1437 6001 JMP 1  
 1440 1460 SAE i  
 1441 0063 63 [COMMA  
 1442 7446 JMP P+4  
 1443 0237 XSK i 17  
 1444 7430 JMP 2F-2  
 1445 7452 JMP P+5  
 1446 0011 CLR  
 1447 1052 STA 12  
 1450 0046 SET 6  
 1451 0014 14

[NAME

1452 0072 #2N SET i 12  
 1453 6372 6E+4001  
 1454 0076 SET i 16  
 1455 7766 -11  
 1456 0221 XSK i 1  
 1457 1326 LDH i 6  
 1460 1420 SHD i  
 1461 1400 1400  
 1462 7457 JMP P-3  
 1463 1420 SHD i  
 1464 1200 1200  
 1465 6255 JMP 1N-2  
 1466 1420 SHD i  
 1467 6300 6300  
 1470 7476 JMP 2U  
 1471 1372 STH i 12  
 1472 1326 LDH i 6  
 1473 0236 XSK i 16  
 1474 7463 JMP P-11  
 1475 6255 JMP 1N-2 [ERROR

[UNIT

1476 6665 #2U JMP 4U  
 1477 0040 SET 0  
 1500 0001 1  
 1501 0243 ROL 3  
 1502 1040 STA  
 1503 2377 6E+6  
 1504 1560 BCL i  
 1505 0050 50  
 1506 0470 AZE i  
 1507 6000 JMP 0  
 1510 6255 JMP 1N-2 [ERROR

[TAPE FIX

1511 0077 SET i 17  
 1512 6073 JMP 1C-4  
 1513 0041 #2T SET 1

```

P CONT
1514 0000      0
1515 6654      JMP 3N+4
1516 6176      JMP 1K
1517 6226      JMP 1T+4
1520 7522      JMP P+2
1521 6761      JMP 2X+4
1522 1020      LDA i
1523 7776      7776
1524 4705      STC 4T
1525 6353      JMP 4H
1526 6567      JMP 3L
1527 6764      JMP 2X+7
      [SM,CM,CB SR
1530 1000 #2Y LDA
1531 0000      0
1532 5540      STC P+6
1533 7407      JMP 2D
1534 6255      JMP 1N-2 [ERROR
1535 6753      JMP 2X-2
1536 0721      RCG i 7E
1537 1320      117D+20
1540 0000      RETURN
      [CV,SM SR
1541 1020 #4Z LDA i
1542 0001      1
1543 1440      SAE
1544 0526      3A+3
1545 6000      JMP 0
1546 6255      JMP 1N-2 [ERROR
      [LIST, PRINT MANUSCRIPT SR
1547 0051 #2W SET 11
1550 0000      0
1551 7407      JMP 2D
1552 7555      JMP P+3
1553 6753      JMP 2X-2
1554 6011      JMP 11
1555 7511      JMP 2T-2 [WA MS
1556 0231      XSK i 11
1557 6011      JMP 11
      [DISPLAY INDEX, COPY FILE, PRINT INDEX SR
1560 0051 #2Z SET 11
1561 0000      0
1562 7407      JMP 2D
1563 7565      JMP P+2
1564 6255      JMP 1N-2 [ERROR
1565 1000      LDA
1566 2371      6E
1567 7501      JMP 2U+3
1570 6753      JMP 2X-2
1571 6011      JMP 11
      [EXIT, LOAD BINARY SR
1572 0051 #2E SET 11
1573 0000      0
1574 1020      LDA i
1575 1020      LDA i
1576 4020      STC 20

```

P CONT  
1577 4762 STC 2X+5  
1600 0077 SET i 17  
1601 6020 JMP 20  
1602 7513 JMP 2T  
1603 6011 JMP 11  
[COPY  
1604 7511 #2P JMP 2T-2  
1605 0720 RDC i 7E  
1606 0336 7D+36  
1607 6017 JMP 17  
[CONVERT  
1610 7541 #2C JMP 4Z  
1611 7511 JMP 2T-2  
1612 0721 RCG i 7E  
1613 2330 217D+30  
1614 7002 JMP 1002  
[SAVE MANUSCRIPT  
1615 7541 #2S JMP 4Z  
1616 7407 JMP 2D  
1617 6255 JMP 1N-2 [ERROR  
1620 7511 JMP 2T-2  
1621 0720 RDC i 7E  
1622 0320 7D+20  
1623 2606 ADD 3V-12 [LAST BN  
1624 6023 JMP 23  
[SAVE BINARY  
1625 7530 #2B JMP 2Y  
1626 6022 JMP 22  
[COPY MANUSCRIPT  
1627 7530 #2L JMP 2Y  
1630 6020 JMP 20  
[COPY BINARY  
1631 7530 JMP 2Y  
1632 6021 JMP 21  
[COPY FILE  
1633 7560 JMP 2Z  
1634 0720 RDC i 7E  
1635 0314 7D+14  
1636 6017 JMP 17  
[LIST  
1637 7547 #2A JMP 2W  
1640 7647 JMP 2I-3  
1641 7541 JMP 4Z  
1642 0721 RCG i 7E  
1643 2330 217D+30  
1644 0720 RDC i 7E  
1645 1333 117D+33  
1646 7000 JMP 1000  
1647 0721 RCG i 7E [FILE MS  
1650 1320 117D+20  
1651 6024 JMP 24  
[PRINT MANUSCRIPT  
1652 7547 #2I JMP 2W  
1653 7660 JMP P+5  
1654 7541 JMP 4Z  
1655 0720 RDC i 7E

P CONT  
 1656 2322 217D+22  
 1657 7000 JMP 1000  
 1660 0721 RCG i 7E  
 1661 2320 217D+20 [FILE MS  
 1662 6025 JMP 25  
 [DISPLAY INDEX  
 1663 7560 #2G JMP 2Z  
 1664 0720 RDC i 7E  
 1665 0325 7D+25  
 1666 6017 JMP 17  
 [PRINT INDEX  
 1667 7560 #2Q JMP 2Z  
 1670 0720 RDC i 7E  
 1671 0325 7D+25  
 1672 6020 JMP 20  
 [EXIT  
 1673 7572 #2R JMP 2E  
 1674 0703 MTB 7E  
 1675 0000 0  
 1676 0000 HLT  
 1677 0723 MTB i 7E  
 1700 0000 0  
 1701 0000 HLT  
 1702 6020 JMP 20  
 [FREE  
 1703 1326 #2J LDH i 6 [2ND CHAR  
 1704 5711 STC P+5  
 1705 7511 JMP 2T-2  
 1706 0700 RDC 7E  
 1707 0317 7D+17  
 1710 1020 LDA i  
 1711 2552 2ND CHARACTER  
 1712 6020 JMP 20  
 [DISPLAY SYMBOL TABLE  
 1713 6753 #2V JMP 2X-2  
 1714 0721 RCG i 7E  
 1715 1310 117D+10  
 1716 6014 JMP 14  
 [1ST CASE  
 1717 7022 #1Y JMP 5A  
 1720 0515 KBD  
 1721 0077 SET i 17  
 1722 5767 1H+4000  
 1723 1437 SHD i 17  
 1724 6077 JMP 1C [DELETE  
 1725 1437 SHD i 17  
 1726 7301 JMP 4B [W  
 1727 1437 SHD i 17  
 1730 6341 JMP 4F [I  
 1731 1437 SHD i 17  
 1732 7274 JMP 4Q [Q  
 1733 0470 AZE i  
 1734 6334 JMP 4P [O  
 1735 7761 JMP 2H-1  
 1736 6077 JMP 1C [ILLEGAL  
 [LATER CHARACTERS

P CONT

1737 7022 #1F JMP 5A  
 1740 0515 KBD  
 1741 0077 SET i 17  
 1742 5766 1H-4000  
 1743 1437 SHD i 17  
 1744 7752 JMP 1Z [CASE  
 1745 1437 SHD i 17  
 1746 6124 JMP 1E [EOL  
 1747 1437 SHD i 17  
 1750 6174 JMP 1K-2 [DELETE  
 1751 6113 JMP 1R  
 [LATER CASE  
 1752 7022 #1Z JMP 5A  
 1753 0515 KBD  
 1754 1420 SHD i  
 1755 1300 1300  
 1756 6174 JMP 1K-2  
 1757 7761 JMP 2H-1  
 1760 7737 JMP 1F [ILLEGAL  
 [CHECK CASE  
 1761 1120 ADA i  
 1762 7745 #2H -32  
 1763 0471 APO i  
 1764 6000 JMP 0 [ILLEGAL  
 1765 2463 ADD 3H+11 [76  
 1766 6113 JMP 1R  
 [CHARACTER TABLE  
 1767 2312 #1H 2312  
 1770 1352 1352  
 1771 0144 144  
 [GRID PATTERNS  
 #2001  
 2001 4136 #6A 4136  
 2002 3641 3641  
 2003 2101 2101  
 2004 0177 0177  
 2005 4523 4523  
 2006 2151 2151  
 2007 4122 4122  
 2010 2651 2651  
 2011 2414 2414  
 2012 0477 0477  
 2013 5172 #6C 5172  
 2014 0651 0651  
 2015 1506 1506  
 2016 4225 4225  
 2017 4443 4443  
 2020 6050 6050  
 2021 5126 5126  
 2022 2651 2651  
 2023 5122 5122 69  
 2024 3651 3651  
 2025 4020 4020  
 2026 2055 2055  
 2027 4020 4020 [DEL  
 2030 2055 2055

P CONT  
2031 0000 0000  
2032 0000 0000  
2033 0101 0101  
2034 0126 0126  
2035 3700 3700  
2036 3424 3424  
2037 0404 0404  
2040 0404 0404  
2041 0404 0404  
2042 0437 0437  
2043 0000 0000  
2044 0077 0077  
2045 3614 3614  
2046 1436 1436  
2047 4020 4020 [CASE  
2050 2055 2055  
2051 4477 4477  
2052 7744 7744  
2053 5177 #6B 5177  
2054 2651 2651  
2055 4136 4136  
2056 2241 2241  
2057 4177 4177  
2060 3641 3641  
2061 4577 4577  
2062 4145 4145  
2063 4477 4477  
2064 4044 4044  
2065 4136 #6G 4136  
2066 2645 2645  
2067 1077 1077  
2070 7710 7710  
2071 7741 7741  
2072 0041 0041  
2073 4142 4142  
2074 4076 4076  
2075 1077 1077  
2076 4324 4324  
2077 0177 #6L 0177  
2100 0301 0301  
2101 3077 3077  
2102 7730 7730  
2103 3077 3077  
2104 7706 7706  
2105 4177 4177  
2106 7741 7741  
2107 4477 4477  
2110 3044 3044  
2111 4276 #6Q 4276  
2112 0376 0376  
2113 4477 4477  
2114 3146 3146  
2115 5121 5121  
2116 4651 4651  
2117 4040 4040  
2120 4077 4077

P CONT

2121	0177	0177
2122	7701	7701
2123	0176 #6V	0176
2124	7402	7402
2125	0677	0677
2126	7701	7701
2127	1463	1463
2130	6314	6314
2131	0770	0770
2132	7007	7007
2133	4543	4543 [Z
2134	6151	6151
2135	0404	0404 [META
2136	0404	0404
2137	2504	2504
2140	0416	0416
2141	4020	4020 [?
2142	2055	2055 [CASE,SPACE
2143	1212 #6F	1212
2144	1212	1212
2145	0107	0107
2146	0107	0107
2147	0500	0500
2150	0006	0006
2151	0001	0001
2152	0000	0000
2153	4577	4577
2154	7745	7745
2155	4177	4177
2156	0000	0000
2157	0101	0101 [^
2160	0101	0101 [CASE,CASE
2161	0070	0070 [ <sup>1</sup>
2162	0070	0070 [CASE,A
2163	0700	0700 [ <sup>4</sup>
2164	0700	0700 [CASE,B
2165	2410	2410 [ <sup>&lt;</sup>
2166	0042	0042 [CASE,C
2167	4200	4200 [ <sup>&gt;</sup>
2170	1024	1024 [CASE,D
2171	0000	0000 [ <sup>1</sup>
2172	7741	7741 [CASE,E
2173	2050	2050 [ <sup>*</sup>
2174	0050	0050 [CASE,F
2175	2200	2200 [ <sup>:</sup>
2176	0000	0000 [CASE,G
[META COMMANDS		
2177	2440 #6Z	2440 [AM
2200	7000	JMP 2M
2201	4640	4640 [SM
2202	7615	JMP 2S
2203	2651	2651 [CV
2204	7610	JMP 2C
2205	2643	2643 [CP
2206	7604	JMP 2P
2207	3053	3053 [EX

MSDISPLAY,27 LN=2321

LAP6

P CONT  
2210 7673 JMP 2R  
2211 3734 3734 [LI  
2212 7637 JMP 2A  
2213 4625 4625 [SB  
2214 7625 JMP 2B  
2215 2753 2753 [DX  
2216 7663 JMP 2G  
2217 2746 2746 [DS  
2220 7713 JMP 2V  
2221 2640 2640 [CM  
2222 7627 JMP 2L  
2223 2625 2625 [CB  
2224 7631 JMP 2L+2  
2225 2631 2631 [CF  
2226 7633 JMP 2L+4  
2227 3742 3742 [LO  
2230 7014 JMP 2K  
2231 4340 4340 [PM  
2232 7652 JMP 2I  
2233 4353 4353 [PX  
2234 7667 #6Y JMP 2Q

[CONTROL TABLE

2235 0000 0 [MUST HAVE 2 ZEROS HERE  
2236 0000 0  
2237 0000 #6D

[META PARAMETERS

@2371

2371 0000 #6E 0  
2372 0000 0  
2373 0000 0  
2374 0000 0  
2375 0000 0  
2376 0000 0  
2377 0000 0  
7A=350 [WA  
7B=0 [WA UNIT  
7C=430 [FILE  
7D=300 [LAP6  
7E=0 [LAP6 UNIT  
7G=426 [INDEX

[LAP6 MANUSCRIPT INPUT AND DISPLAY  
[ADD ADDMS LO HERE

ADDMs LO,0

LAP6

VALUE	LINE	VALUE	LINE	VALUE	LINE
1A	0030	17	3T	0426	441
1B	0067	57	3V	0620	644
1C	0077	71	3W	0710	741
1D	0155	153	3X	0737	772
1E	0124	120	4A	0273	301
1F	1737	2051	4B	1301	1354
1G	0151	146	4C	1320	1375
1H	1767	2104	4D	1311	1365
1K	0176	175	4E	1331	1406
1L	0212	212	4F	0341	352
1M	0232	234	4G	1375	1454
1N	0257	261	4H	0353	365
1P	0213	213	4J	0364	376
1R	0113	106	4L	1355	1434
1T	0222	223	4M	0320	326
1W	0133	130	4P	0334	344
1Y	1717	2030	4Q	1274	1346
1Z	1752	2065	4S	1345	1423
2A	1637	1741	4T	0705	734
2B	1625	1723	4U	0665	714
2C	1610	1704	4Z	1541	1630
2D	1407	1470	5A	1022	1061
2E	1572	1664	5B	1024	1063
2F	1432	1514	5C	1235	1304
2G	1663	1767	5D	1051	1110
2H	1762	2076	5E	1060	1120
2I	1652	1755	5F	1070	1131
2J	1703	2012	5H	1076	1140
2K	1014	1051	5J	1115	1157
2L	1627	1726	5K	1251	1321
2M	1000	1034	5L	0264	270
2N	1452	1535	5M	1167	1234
2P	1604	1677	5N	1120	1163
2Q	1667	1774	5P	1137	1202
2R	1673	2001	5V	1261	1332
2S	1615	1712	5W	1202	1247
2T	1513	1600	5X	1222	1270
2U	1476	1562	5Y	1153	1217
2V	1713	2023	5Z	1165	1232
2W	1547	1637	6A	2001	2111
2X	0755	1013	6B	2053	2163
2Y	1530	1616	6C	2013	2123
2Z	1560	1651	6D	2237	2351
3A	0523	543	6E	2371	2354
3B	0726	760	6F	2143	2253
3C	0745	1001	6G	2065	2175
3D	0751	1006	6L	2077	2207
3E	0510	527	6Q	2111	2221
3F	0536	557	6V	2123	2233
3G	0432	447	6Y	2234	2345
3H	0452	470	6Z	2177	2310
3J	0551	573	7A	0350	2363
3K	0557	602	7B	0000	2364
3L	0567	613	7C	0430	2365
3M	0624	651	7D	0300	2366
3N	0650	676	7E	0000	2367
3P	0374	407	7G	0426	2370
3R	0405	420	8A	1524	2535
3S	0416	431	8B	1536	2550

P CONT

[LAP6 ADD MANUSCRIPT AND LOAD BINARY  
 [BLOCK 324  
 [QUARTER 3  
 [CONVERT WITH MSDISPLY  
 B1400  
 1400 7645 JMP 8R [LOAD BINARY  
 1401 5637 STC 8K  
 1402 7621 JMP 8D [NO. FOR CF  
 [ADD MANUSCRIPT  
 1403 6554 JMP 3N+4  
 1404 6176 JMP 1K  
 1405 7564 JMP 8L  
 1406 7417 JMP 8E [MS BY BN  
 [NAME MATCH  
 1407 1030 #8C LDA i 10  
 1410 1620 BSE i  
 1411 2000 2000  
 1412 5525 STC 8A+1  
 1413 1030 LDA i 10  
 1414 0451 APO  
 1415 7621 JMP 8D [NO MS  
 1416 7424 JMP 8E+5  
 [BLOCK NUMBER REQUEST  
 1417 1000 #8E LDA  
 1420 2371 6E  
 1421 1620 BSE i  
 1422 2000 2000  
 1423 5525 STC 8A+1  
 1424 1000 #8U LDA  
 1425 1524 8A  
 1426 1460 SAE i  
 1427 0700 RDC 7E  
 1430 7437 JMP 8F-5  
 1431 3741 ADD 8N-3 [SAME UNIT, FIX i BIT  
 1432 5524 STC 8A  
 1433 2414 ADD 3S-2 [NOP  
 1434 5527 STC 8A+3  
 1435 3671 ADD 8S-1 [JMP 8K+3  
 1436 5443 STC 8F-1  
 1437 7522 JMP 8A-2  
 1440 1030 LDA i 10  
 1441 1130 ADA i 10  
 1442 0450 AZE  
 1443 7621 JMP 8D  
 1444 1330 #8F LDH i 10  
 1445 1420 SHD i  
 1446 7700 7700  
 1447 7511 JMP 8J  
 1450 1362 STH i 2  
 1451 1460 SAE i  
 1452 0012 12  
 1453 7460 JMP 8H  
 [EOL  
 1454 6557 #8G JMP 3K  
 1455 0017 COM

```

P CONT
1456 2526      ADD 3A+3
1457 4526      STC 3A+3
      [CHECK Q2 EMPTY
1460 7515 #8H JMP 8A-7
1461 6432      JMP 3G
1462 6452      JMP 3H
1463 6212      JMP 1L
1464 6374      JMP 3P
1465 1000      LDA
1466 0003      3
1467 1440      SAE
1470 0002      2
1471 7444      JMP 8F
1472 1000      LDA
1473 0526      3A+3
1474 0470      AZE i
1475 7503      JMP P+6 [TOO MANY LINES
1476 1000      LDA
1477 0151      1G [MAX BLOCK USED
1500 1460      SAE i
1501 6425      617G-1 [LAST BLOCK?
1502 7444      JMP 8F [ALL OK
1503 1020      LDA i
1504 7776      -1
1505 6561      JMP 3K+2
1506 2526      ADD 3A+3
1507 4526      STC 3A+3
1510 6176      JMP 1K
      [FINISHED ADD MS
1511 6222 #8J JMP 1T [TAPE NOT OK
1512 6523      JMP 3A
1513 6567      JMP 3L
1514 7637      JMP 8K
      [COMMON SUBROUTINES
      [READ INDEX
1515 1000      LDA
1516 0010      10
1517 1460      SAE i
1520 5377      5377
1521 6000      JMP 0
1522 0041      SET 1
1523 0000      0
1524 0700 #8A RDC
1525 2426      217G [INDEX
1526 0453      IBZ
1527 7526      JMP P-1
1530 0070      SET i 10
1531 4777      4777
1532 2213      ADD 1P
1533 3525      ADD 8A+1
1534 5525      STC 8A+1
1535 6001      JMP 1
      [NAME MATCH
1536 0041 #8B SET 1
1537 0000      0
1540 0072      SET i 12

```

? CONT

1541 7773 -4  
 1542 0073 SET i 13  
 1543 2372 6E+1  
 1544 1000 LDA  
 1545 0010 10  
 1546 1620 BSE i  
 1547 0007 7  
 1550 1460 SAE i  
 1551 5377 5377  
 1552 7555 JMP p+3  
 1553 0221 XSK i i  
 1554 6001 JMP 1  
 1555 4010 STC 10  
 1556 1030 LDA i 10  
 1557 1473 SAE i 13  
 1560 7540 JMP 8B+2  
 1561 0232 XSK i 12  
 1562 7556 JMP p-4  
 1563 6001 JMP 1 [NAME MATCH

[SUBROUTINE CONTROL]

1564 0057 #8L SET 17  
 1565 0000 0  
 1566 1000 LDA  
 1567 2377 6E+6 [u  
 1570 3524 ADD 8A [RDC  
 1571 5524 STC 8A  
 1572 1300 LDH  
 1573 2373 6E+2  
 1574 1420 SHD i  
 1575 7700 7700  
 1576 6000 JMP 0 [NAME NOT REQUESTED  
 1577 0237 XSK i 17  
 1600 1000 LDA  
 1601 2377 6E+6  
 1602 0246 ROL 6 [UNIT TO Z  
 1603 5760 STC 8T  
 1604 3524 ADD 8A [RDC u  
 1605 3741 ADD 8N-3 [20  
 1606 5744 STC 8N [RDC i u  
 1607 7522 JMP 8A-2 [READ INDEX  
 1610 1030 LDA i 10  
 1611 1460 SAE i  
 1612 5757 5757  
 1613 7621 JMP 8D  
 1614 7536 JMP 8B  
 1615 6017 JMP 17 [NAME FOUND  
 1616 7522 JMP 8A-2  
 1617 7536 JMP 8B  
 1620 6017 JMP 17

[NO MS OR BINARY  
[NO NAME MATCH

1621 0011 #8D CLR  
 1622 0061 SET i 1  
 1623 0340 340  
 1624 0072 SET i 12  
 1625 2103 6A+102 [N

```

P CONT
1626 1752 DSC 12
1627 1772 DSC i 12
1630 0061 SET i 1
1631 0364 364
1632 1772 DSC i 12
1633 1772 DSC i 12
1634 0415 KST
1635 7622 JMP 8D+1
1636 0515 KBD
1637 0720 #8K RDC i 7E [RETURN
1640 2302 217D+2
1641 7011 JMP 2M+11
1642 0703 MTB 7E
1643 0000 O [STOP TAPE
1644 7621 JMP 8D
[LOAD BINARY
1645 7564 #8R JMP 8L
1646 7660 JMP 8M [BIN IN WORKING AREA
1647 1030 LDA i 10 [ENAME MATCH
1650 1030 LDA i 10
1651 1030 LDA i 10 [QNIBN
1652 5745 STC 8N+1
1653 1030 LDA i 10 [N BLKS
1654 0451 APO
1655 7621 JMP 8D
1656 0017 COM
1657 7672 JMP 8S
[BIN IN WORKING AREA
1660 0720 #8M RDC i 7E
1661 2330 217D+30
1662 3010 ADD 1010 [1ST BN
1663 3012 ADD 1012 [QN
1664 1120 ADA i
1665 0340 7D+40
1666 5745 STC 8N+1
1667 3011 ADD 1011 [-N BLKS
1670 0470 AZE i
1671 7642 JMP 8K+3 [NO BINARY
1672 4010 #8S STC 10
1673 3744 ADD 8N
1674 3777 ADD 1777
1675 5777 STC 1777 [MTB
1676 3745 ADD 8N+1 [QNIBN
1677 3747 ADD 8N+3 [1001
1700 0230 XSK i 10
1701 7677 JMP P-2
1702 5755 STC 8N+11 [LAST QNIBN
1703 3745 ADD 8N+1
1704 1560 BCL i
1705 7000 7000
1706 3760 ADD 8T
1707 0243 ROL 3
1710 5760 STC 8T [BN TO Z
[CLEAR MEMORY
1711 0061 #8P SET i 1
1712 3777 3777

```

P CONT

1713 0011 CLR  
 1714 1061 STA i 1  
 1715 0201 XSK 1  
 1716 7714 JMP P-2  
 1717 0061 SET i 1  
 1720 0001 1  
 1721 1061 STA i 1 [LAST REGISTER CLEARED  
 1722 1440 SAE  
 1723 1721 P-2  
 1724 7721 JMP P-3  
 1725 4001 STC 1 [CLEAR 1  
 [READ BINARY  
 1726 3745 ADD 8N+1  
 [CHECK BIN QN  
 1727 1560 #8Q BCL i  
 1730 0777 777  
 1731 1460 SAE i  
 1732 3000 3000  
 1733 7744 JMP 8N  
 1734 1000 LDA  
 1735 1745 8N+1  
 1736 5774 STC 8Z+1  
 1737 3744 ADD 8N  
 1740 1560 BCL i  
 1741 0020 20 [CONSTANT  
 1742 5777 STC 1777 [RDC u  
 1743 7746 JMP 8N+2  
 1744 0720 #8N RDC i 7E  
 1745 0000 FIRST QN|BN  
 1746 1020 LDA i  
 1747 1001 1001  
 1750 1200 LAM  
 1751 1745 P-4  
 1752 0452 LZE  
 1753 7757 JMP P+4 [Q7 READ  
 1754 1460 SAE i  
 1755 0001 LAST QN|BN+1  
 1756 7727 JMP 8Q  
 1757 7757 JMP 8V  
 B1757  
 [CLEAR Q3  
 1757 1020 #8V LDA i  
 1760 0000 #8T 7E1 [BN TIMES 8  
 1761 0354 SCR 14 [TO Z  
 1762 4000 STC 0  
 1763 2001 ADD 1 [SAVE 1  
 1764 5776 STC 8Z+3  
 1765 0061 SET i 1  
 1766 1721 8Q-6  
 1767 1061 STA i 1 [LAST REGISTER CLEARED  
 1770 1440 SAE  
 1771 1767 P-2  
 1772 7767 JMP P-3  
 [FINISHED LOAD BIN  
 1773 0060 #8Z SET i  
 1774 0000 0 [BN

ADDM5 LO,6 LN=3023

LAP6

P CONT

1775 0061 SET i 1

1776 0000 0 [RESET 1

1777 7762 -15 [MTB OR RDC

[LAP6 ADD MANUSCRIPT AND LOAD BINARY

	VALUE	LINE
1A	0171	174
1B	0617	645
1C	0640	667
1D	0662	712
1E	0654	703
1F	0104	102
1G	0570	615
1H	0367	403
1J	0716	751
1K	0377	414
1L	0455	476
1M	0103	101
1N	0151	152
1P	0143	143
1Q	1412	1022
1R	0036	30
1S	0725	761
1T	0700	731
1U	0551	575
1V	0524	547
1W	0361	374
1X	0431	451
1Y	0417	436
1Z	0407	425
2A	0062	55
2B	0054	47
2C	0065	61
2D	1447	1057
2E	1465	1075
2F	1474	1104
2G	1504	1115
2H	1524	1136
2J	1551	1164
2K	0502	523
2L	0207	213
2M	0026	20
2N	0044	36
2P	1400	1010
2Q	0450	470
2R	0073	70
2S	0117	116
2T	1666	1303
2V	1652	1267
2W	1616	1232
2X	0134	134
2Y	1603	1217
2Z	1631	1246
3A	0256	265
3B	0322	333
3C	0233	240
3D	0312	322
3E	0230	234
3F	0340	351
3H	0517	541
6A	2001	1322
6E	2371	1317
7A	0350	1313
7B	0000	1314
7C	0430	1316

P CONT

[LAP6 FILE COMMANDS  
 [SM, SB, CM, CB, LI, PM  
 [BLOCKS 320-321, 323  
 [QUARTERS 0,1,3  
 B15  
 15 0701 RCG 7E  
 16 7300 717D  
 17 6151 JMP 1N  
 20 6256 JMP 3A [CM  
 21 6255 JMP 3A-1 [CB  
 22 6233 JMP 3C LSB  
 23 6171 JMP 1A [SM  
 24 6322 JMP 3B [LI  
 25 6312 JMP 3D [PM  
 [TAPE CONTROL  
 26 0042 #2M SET 2  
 27 0104 1F  
 30 0045 SET 5  
 31 0002 2  
 32 0066 SET i 6  
 33 0036 1R [BN  
 34 6065 JMP 2C  
 35 0015 15 [RDC i u  
 36 0350 #1R 7A  
 37 6073 JMP 2R [UP BN  
 40 6043 JMP P+3 [ALL DONE  
 41 0450 AZE [7 DONE?  
 42 6035 JMP 1R-1 [NO  
 43 1020 LDA i [ALL OR 7 DONE  
 44 0703 #2N MTB [MTB u  
 45 6134 JMP 2X [MOTION CHECK  
 [WRITE  
 46 0042 SET 2  
 47 0005 5  
 50 0066 SET i 6  
 51 0054 2B  
 52 6065 JMP 2C  
 53 0000 TAPE WR  
 54 0000 #2B BN  
 55 6073 JMP 2R [UP BN  
 56 6103 JMP 1M [ALL DONE  
 57 0450 AZE  
 60 6053 JMP 2B-1  
 61 1020 LDA i [ALL OR 7 DONE  
 62 0706 #2A WRITE UNIT  
 63 6134 JMP 2X  
 64 6030 JMP 2M+2  
 [SET QUARTER  
 65 0011 #2C CLR  
 66 1106 ADA 6  
 67 1620 BSE i  
 70 1000 1000  
 71 1046 STA 6  
 72 6000 JMP 0  
 [UP BLOCK NUMBER  
 73 1020 #2R LDA i

```

P CONT
74 1001      1001
75 1206      LAM 6
76 1560      BCL i
77 0777      777
100 0222     XSK i 2
101 0220     XSK i 0
102 6000     JMP 0
[CHECK N BLOCKS
103 0062 #1M SET i 2
104 0000 #1F -N BLOCKS
105 0450     CHECK TAPE
106 0000     FILE BN
107 0450     AZE
110 6117     JMP 2S
111 2106     ADD P-3
112 2143     ADD 1P
113 4106     STC P-5
114 0222     XSK i 2
115 6105     JMP 1F+1
116 6015     JMP 15
[CHECK FAIL
117 1000 #2S LDA
120 0106     1M+3
121 4054     STC 2B
122 2002     ADD 2
123 1040     STA
124 0104     1F
125 2036     ADD 1R
126 0470     AZE i
127 0017     COM
130 1560     BCL i
131 7000     7000
132 4036     STC 1R
133 6030     JMP 2M+2
[END OF CHECK
134 0041 #2X SET 1
135 0000     0
136 1400     SHD
137 4142     41P+3
140 6000     JMP 0
141 4142     STC P+1
142 1500     STOP TAPE
143 0001 #1P 1 [CONSTANT
144 0453     IBZ
145 6144     JMP P-1
146 6001     JMP 1
[END OF PROGRAM
147 0703     MTB 7E
150 0000     0
151 0011 #1N CLR
152 0061     SET i 1
153 0340     340
154 1760     DSC i
155 3077     3077
156 1760     DSC i
157 7706     7706

```

```

P CONT
160 0061 SET i 1
161 0364 364
162 1760 DSC i
163 4177 4177
164 1760 DSC i
165 7741 7741
166 0415 KST
167 6152 JMP 1N+1
170 6015 JMP 15
    [SAVE MANUSCRIPT
    [LAST BN IN ACC
171 1120 #1A ADA i
172 2431 -7A-5000+2
173 0017 COM [CONSTANT
174 4104 STC 1F
175 0720 RDC i 7E
176 1321 117D+21
177 0720 RDC i 7E
200 3323 317D+23
201 2143 ADD 1P
202 4450 STC 2Q
    [CHECK PARTIAL SAVE
203 1100 ADA
204 2371 6E
205 0450 AZE
206 7400 JMP 2P
207 1020 #2L LDA i
210 0000 7B
211 6720 JMP 1J+2 [FIX RDC UNIT
212 6725 JMP 1S
213 6407 JMP 1Z
214 6417 JMP 1Y
215 6431 JMP 1X
216 6222 JMP P+4
217 6361 JMP 1W
220 6455 JMP 1L [REPLACE
221 6224 JMP P+3
222 6524 JMP 1V
223 6151 JMP 1N
224 0044 SET 4
225 0002 2 [CONSTANT
226 6551 JMP 1U
227 1620 BSE i
230 0000 #3E 0
231 6700 JMP 1T
232 6026 JMP 2M
    [SAVE BINARY
233 0720 #3C RDC i 7E
234 3330 317D+30 [CV Q0
235 3410 ADD 1410
236 1120 ADA i
237 0340 7D+40
240 4036 STC 1R
241 3412 ADD 1412
242 4230 STC 3E
243 3411 ADD 1411

```

```

P CONT
244 0470      AZE i
245 6147      JMP 1N-2
246 4104      STC 1F
247 1120      ADA i
250 0003      3
251 4450      STC 2Q
252 1120      ADA i
253 0000      7E
254 6211      JMP 2L+2
[COPY BINARY
255 2225      ADD 3E-3 [2
[COPY MANUSCRIPT
256 2143      #3A ADD 1P  [1
257 4450      STC 2Q
260 6725      JMP 1S
261 6407      JMP 1Z
262 6151      JMP 1N
263 6431      JMP 1X
264 6151      JMP 1N
265 6361      JMP 1W
266 6270      JMP P+2
267 6151      JMP 1N
270 0017      COM
271 4104      STC 1F
272 1002      LDA 2
273 1560      BCL i
274 7000      7000
275 4036      STC 1R
276 1002      LDA 2
277 1560      BCL i
300 0777      777
301 4230      STC 3E
302 6716      JMP 1J
303 1000      LDA
304 2377      6E+6
305 1660      BCO i
306 0010      10
307 1040      STA
310 2377      6E+6
311 6212      JMP 2L+3
[PRINT MANUSCRIPT
312 0720      #3D RDC i 7E
313 3335      317D+35
314 1020      LDA i
315 6340      JMP 3F
316 4334      STC 3F-4
317 1020      LDA i
320 7002      JMP 1002
321 4346      STC 3F+6
[LIST-Q0
322 2143      #3B ADD 1P  [1
323 4450      STC 2Q
324 6725      JMP 1S [FIX RCG
325 6407      JMP 1Z [RCG INDEX
326 6151      JMP 1N [NO INDEX
327 6431      JMP 1X [NAME

```

P CONT  
 330 6151 JMP IN [NO NAME  
 331 6361 JMP 1W [ENTRY  
 332 6334 JMP P+2  
 333 6151 JMP IN [NO ENTRY  
 334 0720 RDC i 7E  
 335 2332 217D+32  
 336 0700 RDC 7E  
 337 1333 117D+33  
 340 1002 #3F LDA 2 [BN  
 341 5377 STC 1377  
 342 2062 ADD 2A  
 343 1120 ADA i  
 344 7774 -3 [UNIT  
 345 5376 STC 1376  
 346 0061 SET i 1  
 347 2370 6E-1  
 350 0062 SET i 2  
 351 0770 9J-1  
 352 0063 SET i 3  
 353 7771 -6  
 354 1021 LDA i 1  
 355 1062 STA i 2  
 356 0223 XSK i 3  
 357 6354 JMP P-3  
 360 7001 JMP 1001

## [FILE SUBROUTINES

## [CHECK MS OR BINARY PRESENT

361 0045 #1W SET 5  
 362 0002 2  
 363 1025 LDA i 5  
 364 0451 APO  
 365 0220 XSK i 0  
 366 6000 JMP 0

## [CHECK BOUNDS

367 1000 #1H LDA  
 370 0006 6  
 371 2104 ADD 1F  
 372 0470 AZE i  
 373 0017 COM  
 374 0451 APO  
 375 0220 XSK i 0  
 376 6000 JMP 0

## [FIX ADDRESS

377 1000 #1K LDA  
 400 0002 2  
 401 1620 BSE i  
 402 7007 7007  
 403 4002 STC 2  
 404 0202 XSK 2  
 405 6000 JMP 0  
 406 6001 JMP 1

## [RCG AND CHECK INDEX

407 0000 #1Z TAPE  
 410 1426 117G  
 411 1000 LDA  
 412 3000 3000

P CONT  
413 1420 SHD i  
414 5700 5700  
415 0220 XSK i 0  
416 6000 JMP 0  
[MAKE INDEX  
417 0041 #1Y SET 1  
420 0000 0  
421 0062 SET i 2  
422 2777 2777  
423 1020 LDA i  
424 5757 5757  
425 1062 STA i 2  
426 0202 XSK 2  
427 6425 JMP P-2  
430 6001 JMP 1  
[NAME SEARCH  
431 0041 #1X SET 1  
432 0000 0  
433 0062 SET i 2  
434 3000 3000  
435 0063 SET i 3  
436 7773 -4  
437 0064 SET i 4  
440 2372 6E+1  
441 6377 JMP 1K  
442 1022 LDA i 2  
443 1464 SAE i 4  
444 6435 JMP 1X+4  
445 0223 XSK i 3  
446 6442 JMP P-4  
447 1020 LDA i  
450 0004 #2Q 1 OR 3  
451 1140 ADM  
452 0002 2  
453 0221 XSK i 1  
454 6001 JMP 1  
[REPLACE  
455 0043 #1L SET 3  
456 0000 0  
457 0061 SET i 1  
460 0234 234  
461 0064 SET i 4  
462 4516 3H-4000  
463 1324 LDH i 4  
464 1420 SHD i  
465 1200 1200  
466 6502 JMP 2K  
467 0241 ROL 1  
470 1120 ADA i  
471 2001 6A  
472 4005 STC 5  
473 1745 DSC 5  
474 1765 DSC i 5  
475 1020 LDA i  
476 0004 4  
477 2001 ADD 1

```

P CONT
500 4001      STC 1
501 6463      JMP 1L+6
502 0415 #2K KST
503 6457      JMP 1L+2
504 0515      KBD
505 1460      SAE i
506 0045      45   [R
507 6015      JMP 15
510 0045      SET 5
511 0002      2
512 1020      LDA i
513 5757      5757
514 1045      STA 5
515 1065      STA i 5
516 6003      JMP 3
    [REPLACE TABLE
517 4530 #3H 4530
520 4337      4337
521 2426      2426
522 3013      3013
523 1200      1200
    [SLOT SEARCH
524 0064 #1V SET i 4
525 2372      6E+1
526 0041      SET 1
527 0000      0
530 0062      SET i 2
531 3000      3000
532 6377      JMP 1K
533 0045      SET 5
534 0002      2
535 1022      LDA i 2
536 1460      SAE i
537 5757      5757
540 6532      JMP 1V+6
541 1024      LDA i 4
542 1065      STA i 5
543 1520      SRO i
544 3567      3567
545 6541      JMP P-4
546 0042      SET 2
547 0005      5
550 6447      JMP 2Q-1
    [GAP SEARCH CONTROL
551 0050 #1U SET 10
552 0000      0
553 0066      SET i 6
554 7347      -7C
555 1020      LDA i
556 7777      7777
557 4654      STC 1E
560 6617      JMP 1B
561 0047      SET 7
562 0006      6
563 0011      CLR
564 4654      STC 1E

```

P CONT  
 565 0066 SET i 6  
 566 0270 7F  
 567 6617 JMP 1B  
 [FIND NEAREST OF TWO  
 570 1000 #1G LDA  
 571 0007 7  
 572 0017 COM  
 573 2006 ADD 6  
 574 1120 ADA i  
 575 6723 -7G-7G  
 576 0451 APO  
 577 6602 JMP P+3  
 600 6367 JMP 1H  
 601 6010 JMP 10  
 602 1000 LDA  
 603 0007 7  
 604 1120 ADA i  
 605 1000 1000  
 606 6371 JMP 1H+2  
 607 6613 JMP P+4  
 610 6367 JMP 1H  
 611 6010 JMP 10  
 612 6151 JMP 1N  
 613 1000 LDA  
 614 0007 7  
 615 0017 COM  
 616 6010 JMP 10  
 [GAP SEARCH  
 617 0041 #1B SET 1  
 620 0000 0  
 621 0062 SET i 2  
 622 7000 7000  
 623 6377 JMP 1K  
 624 1322 LDH i 2  
 625 1420 SHD i  
 626 5700 5700  
 627 6623 JMP P-4  
 630 0222 XSK i 2  
 631 0222 XSK i 2  
 632 0222 XSK i 2  
 633 6640 JMP 1C  
 634 6662 JMP 1D  
 635 6640 JMP 1C  
 636 6662 JMP 1D  
 637 6623 JMP 1B+4  
 [GET BN  
 640 1022 #1C LDA i 2  
 641 1560 BCL i  
 642 7000 7000  
 643 1040 STA  
 644 0011 11  
 645 1122 ADA i 2  
 646 0451 APO  
 647 0220 XSK i 0  
 650 0017 COM  
 651 1040 STA

```

P CONT
652 0012      12
653 1520      SRO i
654 0000 #1E FWD OR BWD
655 6000      JMP 0
656 0052      SET 12
657 0011      11
660 4011      STC 11
661 6000      JMP 0
      [BN COMPARE
662 1000 #1D LDA
663 0011      11
664 2006      ADD 6
665 0470      AZE i
666 0017      COM
667 0451      APO
670 6000      JMP 0
671 2104      ADD 1F
672 0451      APO
673 0470      AZE i
674 6000      JMP 0
675 0046      SET 6
676 0012      12
677 6621      JMP 1B+2
      [WRITE INDEX
700 1044 #1T STA 4
701 1560      BCL i
702 7000      7000
703 1040      STA
704 0054      2B
705 4106      STC 1M+3
706 2104      ADD 1F
707 0017      COM
710 1064      STA i 4
711 0435      KST i
712 6015      JMP 15
713 0000      TAPE INS
714 1426      117G
715 6000      JMP 0
      [FIX TAPE INSTRUCTIONS
      [RDC UNIT
716 1000 #1J LDA
717 2377      6E+6
720 1140      ADM
721 0044      2N [MTB u
722 1140      ADM
723 0035      1R-1 [RDC i u
724 6000      JMP 0
      [WRITE UNIT
725 1000 #1S LDA
726 2377      6E+6
727 1620      BSE i
730 0701      RCG
731 1040      STA
732 0407      1Z
733 2225      ADD 3E-3 [2
734 1040      STA

```

P CONT  
 735 0062 2A [MTB u  
 736 1040 STA  
 737 0142 2X+6 [MOTION CHK  
 740 2225 ADD 3E-3 [2  
 741 1040 STA  
 742 0713 1T+13  
 743 1120 ADA i  
 744 0021 21  
 745 1040 STA  
 746 0053 2B-1  
 747 2143 ADD 1P [1  
 750 4105 STC 1M+2  
 751 6000 JMP O

## [PARTIAL SAVE

1400 0061 #2P SET i 1  
 1401 2370 6E-1  
 1402 0062 SET i 2  
 1403 7770 -7  
 1404 0063 SET i 3  
 1405 1665 2T-1  
 1406 1021 LDA i 1  
 1407 1063 STA i 3  
 1410 0222 XSK i 2  
 1411 7406 JMP P-3  
 1412 1020 #1Q LDA i  
 1413 0350 7A  
 1414 1040 STA  
 1415 1616 2W  
 1416 5554 STC 2J+3  
 1417 1020 LDA i  
 1420 4350 417A  
 1421 5652 STC 2V  
 1422 3666 ADD 2T  
 1423 5474 STC 2F  
 1424 4001 STC 1  
 1425 0062 SET i 2  
 1426 7777 7777  
 1427 1020 LDA i  
 1430 0000 7B  
 1431 1660 BCO i  
 1432 0010 10  
 1433 1060 STA i  
 1434 0000 OTHER UNIT  
 1435 1620 BSE i  
 1436 0703 MTB  
 1437 1040 STA  
 1440 1661 2V+7  
 1441 1120 ADA i  
 1442 0023 23  
 1443 1040 STA  
 1444 1651 2V-1  
 1445 2143 ADD 1P [1  
 1446 5553 STC 2J+2  
 1447 3667 #2D ADD 2T+1  
 1450 0470 AZE i

P CONT

```

1451 3517    ADD 2H-5
1452 2143    ADD 1P [1
1453 5465    STC 2E
1454 7603    JMP 2Y
1455 1321    LDH i 1
1456 1420    SHD i
1457 7700    7700
1460 6151    JMP 1N
1461 1460    SAE i
1462 0012    12
1463 7454    JMP P-7
1464 1020    LDA i
1465 4000 #2E SECOND LINE NUMBER
1466 3517    ADD 2H-5
1467 0470    AZE i
1470 6151    JMP 1N
1471 5465    STC 2E
1472 3517    ADD 2H-5
1473 1160    ADM i
1474 0400 #2F FIRST LINE NUMBER
1475 0450    AZE
1476 7454    JMP 2D+5
[ TRANSFER READY-FIRST LINE FOUND
1477 1020    LDA i
1500 2065    2065
1501 1062    STA i 2
1502 0017    COM
1503 1062    STA i 2
1504 7631 #2G JMP 2Z
1505 7603    JMP 2Y
1506 1321    LDH i 1
1507 1362    STH i 2
1510 1420    SHD i
1511 7700    7700
1512 7530    JMP 2H+4
1513 1460    SAE i
1514 0012    12
1515 7504    JMP 2G
1516 1020    LDA i
1517 7776    -1      [ CONSTANT
1520 1140    ADM
1521 1465    2E
1522 0450    AZE
1523 7504    JMP 2G
[ FINISHED MAKING NEW MS
1524 7631 #2H JMP 2Z
1525 1020    LDA i
1526 7777    7777
1527 1362    STH i 2
1530 1000    LDA
1531 0002    2
1532 1560    BCL i
1533 6377    6377
1534 0244    ROL 4
1535 2143    ADD 1P [1
1536 0017    COM

```

P CONT

1537 4004 STC 4  
 1540 3630 ADD 2W+12  
 1541 5661 STC 2V+7  
 1542 7640 JMP 2Z+7  
 1543 1560 BCL i  
 1544 7000 7000  
 1545 0017 COM  
 1546 1120 ADA i  
 1547 0350 7A  
 1550 4104 STC 1F  
 [CHECK TAPE]  
 1551 0041 #2J SET 1  
 1552 0104 1F  
 1553 0000 CHECK  
 1554 0350 7A  
 1555 0450 AZE  
 1556 7412 JMP 1Q  
 1557 2143 ADD 1P E1  
 1558 3554 ADD 2J+3  
 1561 5554 STC 2J+3  
 1562 0221 XSK i 1  
 1563 7553 JMP 2J+2  
 1564 0720 RDC i 7E  
 1565 4304 4I 7D+4  
 1566 0061 SET i 1  
 1567 2370 6E-1  
 1570 0062 SET i 2  
 1571 7770 -7  
 1572 0063 SET i 3  
 1573 1665 2T-1  
 1574 1023 LDA i 3  
 1575 1061 STA i 1  
 1576 0222 XSK i 2  
 1577 7574 JMP P-3  
 1600 1000 LDA  
 1601 1434 2D-13  
 1602 6211 JMP 2L+2  
 [READ OLD MS]  
 1603 0043 #2Y SET 3  
 1604 0000 0  
 1605 0011 CLR  
 1606 2001 ADD 1  
 1607 0450 AZE  
 1610 6000 JMP 0  
 1611 3616 ADD 2W  
 1612 1620 BSE i  
 1613 6000 6000  
 1614 5616 STC 2W  
 1615 0720 RDC i 7B  
 1616 0350 #2W 7A  
 1617 3654 ADD 2V+2  
 1620 1200 LAM  
 1621 1616 2W  
 1622 0451 APO  
 1623 7615 JMP 2W-1  
 1624 0703 MTB 7B

```

P CONT
1625 0000      0
1626 0061      SET i 1
1627 6777      6777
1630 6003      JMP 3
    [WRITE NEW MS
1631 0064 #2Z SET i 4
1632 7775      -2
1633 0011      CLR
1634 2002      ADD 2
1635 1460      SAE i
1636 6777      6777
1637 6000      JMP 0
1640 0043      SET 3
1641 0000      0
1642 1000      LDA
1643 1652      2V
1644 1560      BCL i
1645 3000      3000
1646 5652      STC 2V
1647 0435      KST i
1650 6015      JMP 15
1651 1356      WRITE TAPE
1652 4350 #2V 417A
1653 1020      LDA i
1654 1001      1001  [CONSTANT
1655 1140      ADM
1656 1652      2V
1657 0224      XSK i 4
1660 7647      JMP 2V-3
1661 1500      STOP TAPE
1662 0000      0
1663 0062      SET i 2
1664 7777      7777
1665 6003      JMP 3
1666 0000 #2T 0 [LN
1667 0000      0 [LN
1670 7777      -0 [NAME
1671 7777      -0
1672 7777      -0
1673 7777      -0
1674 7777      -0 [UNIT
    7D=300
    7A=350
    7B=0
    7E=0
    7C=430
    6E=2371
    7G=426
    7F=270  [FILE UPPER BOUND
    6A=2001
    9J=771

```

[LAP6 FILE COMMANDS

COPYFILE,0

LAP6

	VALUE	LINE		VALUE	LINE
1A	0255	255	6Z	0376	413
1B	0203	203	7C	0430	1247
1C	1062	1131	7D	0300	1246
1D	1103	1152	7E	0000	1250
1E	1122	1172	7F	0270	1252
1F	1136	1210	7G	0426	1253
1G	1151	1224			
1H	0020	11			
1J	1043	1107			
1M	0123	120			
1R	0064	57			
1S	0172	171			
1T	0136	133			
1U	0147	145			
1V	0162	160			
1W	0105	101			
1X	0113	107			
2A	0071	65			
2B	0077	73			
2M	0030	21			
2N	0033	24			
2S	0056	51			
2X	0047	41			
3A	1030	1072			
3B	1040	1103			
3C	1054	1122			
4A	0561	606			
4B	0603	630			
4C	0706	737			
4D	0730	762			
4E	0747	1002			
4F	0740	772			
4G	0653	702			
4H	0775	1032			
4J	1023	1063			
4K	1026	1067			
4L	1016	1055			
5A	0323	330			
5B	1046	1113			
5C	0325	333			
5D	0354	366			
5E	0334	342			
5F	1172	1245			
6A	0305	310			
6E	2371	1251			
6J	0341	350			
6K	0367	402			
6L	0550	573			
6M	0522	543			
6N	0540	562			
6P	0662	712			
6R	0722	753			
6S	0500	520			
6T	0406	423			
6U	0444	462			
6V	0420	435			
6W	0470	507			
6X	0437	455			
6Y	0424	442			

P CONT

```

[LAP6 COPY FILE
[BLOCKS 314-316
[QUARTERS 0-3
    B15
15 0701    RCG 7E
16 7300    717D
17 6203    JMP 1B
[TAPE TRANSFERS
20 1037 #1H LDA i 17
21 0451    APO
22 6123    JMP 1M
23 4077    STC 2B
24 1037    LDA i 17
25 4064    STC 1R
26 1037    LDA i 17
27 4002    STC 2
30 0043 #2M SET 3
31 0002    2      [CONSTANT
32 6056    JMP 2S
33 1500 #2N STOP TAPE-READ DONE OR FULL
34 0000    0
35 0453    IBZ
36 6035    JMP P-1
37 0042    SET 2
40 0003    3      [CONSTANT
41 6071    JMP 2A [WRI
42 6045    JMP P+3 [WRI DONE
43 6047    JMP 2X [MOTION STOP
44 6030    JMP 2M
45 6047    JMP 2X
46 6020    JMP 1H
[MTB NEW
47 0041 #2X SET 1
50 0000    0
51 0000    MOVE TAPE
52 0001    1      [CONSTANT
53 0453    IBZ
54 6053    JMP P-1
55 6001    JMP 1
[RDG, N BLOCKS
56 0041 #2S SET 1
57 0000    0
60 0064    SET i 4
61 0064    1R
62 6105    JMP 1W
63 0015    READ TAPE
64 0000 #1R BN
65 6113    JMP 1X
66 0450    AZE
67 6063    JMP 1R-1
70 6001    JMP 1
[LWRITE N BLOCKS
71 0041 #2A SET 1
72 0000    0
73 0064    SET i 4
74 0077    2B

```

```

P CONT
75 6105      JMP 1W
76 1356      WRITE TAPE
77 0000 #2B BN
100 6113     JMP 1X
101 0450     AZE
102 6076     JMP 2B-1
103 0221     XSK i 1
104 6001     JMP 1
105 0011 #1W CLR
106 1104     ADA 4
107 1120     ADA i
110 3000     1000 OR 2000
111 1044     STA 4
112 6000     JMP 0
113 1020 #1X LDA i
114 1001     1001 [CONSTANT
115 1204     LAM 4
116 1560     BCL i
117 0777     777
120 0222     XSK i 2
121 6000     JMP 0
122 6001     JMP 1
      [CHECK ALL TRANSFERS
123 0077 #1M SET i 17
124 0202     1B-1
125 1037     LDA i 17
126 0451     APO
127 6172     JMP 1S
130 4136     STC 1T
131 1037     LDA i 17
132 4005     STC 5
133 1037     LDA i 17
134 4002     STC 2
135 0450     CHECK TAPE
136 0000 #1T BN
137 0450     AZE
140 6147     JMP 1U [ERROR
141 2136     ADD 1T
142 2052     ADD 2X+3 [1
143 4136     STC 1T
144 0222     XSK i 2
145 6135     JMP 1T-1
146 6125     JMP 1M+2
      [ERROR
147 1000 #1U LDA
150 0136     1T
151 4077     STC 2B
152 0043     SET 3
153 0002     2
154 1017     LDA 17 [-N BLKS
155 0017     COM   [+N BLKS
156 2002     ADD 2 [-N LEFT
157 2005     ADD 5
160 4064     STC 1R
161 0062     SET i 2
162 7776 #1V -1      [CONSTANT

```

P	CNT	
163	6056	JMP 2S
164	0062	SET i 2
165	7776	-1
166	6071	JMP 2A
167	0042	SET 2
170	0003	3
171	6135	JMP 1T-1
[FINISHED]		
172	1520	#1S SRO i
173	7777	-0 [NOT OK IF 0
174	6015	JMP 15 [OK IF ONES
175	0720	RDC i 7E
176	4304	417D+4 [GRIDS
177	0700	RDC 7E
200	3324	317D+24 [NOT FOR AM
201	2174	ADDP-5 [CHANGE AM
202	7401	JMP 1401
[FILE ORGANIZE]		
203	0041	#1B SET 1
204	2377	6E+6 [UNIT
205	0720	RDC i 7E
206	1315	117D+15
207	0720	RDC i 7E
210	2316	217D+16
211	0011	CLR
212	2001	ADD 1
213	1620	BSE i
214	0700	RDC
215	1040	STA
216	1035	3A+5 [RDC OLD-INDEX
217	2040	ADD 2N+5 [3
220	1040	STA
221	0033	2N [MTB OLD
222	1120	ADA i
223	0015	15
224	1040	STA
225	1030	3A
226	1040	STA
227	0063	1R-1 [RDC i OLD
230	1660	BCO i
231	0010	10
232	1120	ADA i
233	7760	-17
234	1040	STA
235	1040	3B [RCG NEW
236	2031	ADD 2M+1 [2
237	1040	STA
240	0051	2X+2 [MTB NEW
241	2031	ADD 2M+1 [2
242	1040	STA
243	1056	3C+2 [WCG NEW
244	1120	ADA i
245	0021	21
246	1040	STA
247	0076	28-1 [WRI i NEW
250	2052	ADD 2X+3 [1

P CONT

251 4135 STC 1T-1 [CHK i  
 252 2001 ADD 1  
 253 1460 SAE i  
 254 0000 7E  
 255 7043 #1A JMP 1J  
 256 7030 JMP 3A  
 257 7040 JMP 3B

[CHECK OLD INDEX

260 0061 SET i 1  
 261 3777 3777  
 262 1021 LDA i 1  
 263 1460 SAE i  
 264 5757 5757  
 265 6015 JMP 15 [NO OLD INDEX  
 266 0062 SET i 2  
 267 2777 2777  
 270 1022 LDA i 2  
 271 1420 SHD i  
 272 5700 5700  
 273 6303 JMP 6A-2

[MAKE NEW INDEX

274 0063 SET i 3  
 275 2777 2777  
 276 1020 LDA i  
 277 5757 5757  
 300 1063 STA i 3  
 301 0203 XSK 3  
 302 6300 JMP P-2  
 303 0077 SET i 17  
 304 1171 5F-1

[INDEX COMPARE AND TRANSFER TABLE MAKE-UP

305 1020 #6A LDA i  
 306 0451 APO [CONSTANT  
 307 4437 STC 6X  
 310 2355 ADD 5D+1 [APO i  
 311 4445 STC 6U+1  
 312 0074 SET i 14  
 313 1045 5B-1 [TABLE  
 314 6373 JMP 6Z-3  
 315 6341 JMP 6J [NO OLD FWD LEFT

[FIND NEAREST OLD BACKWARD

316 6354 JMP 5D  
 317 6376 JMP 6Z  
 320 6367 JMP 6K [NO OLD BWD LEFT

[FIND NEAREST FWD GAP

321 6500 JMP 6S  
 322 6550 JMP 6L [NO FWD GAP  
 323 6522 #5A JMP 6M [FIND BWD GAP  
 324 6334 JMP 5E [NO BWD GAP--TRANSFER FORWARD

[TRANSFER NEAREST

325 1000 #5C LDA  
 326 1052 5B+4 [FWD GAP  
 327 3053 ADD 5B+5 [BWD GAP  
 330 1120 ADA i  
 331 6723 -7G-7G [MIDPOINT  
 332 0471 APO i

P CONT

333 6552 JMP 6L+2 [ASSIGN BACKWARD

334 1000 #5E LDA [ASSIGN FWD

335 1052 5B+4

336 0017 COM

337 5053 STC 5B+5

340 6561 JMP 4A

ENQ OLD FWD LEFT

341 6354 #6J JMP 5D

342 6376 JMP 6Z

343 7054 JMP 3C ENQ OLD BWD LEFT. WRITE NEW INDEX AND CONT  
INUE

[FIND FARDEST BWD ENTRY

344 0074 SET i 14

345 1045 5B-1

346 1020 LDA i

347 0471 APO i

350 4445 STC 6U+1

351 6373 JMP 6Z-3

352 0000 GOON

[FIND NEAREST FWD GAP

353 6321 JMP 5A-2

[FIX NEAREST BWD ENTRY

354 1020 #5D LDA i

355 0471 APO i [CONSTANT

356 4437 STC 6X

357 2306 ADD 6A+1 [APO

360 4445 STC 6U+1

361 1020 LDA i

362 1000 1000

363 4444 STC 6U

364 0074 SET i 14

365 1047 5B+1

366 6000 JMP 0

ENQ BWD ENTRY--FIND FARDEST FWD

367 1020 #6K LDA i

370 0451 APO

371 4437 STC 6X

372 6317 JMP 5A-4

[TABLE MAKE-UP SUBROUTINES

[FIND NEAREST, FARDEST BWD OR FWD ENTRY

373 1020 LDA i

374 6777 -1000

375 4444 STC 6U

376 0050 #6Z SET 10

377 0000 0

400 0066 SET i 6

401 2000 2000

402 0065 SET i 5

403 7677 -100

404 0011 CLR

405 4421 STC 6V+1

406 6470 #6T JMP 6W [FIX ADDRESS

407 6420 JMP 6V [DONE

410 1020 LDA i

411 0004 4

412 2006 ADD 6

P CONT

413 4004 STC 4  
 414 6424 JMP 6Y [MS CHECK  
 415 6424 JMP 6Y [BIN CHK  
 416 1026 LDA i 6  
 417 6406 JMP 6T  
 420 1520 #6V SRO i  
 421 0000 TEST  
 422 0230 XSK i 10 [FOUND p+2  
 423 6010 JMP 10 [NO ENTRIES LEFT-p+1  
 [ENTRY CHECK  
 424 1024 #6Y LDA i 4 [BN  
 425 1560 BCL i  
 426 7000 7000  
 427 4434 STC p+5  
 430 1024 LDA i 4  
 431 0451 APO  
 432 6000 JMP 0 [NO ENTRY  
 433 1020 LDA i  
 434 0000 NEW BN  
 435 1120 ADA i  
 436 7351 -7G [MIDPOINT  
 437 0471 #6X APO OR APO i  
 440 6000 JMP 0 [ENTRY WRONG DIRECTION  
 441 1060 STA i  
 442 0000 -DIFFERENCE  
 443 1120 ADA i  
 444 7777 #6U -1000 OR +1000 [POSITIVE DIFFERENCE  
 445 0471 APO OR APO i  
 446 6000 JMP 0 [NEW NOT CLOSER  
 447 1000 LDA [NEW CLOSER  
 450 0442 6U-2  
 451 0017 COM  
 452 4444 STC 6U  
 453 0017 COM  
 454 4421 STC 6V+1  
 455 1000 LDA  
 456 0006 6  
 457 1074 STA i 14 [NAME POINTER  
 460 1000 LDA  
 461 0004 4  
 462 1074 STA i 14 [#BLKS POINTER  
 463 1020 LDA i  
 464 7775 -2  
 465 1140 ADM  
 466 0014 14  
 467 6000 JMP 0  
 [ADDRESS FIX  
 470 1000 #6W LDA  
 471 0006 6  
 472 1620 BSE i  
 473 0007 7  
 474 4006 STC 6  
 475 0225 XSK i 5  
 476 0220 XSK i 0 [NOT DONE, p+2  
 477 6000 JMP 0 [DONE, p+1  
 [FWD GAP SEARCH CONTROL

```

P CONT
500 0067 #6S SET i 7
501 7347 -7C
502 0050 SET 10
503 0000 0
504 0044 SET 4
505 1047 SB+1 [# BLKS POINTER
506 1020 LDA i
507 7777 7777 [IF i, FWD
510 6662 JMP 6P
511 1000 LDA
512 0007 7
513 0017 COM
514 5052 STC 5B+4 [FWD GAP BN
515 2007 ADD 7 [-FWD
516 3164 ADD 5F-6 [1000
517 6542 JMP 6N+2 [CHECK BOUNDS
520 0230 XSK i 10 [OK, p+2
521 6010 JMP 10 [NOT OK
      [BWD GAP SEARCH CONTROL
522 0044 #6M SET 4
523 1051 SB+3
524 0067 SET i 7
525 0270 7F [UPPER BOUND
526 0050 SET 10
527 0000 0
530 0011 CLR
531 6662 JMP 6P
532 6540 JMP 6N
533 6535 JMP p+2
534 6010 JMP 10
535 5053 STC 5B+5
536 0230 XSK i 10
537 6010 JMP 10
      [BOUNDS CHECK
540 1000 #6N LDA
541 0007 7
542 2740 ADD 4F [-N BLKS TO MOVE
543 0470 AZE i
544 0017 COM
545 0451 APO
546 0220 XSK i 0 [NOT OK
547 6000 JMP 0 [OK
      [NO FWD GAP
550 6522 #6L JMP 6M [FIND BWD GAP
551 6775 JMP 4H [NO FIT--FREE GAP SEARCH
      [TRANSFER BWD
552 1000 LDA
553 1050 SB+2
554 5046 STC 5B
555 3051 ADD 5B+3
556 5047 STC 5B+1
557 3053 ADD 5B+5
560 5052 STC 5B+4
      [NAME MATCH
561 1000 #4A LDA
562 1047 SB+1

```

P CONT  
 553 1560 BCL i  
 564 7774 7774 [1 OR 3  
 565 4611 STC 4B+6  
 566 0066 SET i 6 [NEW NAME  
 567 3000 3000  
 570 0065 SET i 5  
 571 7677 -100  
 572 2162 ADD 1V [-1  
 573 1140 ADM  
 574 1047 SB+1  
 575 0062 SET i 2  
 576 7773 -4  
 577 0044 SET 4 [OLD NAME  
 600 1046 5B  
 601 6470 JMP 6W [ADDRESS FIX  
 602 6747 JMP 4E [DONE, NO MATCH  
 603 1026 #4B LDA i 6  
 604 1464 SAE i 4  
 605 6575 JMP 4B-6  
 606 0222 XSK i 2  
 607 6603 JMP 4B  
 610 1020 LDA i [MATCH  
 611 0004 1 OR 3,BIN OR MS  
 612 1140 ADM  
 613 0006 6  
 614 0045 SET 5 [SAVE BN POINTER,NEW  
 615 0006 6  
 616 1025 LDA i 5  
 617 0471 APO i  
 620 6653 JMP 4G [ENTRY ALREADY ,ERASE  
 621 0044 SET 4  
 622 1047 SB+1  
 623 1004 LDA 4  
 624 1560 BCL i  
 625 0777 777 [QN  
 626 1600 BSE  
 627 1052 SB+4 [NEW BN TO INDEX  
 630 1046 STA 6  
 631 1560 BCL i  
 632 7000 7000  
 633 1077 STA i 17  
 634 1004 LDA 4  
 635 1560 BCL i  
 636 7000 7000 [OLD BN TO INDEX  
 637 1077 STA i 17  
 640 1024 LDA i 4 [# BLKS  
 641 1066 STA i 6  
 642 0017 COM  
 643 1077 STA i 17  
 [RESET BOUNDS  
 644 1000 LDA  
 645 1053 SB+5  
 646 0451 APO  
 647 6652 JMP P+3  
 650 4525 STC 6M+3  
 651 6653 JMP 4G

```

P CONT
652 4501 STC 6S+1
[ERASE OLD
653 0044 #4G SET 4
654 1047 SB+1
655 1020 LDA i
656 5757 5757
657 1044 STA 4
660 1064 STA i 4
661 6305 JMP 6A
[GAP SEARCH
662 4722 #6P STC 6R [SRO FWD OR BWD
663 0041 SET 1
664 0000 0
665 1004 LDA 4
666 0017 COM
667 4740 STC 4F [-N TO SAVE
670 0066 SET i 6
671 3007 3007
672 0206 XSK 6
673 6675 JMP P+2
674 6001 JMP 1 [DONE
675 1020 LDA i
676 0004 4
677 1140 ADM
700 0006 6
701 6706 JMP 4C
702 6730 JMP 4D
703 6706 JMP 4C
704 6730 JMP 4D
705 6672 JMP 6P+10
[GET BN
706 1026 #4C LDA i 6
707 1560 BCL i
710 7000 7000
711 1040 STA
712 0011 11
713 1126 ADA i 6
714 0451 APO
715 0220 XSK i 0 [NO ENTRY
716 0017 COM
717 1040 STA
720 0012 12
721 1520 SRO i
722 0000 #6R FWD OR BWD
723 6000 JMP 0 [FWD
724 0052 SET 12
725 0011 11
726 4011 STC 11
727 6000 JMP 0
[BN COMPARE
730 1000 #4D LDA
731 0011 11 [IF BWD THEN COMP OF BN+#BLKS
732 2007 ADD 7
733 0470 AZE i
734 0017 COM
735 0451 APO

```

```

P CONT
736 6000      JMP 0 [WRONG DIRECTION
737 1120      ADA i
740 0000 #4F -N TO MOVE
741 0451      APO
742 0470      AZE i
743 6000      JMP 0
744 0047      SET 7
745 0012      12
746 6670      JMP 6P+6
[FIND SLOT, INSERT NAME
747 0066 #4E SET i 6
750 3000      3000
751 0065      SET i 5
752 7677      -100
753 6470      JMP 6W
754 7026      JMP 4K [DONE, NO SLOT, ERASE
755 0044      SET 4 [SAVE SLOT
756 0006      6
757 1026      LDA i 6
760 1460      SAE i
761 5757      5757
762 6753      JMP 4E+4
763 0046      SET 6 [SLOT
764 0004      4
765 0044      SET 4
766 1046      5B
767 1024      LDA i 4
770 1066      STA i 6
771 1520      SRO i
772 3567      3567
773 6767      JMP P-4 [NOT DONE
774 6610      JMP 4B+5
[FREE GAP SEARCH
[ANYTHING FWD
775 0067 #4H SET i 7
776 7347      -7C
777 6502      JMP 6S+2
1000 7002      JMP P+2 [NO FWD GAP
1001 6334      JMP 5E [TRANSFER FWD
[TRY BWD GAP FOR FWD ENTRY
1002 0067      SET i 7
1003 0270      7F
1004 0044      SET 4
1005 1047      5B+1
1006 6524      JMP 6M+2
1007 7016      JMP 4L [NO FIT ANYWHERE
1010 1000      LDA
1011 1053      5B+5
1012 5052      STC 5B+4
1013 2525      ADD 6M+3 [KEEP OLD BOUND ON BWD
1014 5053      STC 5B+5
1015 6561      JMP 4A
[ERASE ENTRY
1016 7023 #4L JMP 4J
1017 2162      ADD 1V [-1
1020 3047      ADD 5B+1

```

```

P CONT
1021 4004      STC 4
1022 6655      JMP 4G+2
               [NO INDICATOR
1023 0011 #4J CLR
1024 4173      STC 1S+1
1025 6000      JMP 0
               [NO SLOT
1026 7023 #4K JMP 4J
1027 6653      JMP 4G
               [RDC OLD UNIT
1030 0015 #3A READ TAPE
1031 4426      417G [INDEX
1032 3031      ADD P-1
1033 2114      ADD 1X+1 [1001
1034 5036      STC P+2
1035 0015      READ TAPE
1036 0000      BN
1037 6000      JMP 0
               [RCG NEW INDEX
1040 0015 #3B READ TAPE
1041 1426      117G [INDEX
1042 6000      JMP 0
               [INVERT INDEX READ
1043 7040 #1J JMP 3B
1044 7030      JMP 3A
1045 6260      JMP 1A+3
               [GAP SEARCH STORE TABLE
1046 0453 #5B NAME POINTER-1 FOR NEAREST FWD ENTRY OR FARthest
               BWD ENTRY
1047 1500      BLKS POINTER
1050 0453      NAME POINTER-1 FOR NEAREST BWD ENTRY OR FARthest
               FWD ENTRY
1051 1500      BLKS POINTER
1052 0000      FWD GAP
1053 0000      BWD GAP
               [WCG NEW INDEX
1054 0435 #3C KST i
1055 6015      JMP 15 [FORGET IT
1056 1356      WRITE TAPE
1057 1426      117G
1060 2277      ADD 6A-6 [TABLE TERMINATOR
1061 1077      STA i 17
               [TABLE REORGANIZE
1062 0077 #1C SET i 17
1063 0202      1B-1 [NEW TABLE
1064 0074      SET i 14
1065 1167      SF-3 [OLD TABLE
1066 1020      LDA i
1067 0002      2
1070 1140      ADM
1071 0014      14
1072 1034      LDA i 14
1073 1460      SAE i
1074 5757      5757
1075 7077      JMP P+2
1076 7122      JMP 1E [TABLE END

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P CONT
1077 0451      APO
1100 7066      JMP 1C+4 [NO ENTRY
1101 1120      ADA i
1102 7351      -7G [MIDPOINT
1103 0451 #1D APO
1104 7066      JMP 1C+4 [WRONG DIRECTION
1105 1060      STA i
1106 0000      NEW DIFF+OLD DIFF
1107 1120      ADA i
1110 6777      -1000 [OLD DIFF
1111 0471      APO i
1112 7066      JMP 1C+4 [KEEP OLD DIFF
1113 1000      LDA [KEEP NEW
1114 1106      P-6
1115 0017      COM
1116 5110      STC P-6
1117 0053      SET 13
1120 0014      14
1121 7066      JMP 1C+4
               [TABLE END
1122 1020 #1E LDA i
1123 6777      -1000
1124 1440      SAE
1125 1110      1D+5
1126 7136      JMP 1F [TRANSFER ENTRY
               [NONE FOUND TO MOVE
1127 1520      SRO i
1130 5252      S252
1131 7151      JMP 1G [FINISHED
1132 1020      LDA i [DO BWD
1133 0471      APO i
1134 5103      STC 1D
1135 7064      JMP 1C+2
               [TRANSFER ENTRY
1136 5110 #1F STC 1D+5
1137 1013      LDA 13 [NEW BN
1140 1077      STA i 17
1141 0011      CLR
1142 0017      COM
1143 1053      STA 13 [ERASE OLD
1144 1033      LDA i 13 [OLD BN
1145 1077      STA i 17
1146 1033      LDA i 13 [-N BLKS
1147 1077      STA i 17
1150 7064      JMP 1C+2
               [FINISHED
1151 0017 #1G COM [1000
1152 4110      STC 1W+3 [BSE FOR TAPES
1153 1014      LDA 14 [5757
1154 1077      STA i 17 [SAVE TERMINATOR
1155 1000      LDA
1156 0017      17
1157 1120      ADA i
1160 7400      -377
1161 0451      APO
1162 7167      JMP P+5 [Q0

```

COPYFILE,15 LN=1236

LAP6

P CONT  
1163 1020 LDA i  
1164 1000 1000 EQ1 CONSTANT  
1165 1140 ADM  
1166 0110 1W+3  
1167 0077 SET i 17  
1170 0202 1B-1 TAPE TRANSFER  
1171 6020 JMP 1H  
1172 0040 #5F FIRST TABLE  
7D=300  
7C=430  
7E=0  
6E=2371  
7F=270  
7G=426  
[LAP6 COPY FILE

	VALUE LINE
1E	0073 71
1F	0060 55
1R	0030 23
1W	0110 107
1X	0116 116
2A	0042 36
2B	0046 42
2M	0020 12
2N	0036 31
2P	0054 50
2X	0126 127
3A	0502 517
3C	0507 524
3D	0155 161
3F	0166 172
3H	0244 253
3K	0213 221
3L	0237 245
3M	0344 356
3N	0253 263
3P	0266 276
3Q	0362 374
3R	0303 314
3T	0326 337
3V	0370 403
3W	0430 444
4A	0143 145
6A	2001 677
6B	0441 456
6C	0455 472
6E	0471 506
6F	0201 206
6G	0740 640
7D	0300 700
7E	0000 701
8Z	0776 676

P CONT

```

[LAP6 COPY
[BLOCKS 336-337
[Q0-1
    □15
15 0701    RCG 7E
16 7300    717D
17 6141    JMP 4A-2
[TAPE TRANSFERS
[READ, WRITE, CHECK
20 0042 #2M SET 2
21 0060  1F [-#BLOCKS
[RDG
22 0043    SET 3
23 0002    2 [-# LEFT
24 0064    SET i 4
25 0030    1R
26 6110    JMP 1W [FIX QN
27 0720    RDC i
30 0000 #1R BN
31 6116    JMP 1X [UP BN, AND CHECK 2
32 6035    JMP P+3 [RDG ALL DONE
33 0450    AZE
34 6027    JMP 1R-1
35 1020    LDA i [RDG DONE 7 BLOCKS
36 7762 #2N -15 [MTB u
37 6126    JMP 2X [MOTION STOP
[WRITE
40 0042    SET 2
41 0003    3 [-# LEFT
42 0064 #2A SET i 4
43 0046    2B
44 6110    JMP 1W
45 0726    WRI i
46 0000 #2B BN
47 6116    JMP 1X
50 6057    JMP 1F-1 [WRI ALL DONE
51 0450    AZE
52 6045    JMP 2B-1
53 1020    LDA i [WRI DONE 7 BLOCKS
54 7753 #2P -24 [MTB u
55 6126    JMP 2X [MOTION CHECK
56 6022    JMP 2M+2
[CHECK
57 0062    SET i 2
60 0000 #1F -N BLOCKS
61 0450    CHECK TAPE
62 0000    BN
63 0450    AZE
64 6073    JMP 1E [ERROR
65 2062    ADD P-3
66 2135    ADD 2X+7 i
67 4062    STC P-5
70 0222    XSK i 2
71 6061    JMP 1F+1
72 6015    JMP 15
[CHECK FAILURE

```

```

P CONT
73 1000 #1E LDA
74 0062 1F+2
75 4046 STC 2B
76 2002 ADD 2
77 1040 STA
100 0060 1F
101 2030 ADD 1R
102 0470 AZE i
103 0017 COM [BN IS ZERO
104 1560 BCL i
105 7000 7000
106 4030 STC 1R
107 6022 JMP 2M+2
    [FIX QN
110 0011 #1W CLR
111 1104 ADA 4
112 1620 BSE i
113 1000 1000
114 1044 STA 4
115 6000 JMP 0
    [FIX BN AND CHK 2
116 1020 #1X LDA i
117 1001 1001
120 1204 LAM 4
121 1560 BCL i
122 0777 777
123 0222 XSK i 2
124 0220 XSK i 0 [NOT DONE
125 6000 JMP 0 [DONE, P+1
    [MOTION CHECK
126 0041 #2X SET 1
127 0000 0
130 1400 SHD
131 4134 4|P+3
132 6000 JMP 0 [SAME UNIT
133 4134 STC P+1
134 0000 MOVE TOWARD BLK
135 0001 1 [CONSTANT
136 0453 IBZ
137 6136 JMP P-1
140 6001 JMP 1
    [DISPLAY QUESTIONS
141 0700 RDC 7E
142 1337 117D+37
143 0073 #4A SET i 13
144 0513 3C+4 [SAVE PARAMETERS
145 0066 SET i 6
146 0501 3A-1 [PARAMETER LENGTH
147 0062 SET i 2
150 0506 3C-1 [DIS CODES
    [KBD PRESET
151 1026 LDA i 6
152 4003 STC 3 [COUNTER
153 1022 LDA i 2
154 4005 STC 5 [SAVE CODES
    [DISPLAY PRESET

```

```

P CONT
155 0064 #3D SET i 4
156 7771 -6 [# OF LINES
157 1020 LDA i
160 0101 101 [Y COOR
161 4202 STC 6F+1
162 0072 SET i 12
163 4436 6B-3+4000
164 0061 SET i 1
165 0100 100 [X COOR
166 1332 #3F LDH i 12
167 1420 SHD i
170 7700 7700
171 6166 JMP 3F
172 1420 SHD i
173 1200 1200
174 6244 JMP 3H
[DISPLAY
175 0241 ROL 1
176 1120 ADA i
177 2001 6A [2001 [CONSTANT
200 4011 STC 11
201 1020 #6F LDA i
202 0000 Y COOR
203 1751 DSC 11
204 1771 DSC i 11
205 1020 LDA i
206 0004 4
207 2001 ADD 1
210 4001 STC 1
[KEYBOARD
211 0415 KST
212 6166 JMP 3F
213 0535 #3K KBD i
214 1420 SHD i
215 1200 1200
216 6344 JMP 3M [EOL
217 1420 SHD i
220 1300 1300
221 6303 JMP 3R [DELETE
222 1420 SHD i
223 2300 2300
224 6015 JMP 15 [CASE
225 0470 AZE i
226 6235 JMP 3L-2
227 1120 ADA i
230 7770 -7
231 0471 APO i
232 6166 JMP 3F [NOT OCTAL DIGIT
233 1120 ADA i
234 0007 7
235 0223 XSK i 3
236 6242 JMP 3L+3
237 0063 #3L SET i 3
240 7776 -1 [TOO MANY [CONSTANT
241 6166 JMP 3F
242 1365 STH i 5 [SAVE

```

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P CONT
243 6166 JMP 3F
[EOOL-LOWER Y
244 1020 #3H LDA i
245 7737 -40
246 1140 ADM
247 0202 6F+1
250 0224 XSK i 4
251 6164 JMP 3F-2
252 6155 JMP 30
[CHECK BN FOR 1ST ENTRY
253 1002 #3N LDA 2
254 4005 STC 5 [RESET 5
255 4266 STC 3P
256 1325 LDH i 5
257 1420 SHD i
260 7700 7700
261 6265 JMP 3P-1
262 2266 ADD 3P
263 0243 ROL 3
264 6255 JMP 3N+2
265 1020 LDA i
266 0000 #3P BN
267 0303 ROR 3
270 1040 STA
271 0266 3P
272 0451 APO
273 6303 JMP 3R [ILLEGAL
274 1120 ADA i
275 6777 -1000 [CONSTANT
276 0471 APO i
277 6303 JMP 3R [ILLEGAL
300 1000 LDA
301 0266 3P
302 6362 JMP 3Q [ENTRY OK
[DELETE-ILLEGAL
303 1000 #3R LDA
304 0005 S
305 1440 SAE
306 0507 3C
307 6311 JMP 3R+6
310 6166 JMP 3F [NOTHING TO DELETE
311 1442 SAE 2
312 6325 JMP 3T-1
313 1000 LDA
314 0006 6
315 2240 ADD 3L+1 [-1
316 4006 STC 6
317 2002 ADD 2
320 2240 ADD 3L+1 [-1
321 4002 STC 2
322 2013 ADD 13
323 2240 ADD 3L+1 [-1
324 4013 STC 13
325 1002 LDA 2
326 4005 #3T STC 5
327 1020 LDA i

```

P CONT

330 0013 13  
 331 1365 STH i 5  
 332 1020 LDA i  
 333 0077 77  
 334 1365 STH i 5  
 335 1365 STH i 5  
 336 1365 STH i 5  
 337 1006 LDA 6  
 340 4003 STC 3 [RESET COUNTER  
 341 1002 LDA 2  
 342 4005 STC 5 [RESET ADDRESS  
 343 6166 JMP 3F  
 [KEYBOARD EOL  
 344 1006 #3M LDA 6  
 345 1400 SHD  
 346 4003 4003  
 347 6166 JMP 3F [NOTHING TYPED YET.  
 350 1460 SAE i  
 351 7775 -2  
 352 6253 JMP 3N [CHECK BN  
 353 1305 LDH 5 [CHK UNIT  
 354 1560 BCL i  
 355 0005 5 [UNITS 0-1-4-5  
 356 0450 AZE  
 357 6303 JMP 3R [ILLEGAL  
 360 1305 LDH 5  
 361 0243 ROL 3  
 362 1073 #3Q STA i 13 [ENTRY OK  
 363 1000 LDA  
 364 0006 6  
 365 1460 SAE i  
 366 0506 3A+4  
 367 6151 JMP 3D-4 [DO NEXT SET  
 [TAPE PRESET  
 370 0073 #3V SET i 13  
 371 0513 3C+4  
 372 1033 LDA i 13 [# BLKS  
 373 0470 AZE i  
 374 6015 JMP 15 [0 BLKS  
 375 0017 COM  
 376 4060 STC 1F  
 377 1013 LDA 13  
 400 4431 STC 3W+1  
 401 6430 JMP 3W  
 402 1013 LDA 13 [RDC BN  
 403 4030 STC 1R  
 404 1033 LDA i 13 [RDC UNIT  
 405 1140 ADM  
 406 0027 1R-1 [RDC i u  
 407 2036 ADD 2N [-15  
 410 4036 STC 2N [MTB u  
 411 6430 JMP 3W  
 412 1013 LDA 13 [WRI BN  
 413 1040 STA  
 414 0046 2B  
 415 4062 STC 1F+2 [CHK BN

P CONT

416 1033 LDA i 13 [WRI UNIT  
 417 1140 ADM  
 420 0045 2B-1 [WRI i u  
 421 2135 ADD 2X+7 [1  
 422 1040 STA  
 423 0061 1F+1 [CHK i u  
 424 1140 ADM  
 425 0054 2P [MTB u  
 426 4134 STC 2X+6 [MOTION  
 427 6020 JMP 2M [TRANSFER

[CHECK BOUNDS

430 1020 #3W LDA i  
 431 0000 NUM BLKS  
 432 1133 ADA i 13 [BN  
 433 2275 ADD 3P+7 [-1000  
 434 0451 APO  
 435 6000 JMP 0 [OK  
 436 6015 JMP 15 [OUT OF BOUNDS

[DISPLAY TABLE

437 2642 2642 [COPY  
 440 4354 4354  
 441 1213 #6B 1213  
 442 7777 7777  
 443 7777 7777  
 444 1425 1425 [BLOCKS  
 445 3742 3742  
 446 2636 2636  
 447 4612 4612  
 450 3145 3145 [FROM  
 451 4240 4240  
 452 1425 1425 [BLOCK  
 453 3742 3742  
 454 2636 2636  
 455 1413 #6C 1413  
 456 7777 7777  
 457 7712 7712  
 460 5041 5041 [UNIT  
 461 3447 3447  
 462 1413 1413  
 463 7777 7777  
 464 7763 7763 [,  
 465 1247 1247 [TO  
 466 4214 4214  
 467 2537 2537 [BLOCK  
 470 4226 4226  
 471 3614 #6E 3614  
 472 1377 1377  
 473 7777 7777  
 474 1250 1250 [UNIT  
 475 4134 4134  
 476 4714 4714  
 477 1377 1377  
 500 7777 7777  
 501 1200 1200  
 502 7772 #3A -5  
 503 7773 -4

P CONT  
 504 7775 -2  
 505 7773 -4  
 506 7775 -2  
 507 0441 #3C 6B  
 510 0455 6C  
 511 0462 6C+5  
 512 4471 416E  
 513 4476 416E+5  
 514 1640 NUMBER BLOCKS  
 515 1240 FROM BLOCK  
 516 0000 UNIT  
 517 0000 TO BLOCK  
 520 0000 UNIT  
 B642

## MNEMONICS

642 4746 ↑TS↓  
 643 4046 ↑MS↓  
 644 4627 ↑SD↓  
 645 3653 ↑KX↓  
 646 3745 ↑LR↓  
 647 4545 ↑RR↓  
 650 4546 ↑RS↓  
 651 3746 ↑LS↓  
 652 4346 ↑PS↓  
 653 4542 ↑R0↓  
 654 0000 0 [UNDEFINED]  
 655 2537 ↑BL↓ [LOWER MEMORY BANK]  
 656 2550 ↑BU↓ [UPPER MEMORY BANK]  
 657 4340 ↑PM↓  
 660 4740 ↑TM↓ [MAG TAPE TWO=740]  
 661 2437 ↑AL↓  
 662 2446 ↑AS↓  
 663 2424 ↑AA↓  
 664 4024 ↑MA↓  
 665 4037 ↑ML↓  
 666 3740 ↑LM↓

P CONT  
667 3337      ↑HL↓  
670 3346      ↑HS↓  
671 2746      ↑DS↓  
672 3046      ↑ES↓  
673 4246      ↑OS↓  
674 3725      ↑LB↓  
675 3025      ↑EB↓  
676 4225      ↑OB↓  
677 0000      0  
700 2627      ↑CD↓  
701 2724      ↑DA↓  
702 2646      ↑CS↓  
703 4335      ↑PJ↓

## [SUBSTITUTE MNEMONICS

704 4733      ↑TH↓  
705 2455      ↑AZ↓  
706 3430      ↑IE↓  
707 4526      ↑RC↓  
710 4524      ↑RA↓  
711 2445      ↑AR↓  
712 4341      ↑PN↓  
713 4026      ↑MC↓  
714 4736      ↑TK↓  
715 4646      ↑SS↓  
716 4143      ↑NP↓  
717 3024      ↑EA↓  
720 4224      ↑OA↓  
721 3037      ↑EL↓  
722 5534      ↑ZI↓

P CONT  
 723 3142 ↑FO↑  
 724 5555 ↑ZZ↑  
 725 2645 ↑CR↑  
 726 3245 ↑GR↑  
 727 3045 ↑ER↑  
 730 2540 ↑BM↑  
 731 2652 ↑CW↑  
 732 3252 ↑GW↑  
 733 3452 ↑IW↑  
 734 3626 ↑KC↑  
 735 2736 ↑DK↑  
 736 5245 ↑WR↑  
 737 5237 ↑WL↑

## CODES

740 2000	#6G ADD
741 4000	STC
742 6000	JMP
743 0000	HLT
744 0005	ZTA
745 0010	ENI
746 0011	CLR
747 0014	ATR
750 0015	RTA
751 0016	NOP
752 0017	COM
753 0415	KST
754 0440	SNS
755 0446	PIN
756 0450	AZE
757 0451	APO
760 0452	LZE
761 0453	IBZ
762 0454	OVF
763 0455	ZZZ
764 0700	RDC
765 0701	RCG
766 0702	RDE
767 0703	MTB
770 0704	WRC
771 0705	WCG
772 0706	WRI
773 0707	CHK
774 0515	KBD

COPY, 12 LN=675

LAP6

P CONT  
775 0516 RSW  
776 0517 #8Z LSW  
6A=2001 [GRID PATTERNS  
7D=300  
7E=0  
[MNEMONICS STAY WITH COPY  
[LAP6 COPY

VALUE	LINE	VALUE	LINE
1A	1045	1112	4D 0653 720
1B	1071	1137	4E 0230 246
1C	1077	1146	4F 0212 223
1D	1122	1172	4G 0215 227
1E	1125	1176	4H 0217 232
1F	1236	1314	4J 0222 236
1G	1262	1344	4K 0225 242
1H	1105	1154	4L 0247 270
1J	1220	1274	4N 0644 710
1K	1251	1331	4P 0243 263
1L	0317	344	4Q 0567 632
1M	1244	1323	4R 0611 655
1N	1257	1340	6A 2642 1461
1P	0457	512	6B 2000 1624
1Q	1154	1226	6C 2700 1517
1R	1167	1242	6D 2400 1625
1S	1322	1405	6E 2432 1626
1T	0544	603	6F 2352 1627
1U	1304	1367	6G 2740 1561
1X	1234	1311	6H 2371 1630
1Y	1002	1046	7A 0350 1620
1Z	1067	1134	7B 0000 1621
2A	0033	25	7D 0300 1622
2B	0046	41	7E 0000 1623
2C	0065	61	8Z 2776 1617
2D	0117	115	9A 1344 1432
2E	0126	126	9B 1335 1422
2F	0251	273	9J 0771 1631
2G	0743	1013	9M 0557 617
2K	0164	172	9N 0563 624
2J	0123	122	
2K	0152	156	
2M	0134	135	
2N	0713	762	
2P	0724	773	
2Q	0272	314	
2R	0303	325	
2S	0307	332	
2T	0663	731	
2U	0115	112	
2V	0137	141	
2W	0232	251	
2X	0511	547	
2Y	0200	206	
2Z	0022	13	
3A	0314	341	
3B	0351	377	
3C	0372	421	
3D	0403	433	
3E	0416	447	
3F	0454	507	
3G	0464	520	
3H	0475	532	
3J	0512	550	
3K	0540	576	
3L	0346	373	
4A	0203	212	
4B	0207	217	
4C	0674	742	

P CONT

```

[LAP6 CONVERT
[BLOCKS 330-332
[QUARTERS 0-2
[PASS II
    B15
15 0701 RCG 7E
16 1310 117D+10 [DISPLAY
17 0016 NOP
20 0720 RDC i 7E
21 2347 217D+47 [BIN TO Q2
22 6314 #2Z JMP 3A
23 0435 KST i
24 6653 JMP 4D [RETURN
25 0044 SET 4
26 0003 3
27 6033 JMP 2A
30 6022 JMP 2Z
31 6663 JMP 2T
32 6022 JMP 2Z
[LINE DECODE
33 0057 #2A SET 17
34 0000 0
35 0011 CLR
36 4511 STC 2X
37 4200 STC 2Y
40 0066 SET i 6
41 0247 4L
42 0072 SET i 12
43 7774 -3 [CONSTANT
44 0073 SET i 13
45 6135 JMP 2M+1
[CHARACTER CHECK
46 1323 #2B LDH i 3
47 0070 SET i 10
50 4243 4P+4000
51 1430 SHD i 10
52 6126 JMP 2E [COMMENT
53 1430 SHD i 10
54 6203 JMP 4A [=
55 1430 SHD i 10
56 6132 JMP 2E+4 [=]
57 1430 SHD i 10
60 6137 JMP 2V [:
61 1430 SHD i 10
62 6207 JMP 4B [77
63 1430 SHD i 10
64 6123 JMP 2J [=]
[CHECK NUMBER
65 6404 #2C JMP 3D+1
66 6251 JMP 2F
67 6416 JMP 3E
70 6164 JMP 2H
71 1620 BSE i
72 0300 ROR
73 4075 STC p+2
74 1011 LDA 11

```

```

P CONT
75 0450      ROTATE N
76 0451      APO
77 6115      JMP 2U
[UNDEFINED
100 1000     LDA
101 0200     2Y
102 0303     ROR 3
103 1361     STH i 1
104 1303     LDH 3
105 1361     STH i 1
106 1000     LDA
107 0317     1L
110 1061     STA i 1
111 1020     LDA i
112 7777     -0
113 1061     STA i 1
114 6475     JMP 3H
115 1010 #2U LDA 10
116 6013     JMP 13
[ESPECIAL CHARACTER
117 1120 #2D ADA i
120 6243     2W+6000+11
121 4122     STC P+1
122 0140     JUMP TO DISPATCHER
[u
123 1020 #2J LDA i
124 0010     10
125 6013     JMP 13
[COMMENT, EQUALITY
126 1324 #2E LDH i 4
127 1460     SAE i
130 0066     66
131 0237     XSK i 17
132 6464     JMP 3G
133 6017     JMP 17
[BETA 13 RETURN
134 0017 #2M COM
135 2511     ADD 2X
136 6036     JMP 2A+3
[TEXT
137 6557 #2V JMP 9M
140 7000     JMP 1000 [LIST
141 6512     JMP 3J [TEXT COUNT
142 6147     JMP P+5 [+
143 6152     JMP 2K [EOL
144 6160     JMP 2K+6 [77
145 6663     JMP 2T [2 CHARS
146 6141     JMP 2V+2
[+=71, END TEXT
147 0233     XSK i 13
150 6132     JMP 2E+4 [NO ASSIGNMENT
151 6131     JMP 2E+3
[EOL IN TEXT
152 0072 #2K SET i 12
153 6142     JMP 2V+3
154 6314     JMP 3A [CHECK MS

```

```

P CONT
155 0233 XSK i 13
156 6523 JMP 3J+11
157 6145 JMP 2V+6 [ASSIGN
[77 IN TEXT
160 0233 XSK i 13
161 6207 JMP 4B [NO ASSIGN
162 6663 JMP 2T
163 6207 JMP 4B
[NUMBER, NOT TAG
164 1303 #2H LDH 3
165 1420 SHD i
166 1400 1400
167 6372 JMP 3C
170 6404 JMP 3D+1
171 6173 JMP P+2
172 6167 JMP P-3
173 1020 LDA i
174 3777 -4000 [CONSTANT
175 1140 ADM
176 0003 3
177 1020 LDA i
200 0000 #2Y NUMBER
201 0303 ROR 3
202 6013 JMP 13
[#
203 6351 #4A JMP 3B
204 6557 JMP 9M
205 6017 JMP 17 [LIST
206 6567 JMP 4Q [CONVERT
[77-PREPARE SAVE BIN
207 6557 #4B JMP 9M
210 7400 JMP 1400 [LIST
211 6611 JMP 4R [CONVERT
[i
212 1020 #4F LDA i
213 0020 20 [CONSTANT
214 6013 JMP 13
[p
215 2457 #4G ADD 1P
216 6013 JMP 13
[-
217 0073 #4H SET i 13
220 6134 JMP 2M
221 6046 JMP 2B
[|
222 2511 #4J ADD 2X
223 0303 ROR 3
224 6036 JMP 2A+3
[TAG
225 6372 #4K JMP 3C
226 1323 LDH i 3
227 6046 JMP 2B
[EOL
230 0237 #4E XSK i 17
231 6017 JMP 17
[DISPATCHER

```

P CONT  
 232 6230 #2W JMP 4E  
 233 6046 JMP 2B [DEL  
 234 6046 JMP 2B  
 235 6212 JMP 4F  
 236 6215 JMP 4G  
 237 6217 JMP 4H  
 240 6044 JMP 2B-2  
 241 6222 JMP 4J  
 242 6225 JMP 4K

## [CHARACTER TABLE

243 0022 #4P 0022  
 244 6665 6665  
 245 6170 6170  
 246 7762 7762

## [SAVE LETTERS

247 0000 #4L 0  
 250 0000 0

## [CHECK LETTER

251 1120 #2F ADA i  
 252 7765 -12  
 253 0451 APO  
 254 6117 JMP 2D  
 255 1303 LDH 3  
 256 1366 STH i 6  
 257 0232 XSK i 12  
 260 6046 JMP 2B  
 261 0246 ROL 6  
 262 2247 ADD 4L  
 263 0066 SET i 6  
 264 7700 6A-6G-1  
 265 0072 SET i 12  
 266 2641 6A-1  
 267 0226 XSK i 6  
 270 6272 JMP 2Q  
 271 6040 JMP 2B-6  
 272 1472 #2Q SAE i 12  
 273 6267 JMP 2Q-3  
 274 1020 LDA i  
 275 0077 6G-6A+1  
 276 2006 ADD 6  
 277 1120 ADA i  
 300 7740 6A-6C-1  
 301 0471 APO i  
 302 6307 JMP 2S  
 303 1120 #2R ADA i  
 304 0037 6C-6A+1  
 305 0245 ROL 5  
 306 6013 JMP 13

## [SUBSTITUTE

307 1120 #2S ADA i  
 310 2737 6G-1  
 311 4006 STC 6  
 312 1006 LDA 6  
 313 6013 JMP 13

## [CONVERT SUBROUTINES

## [MS ADDRESS CHECK

P CONT  
 314 1020 #3A LDA i  
 315 0001 I [CONSTANT  
 316 1160 ADM i  
 317 0000 #1L 0  
 320 1000 LDA  
 321 0003 3  
 322 1560 BCL i  
 323 4000 4000  
 324 1120 ADA i  
 325 4400 -3377  
 326 0451 APO  
 327 6000 JMP 0  
 330 0720 RDC i 7B  
 331 6350 617A  
 332 2331 ADD P-1  
 333 1120 ADA i  
 334 1001 1001  
 335 0451 APO  
 336 4340 STC P+2  
 337 0700 RDC 7B  
 340 7777 71777  
 341 2331 ADD P-10  
 342 2315 ADD 3A+1  
 343 4331 STC P-12  
 344 2003 ADD 3  
 345 1120 ADA i  
 346 7377 #3L -400  
 347 4003 STC 3  
 350 6000 JMP 0

[B

351 0050 #3B SET 10  
 352 0000 0  
 353 6372 JMP 3C  
 354 6401 JMP 3D-2  
 355 6362 JMP P+5  
 356 6372 JMP 3C  
 357 6404 JMP 3D+1  
 360 6362 JMP P+2  
 361 6356 JMP P-3  
 362 1000 LDA  
 363 0200 2Y  
 364 0303 ROR 3  
 365 1560 BCL i  
 366 4000 4000  
 367 4457 STC 1P  
 370 6464 JMP 3G  
 371 6010 JMP 10

[SPACE AVOID

372 0051 #3C SET 11  
 373 0000 0  
 374 1323 LDH i 3  
 375 1420 SHD i  
 376 1400 1400  
 377 6374 JMP 3C+2  
 400 6011 JMP 11

[NUMBER CHECK

P CONT  
 401 0011 CLR  
 402 4200 STC 2Y  
 403 1303 #3D LDH 3  
 404 1120 ADA i  
 405 7766 -11  
 406 0471 APO i  
 407 6000 JMP 0  
 410 1303 LDH 3  
 411 2200 ADD 2Y  
 412 0243 ROL 3  
 413 4200 STC 2Y  
 414 0220 XSK i 0  
 415 6000 JMP 0

## [SYMBOL CHECK

416 1323 #3E LDH i 3  
 417 1120 ADA i  
 420 7754 -23  
 421 0451 APO  
 422 6000 JMP 0  
 423 1120 ADA i  
 424 7745 -32  
 425 0471 APO i  
 426 6000 JMP 0  
 427 1000 LDA  
 430 0200 2Y  
 431 0470 AZE i  
 432 6000 JMP 0  
 433 0303 ROR 3  
 434 1260 MUL i  
 435 0032 32  
 436 1120 ADA i  
 437 1722 6B-32-24  
 440 4010 STC 10  
 441 1303 LDH 3  
 442 2010 ADD 10  
 443 4010 STC 10

## [FIND MARK REGISTER

444 1303 LDH 3  
 445 1120 ADA i  
 446 2354 6D-24  
 447 4011 STC 11  
 450 2200 ADD 2Y  
 451 0303 ROR 3  
 452 0220 XSK i 0  
 453 6000 JMP 0

## [UP P

454 1020 #3F LDA i  
 455 0001 1  
 456 1160 ADM i  
 457 0020 #1P 20  
 460 1560 BCL i  
 461 4000 4000  
 462 4457 STC 1P  
 463 6000 JMP 0

## [FIND EOL

464 0051 #3G SET 11

```

P CONT
465 0000      0
466 1020      LDA i
467 0012      12
470 1403      SHD 3
471 6011      JMP 11
472 1423      SHD i 3
473 6011      JMP 11
474 6472      JMP P-2
[ERROR TABLE ADDRESS CHECK
475 1020 #3H LDA i
476 0004      4
477 2001      ADD 1
500 4502      STC P+2
501 1440      SAE
502 0452      NEXT SLOT STILL ZERO?
503 0451      APO
504 6000      JMP 0
505 2001      ADD 1
506 2043      ADD 2B-3 [-3
507 4001      STC 1
510 6000      JMP 0
[TEXT COUNT
511 0000 #2X 0 [FOR ASSIGN
512 0052 #3J SET 12
513 0000      0
514 0073      SET i 13
515 7775      -2      [CONSTANT
516 0074      SET i 14
517 4510      2X-1+4000
520 1020      LDA i
521 1414      1414
522 4511      STC 2X
523 1323      LDH i 3
524 1420      SHD i
525 7100      7100  [-4
526 6543      JMP 3K+3
527 1420      SHD i
530 7700      7700
531 6541      JMP 3K+1
532 1374      STH i 14
533 1420      SHD i
534 1200      1200
535 6542      JMP 3K+2
536 0233      XSK i 13
537 6523      JMP 3J+11
540 0232 #3K XSK i 12
541 0232      XSK i 12
542 0232      XSK i 12
543 6012      JMP 12
[PASS PRESET
544 1020 #1T LDA i
545 6350      617A
546 4331      STC 1L+12
547 4317      STC 1L
550 2213      ADD 4F+1
551 4457      STC 1P

```

```

P CONT
552 0063 SET i 3
553 7401 7401
554 0062 SET i 2
555 1017 1017
556 6000 JMP 0
[CHECK LIST
557 1520 #9M SRO i
560 7777 7777
561 0220 XSK i 0 [CONVERT
562 6000 JMP 0 [LIST
[LIST-PASS II
563 6544 #9N JMP 1T [PASS PRESET
564 0720 RDC i 7E
565 2327 217D+27
566 7001 JMP 1001
[DO NOT CHANGE ANYTHING BEFORE THIS POINT WITHOUT ALSO
    CHANGING LIST
[ORIGIN-CONVERT
567 1000 #4Q LDA
570 0457 1P
571 1560 BCL i
572 7000 7000
573 2707 ADD 4C+13 [777
574 4002 STC 2
575 2457 ADD 1P
576 0350 SCR 10
577 1560 BCL i
600 0001 1
601 2721 ADD 2P-3
602 1400 SHD
603 4746 2G+3+4000
604 6610 JMP P+4
605 4724 STC 2P
606 6743 JMP 2G
607 6713 JMP 2N
610 6017 JMP 17
[77-CONVERT. PREPARE FOR SB
611 1000 #4R LDA
612 0674 4C
613 0470 AZE i
614 6653 JMP 4D
615 0071 SET i 11
616 7764 -13
617 0241 ROL 1
620 0451 APO
621 6624 JMP P+3
622 0231 XSK i 11
623 6617 JMP P-4
624 0070 SET i 10
625 0000 0
626 1500 SRO
627 0674 4C
630 6634 JMP P+4
631 0231 XSK i 11
632 0230 XSK i 10
633 6626 JMP P-5

```

```

P CONT
634 1000 LDA
635 0010 10
636 0303 ROR 3
637 4012 STC 12
640 6743 JMP 2G [WRITE BINARY
641 0724 WRC i 7E
642 0330 7D+30
643 1020 LDA i
644 0000 #4N LAST MEM
645 5000 STC 1000
646 2001 ADD 1
647 5001 STC 1001
650 0720 RDC i 7E
651 3334 317D+34 [READ LNS
652 6015 JMP 15
ENO BINARY
653 0011 #4D CLR
654 4011 STC 11
655 4010 STC 10
656 0724 WRC i 7E
657 0330 7D+30
660 0076 SET i 16
661 7300 717D
662 6015 JMP 15
[ASSIGNMENT SR
663 1000 #2T LDA
664 0457 1P
665 0350 SCR 10
666 1620 BSE i
667 0240 ROL
670 4672 STC P+2
671 2315 ADD 3A+1
672 0450 ROTATE N
673 1620 BSE i
674 0000 #4C 0
675 4674 STC P-1
676 1000 LDA
677 0511 2X [ASSIGN
700 0053 SET 13
701 0000 0
702 1062 STA i 2
703 6454 JMP 3F
704 0202 XSK 2
705 6013 JMP 13
706 0062 SET i 2
707 0777 777 [CONSTANT
710 6743 JMP 2G
711 6713 JMP 2N
712 6013 JMP 13
[RDCL BINARY
713 0047 #2N SET 7
714 0000 0
715 2457 ADD 1P
716 0450 AZE
717 6723 JMP P+4
720 1020 LDA i

```

```

P CONT
721 2340 217D+40
722 4724 STC 2P
723 0720 RDC i 7E
724 2342 #2P 217D+42
725 2724 ADD P-1
726 2750 ADD 2G+5
727 4731 STC P+2
730 0720 RDC i 7E
731 0000 FOURTH BIN BLK
732 2724 ADD 2P
733 1040 STA
734 0746 2G+3
735 1040 STA
736 0756 2G+13
737 1120 ADA i
740 0002 2
741 4724 STC 2P
742 6007 JMP 7
[BINARY FULL
743 0047 #2G SET 7
744 0000 0
745 0726 WRI i 7E
746 2340 217D+40
747 1020 LDA i
750 1001 1001 [CONSTANT
751 2746 ADD P-3
752 4754 STC P+2
753 0726 WRI i 7E
754 0713 2ND BIN BLK
755 0727 CHK i 7E
756 2340 217D+40
757 0450 AZE
760 6745 JMP 2G+2
761 2315 ADD 3A+1
762 2756 ADD P-4
763 4765 STC P+2
764 0727 CHK i 7E
765 0713 2ND BIN BLK
766 0450 AZE
767 6745 JMP 2G+2
770 6007 JMP 7
[PASS I
B1000
1000 7335 JMP 9B [LIST WA
1001 7344 JMP 9A [LIST FILE
[CLEAR TABLES Enter here
1002 0061 #1Y SET i 1
1003 2776 8Z [LAST MNEMONIC
1004 0062 SET i 2
1005 0134 8Z-6A [LENGTH OF MNEMONIC TABLE
1006 0720 RDC i 7E
1007 5337 517D+37
1010 0011 CLR
1011 1061 STA i 1
1012 0222 XSK i 2
1013 7011 JMP P-2

```

P	CONT
1014	0061 SET i 1
1015	1377 1377
1016	1061 STA i 1
1017	0201 XSK 1
1020	7016 JMP P-2
1021	0017 COM
1022	0061 SET i 1
1023	2351 6F-1
1024	0062 SET i 2
1025	7751 -26
1026	1061 STA i 1
1027	0222 XSK i 2
1030	7026 JMP P-2
1031	0065 SET i 5
1032	2352 6F
1033	6544 JMP 1T
1034	4674 STC 4C
1035	0061 SET i 1
1036	6431 6E-4000
1037	1000 LDA
1040	0457 1P
1041	1045 STA 5
	[CHARACTER CHECK]
1042	6314 JMP 3A
1043	0044 SET 4
1044	0003 3
1045	1323 #1A LDH i 3
1046	0070 SET i 10
1047	0243 4P [CHAR TABLE
1050	1430 SHD i 10
1051	7122 JMP 1D [#
1052	1430 SHD i 10
1053	7071 JMP 1B [COMMENT
1054	1430 SHD i 10
1055	7077 JMP 1C [=
1056	1430 SHD i 10
1057	7125 JMP 1E [=
1060	1430 SHD i 10
1061	7236 JMP 1F [=
1062	1430 SHD i 10
1063	7262 JMP 1G [=77
1064	1460 SAE i
1065	0012 12
1066	7045 JMP 1A
1067	6454 #1Z JMP 3F
1070	7042 JMP 1A-3
	[COMMENT]
1071	6464 #1B JMP 3G
1072	1324 LDH i 4
1073	1460 SAE i
1074	0066 66
1075	7067 JMP 1Z
1076	7042 JMP 1A-3
	[=
1077	1000 #1C LDA
1100	0457 1P

P CONT

```

1101 1445      SAE 5
1102 7105      JMP 1H
1103 6351      JMP 3B
1104 7037      JMP 1A-6
1105 2174 #1H ADD 2Y-4
1106 1560      BCL i
1107 4000      4000  [CONSTANT
1110 1065      STA i 5
1111 0225      XSK i 5
1112 1000      LDA
1113 0005      5
1114 1460      SAE i
1115 2400      6D
1116 6000      JMP 0
1117 2515      ADD 3J+3
1120 4005      STC 5
1121 6000      JMP 0
[TAG
1122 7154 #1D JMP 1Q
1123 7167      JMP 1R
1124 7045      JMP 1A
[=
1125 0042 #1E SET 2
1126 0003      3
1127 0043      SET 3
1130 0004      4
1131 7154      JMP 1Q
1132 0043      SET 3
1133 0002      2
1134 0044      SET 4
1135 0002      2
1136 2011      ADD 11
1137 5145      STC P+6
1140 2010      ADD 10
1141 5147      STC P+6
1142 6033      JMP 2A
1143 7042      JMP 1A-3
1144 0071      SET i 11
1145 0000      RESET
1146 0070      SET i 10
1147 0000      RESET
1150 1000      LDA
1151 0511      2X
1152 7171      JMP 1R+2
1153 7042      JMP 1A-3
[GET #,LETTER SYMBOL
1154 0047 #1Q SET 7
1155 0000      0
1156 6372      JMP 3C
1157 6401      JMP 3D-2
1160 7234      JMP 1X
1161 6416      JMP 3E
1162 7234      JMP 1X
1163 5175      STC 1R+6
1164 1303      LDH 3
1165 5224      STC 1J+4

```

```

? CONT
1166 6007 JMP 7
    [ASSIGN TO TABLE
1167 1000 #1R LDA
1170 0457 1P
1171 0047 SET 7
1172 0000 0
1173 1050 STA 10
1174 1020 LDA i
1175 0450 NUM ROTATE
1176 1620 BSE i
1177 0240 ROL
1200 5202 STC P+2
1201 3107 ADD 1H+2
1202 0450 ROTATE
1203 1611 BSE 11
1204 1051 STA 11
1205 1020 LDA i
1206 7377 -400
1207 1140 ADM
1210 0010 10
1211 1010 LDA 10
1212 0450 AZE
1213 7220 JMP 1J
1214 2317 ADD 1L
1215 1050 STA 10
1216 6475 JMP 3H
1217 6007 JMP 7
    [MULTIPLE DEFINITION
1220 1000 #1J LDA
1221 1175 1R+6
1222 1361 STH i 1
1223 1020 LDA i
1224 0000 LETTER
1225 1361 STH i 1
1226 1010 LDA 10
1227 1061 STA i 1
1230 1000 LDA
1231 0317 1L
1232 1061 STA 1 1
1233 7215 JMP 1J-3
    [IGNORE ILLEGAL =
1234 6464 #1X JMP 3G
1235 7042 JMP 1A-3
    [TEXT
1236 6512 #1F JMP 3J [TEXT COUNT
1237 7244 JMP 1M [
1240 7251 JMP 1K [EOL
1241 7257 JMP 1N [77
1242 6454 JMP 3F [ASSIGN
1243 7236 JMP 1F
    [
1244 0233 #1M XSK i 13
1245 7247 JMP P+2 [NO ASSIGN
1246 6454 JMP 3F [ASSIGN
1247 6464 JMP 3G [FIND EOL
1250 7042 JMP 1A-3

```

P CONT

```

[TEXT EOL
1251 0072 #1K SET i 12
1252 7237 JMP 1F+1
1253 6314 JMP 3A [CHECK MS
1254 0233 XSK i 13
1255 6523 JMP 3J+11
1256 7242 JMP 1F+4 [ASSIGN

[TEXT 77
1257 0233 #1N XSK i 13
1260 7262 JMP 1G
1261 6454 JMP 3F [ASSIGN

[77
1262 6557 #1G JMP 9M
1263 6563 JMP 9N
1264 1000 LDA
1265 0457 1P
1266 1445 SAE 5
1267 7105 JMP 1H
1270 1020 LDA i
1271 7776 -1
1272 2005 ADD 5
1273 4644 STC 4N
1274 0724 WRC i 7E
1275 3334 317D+34

[CLEAR AND WRITE BINARY
1276 0065 SET i 5
1277 1377 1377
1300 0011 CLR
1301 1065 STA i 5
1302 0205 XSK 5
1303 7301 JMP P-2
1304 1020 #1U LDA i
1305 3340 317D+40
1306 1040 STA
1307 1322 1S
1310 5312 STC P+2
1311 0726 WRI i 7E
1312 0000 ZERO TO BINARY
1313 1020 LDA i
1314 0001 1
1315 3312 ADD P-3
1316 1460 SAE i
1317 3350 317D+50
1320 7310 JMP 1U+4
1321 0727 CHK i 7E
1322 0000 #1S BINARY
1323 0450 AZE
1324 7304 JMP 1U
1325 3314 ADD 1S-6
1326 1140 ADM
1327 1322 1S
1330 1460 SAE i
1331 3350 317D+50
1332 7321 JMP 1S-1
1333 6544 JMP 1T
1334 6020 JMP 20

```

P CONT

[LIST PRESET  
[WORKING AREA

1335 1000 #9B LDA  
 1336 2371 6H  
 1337 4771 STC 9J  
 1340 1000 LDA  
 1341 2372 6H+1  
 1342 4772 STC 9J+1  
 1343 7347 JMP 9A+3

[FILE

1344 0720 #9A RDC i 7E  
 1345 0330 7D+30  
 1346 0011 CLR  
 1347 4560 STC 9M+1  
 1350 3377 ADD 1377  
 1351 1620 BSE i  
 1352 6000 6000  
 1353 4545 STC 1T+1  
 1354 3376 ADD 1376  
 1355 1040 STA  
 1356 0337 3L-7  
 1357 1620 BSE i  
 1360 0020 i ERDC i u  
 1361 4330 STC 1L+11  
 1362 1020 LDA i  
 1363 0016 NOP  
 1364 5034 STC 1A-11  
 1365 7002 JMP 1Y EPASS I  
 B1376  
 1376 0700 RDC 7B  
 1377 0350 7A  
 B2642

[MNEMONICS

2642 4746 #6A ↑ TS↓  
 2643 4046 ↑ MS↓  
 2644 4627 ↑ SD↓  
 2645 3653 ↑ KX↓  
 2646 3745 ↑ LR↓  
 2647 4545 ↑ RR↓  
 2650 4546 ↑ RS↓  
 2651 3746 ↑ LS↓  
 2652 4346 ↑ PS↓  
 2653 4542 ↑ RO↓  
 2654 0000 0 [UNDEFINED  
 2655 0000 0  
 2656 0000 0

P CONT  
2657 4340      ↑PM↓  
2660 4740      ↑TM↓ [MAG TAPE TWO=740  
2661 2437      ↑AL↓  
2662 2446      ↑AS↓  
2663 2424      ↑AA↓  
2664 4024      ↑MA↓  
2665 4037      ↑ML↓  
2666 3740      ↑LM↓  
2667 3337      ↑HL↓  
2670 3346      ↑HS↓  
2671 2746      ↑DS↓  
2672 3046      ↑ES↓  
2673 4246      ↑QS↓  
2674 3725      ↑LB↓  
2675 3025      ↑EB↓  
2676 4225      ↑OB↓  
2677 0000      0  
2700 2627      #6C ↑CD↓  
2701 2724      ↑DA↓  
2702 2646      ↑CS↓  
2703 4335      ↑PJ↓  
[SUBSTITUTE MNEMONICS  
2704 4733      ↑TH↓  
2705 2455      ↑AZ↓  
2706 3430      ↑IE↓  
2707 4526      ↑RC↓  
2710 4524      ↑RA↓  
2711 2445      ↑AR↓  
2712 4341      ↑PN↓

P CONT  
 2713 4026      †MC†  
 2714 4736      †TK†  
 2715 4646      †SS†  
 2716 4143      †NP†  
 2717 3024      †EA†  
 2720 4224      †OA†  
 2721 3037      †EL†  
 2722 5534      †ZI†  
 2723 3142      †FO†  
 2724 5555      †ZZ†  
 2725 2645      †CR†  
 2726 3245      †GR†  
 2727 3045      †ER†  
 2730 2540      †BM†  
 2731 2652      †CW†  
 2732 3252      †GW†  
 2733 3452      †IW†  
 2734 3626      †KC†  
 2735 2736      †DK†  
 2736 5245      †WR†  
 2737 5237      †WL†

[CODES  
 2740 2000 #6G ADD  
 2741 4000 STC  
 2742 6000 JMP  
 2743 0000 HLT  
 2744 0005 ZTA  
 2745 0010 ENI  
 2746 0011 CLR  
 2747 0014 ATR  
 2750 0015 RTA  
 2751 0016 NOP  
 2752 0017 COM  
 2753 0415 KST  
 2754 0440 SNS

P CONT

2755 0446	PIN
2756 0450	AZE
2757 0451	APO
2760 0452	LZE
2761 0453	IBZ
2762 0454	OVF
2763 0455	ZZZ
2764 0700	RDC
2765 0701	RCG
2766 0702	RDE
2767 0703	MTB
2770 0704	WRC
2771 0705	WCG
2772 0706	WRI
2773 0707	CHK
2774 0515	KBD
2775 0516	RSW
2776 0517 #8Z	LSW

7A=350  
7B=0  
7D=300  
7E=0  
6B=2000 [SYMBOL ASSIGNMENTS  
6D=2400 [MARK REGISTERS  
6E=2432 [ERRORS  
6F=2352 [MEMORY ALLOCATION  
6H=2371 [PARTIAL NUMBERS  
9J=771  
[LAP6 CONVERT

	VALUE	LINE
4A	0525	520
5A	0021	13
5B	0140	135
5C	0223	225
5D	0152	150
5E	0160	157
5F	0217	220
5G	0214	215
5H	0210	210
5J	0200	177
5K	0042	35
5L	0302	307
5M	0237	242
5P	0265	271
5Q	0074	70
5R	0055	50
5S	0325	332
5T	0257	262
5U	0104	100
5V	0117	113
5W	0327	336
5X	0513	514
5Y	0502	512
5Z	0476	510
6B	2000	664
6E	2432	665
6F	2352	666
6J	0337	346
6K	0365	374
6L	0377	407
6M	0411	421
6N	0431	441
6P	0452	463
6R	0461	472
7D	0300	670
7E	0000	667

P CONT

[LAP6 CONVERT DISPLAYS  
 [BLOCKS 310-311  
 [QUARTERS 0-1  
 B14  
 14 6452 JMP 6P [DS META  
 15 0701 RCG 7E  
 16 1310 117D+10  
 17 0076 SET i 16  
 20 7300 717D  
 [DISPLAY ERRORS  
 21 1000 #5A LDA  
 22 2432 6E  
 23 0471 APO i  
 24 0450 AZE  
 25 6074 JMP 5Q [ERRORS  
 [MEMORY ALLOCATION  
 26 1000 LDA  
 27 2352 6F  
 30 0451 APO  
 31 6327 JMP 5W [NO MEM ALLOCATE  
 32 0052 SET 12  
 33 1000 1000 [LAST ALLOCATE ADDRESS  
 34 0073 SET i 13  
 35 2351 6F-1  
 36 0074 SET i 14  
 37 0024 24  
 40 0063 SET i 3  
 41 2351 6F-1  
 42 0064 #5K SET i 4  
 43 4501 SY-4000  
 44 0061 SET i 1  
 45 0114 114  
 46 6140 JMP 5B [DISPLAY LABEL  
 47 0044 SET 4  
 50 0003 3  
 51 0071 SET i 11  
 52 7765 -12  
 53 0070 SET i 10  
 54 0200 200  
 55 0061 #5R SET i 1  
 56 0234 234  
 57 1024 LDA i 4  
 60 0451 APO  
 61 6042 JMP 5K  
 62 6161 JMP 5E+1  
 63 1020 LDA i  
 64 0036 36 [-  
 65 6224 JMP 5C+1  
 66 6160 JMP 5E  
 67 6302 JMP 5L [LINE LOWER  
 70 6327 JMP 5W [EOL  
 71 0231 XSK i 11  
 72 6055 JMP 5R  
 73 6042 JMP 5K  
 [ERRORS  
 74 0052 #5Q SET 12

```

P CONT
75 1001    1001
76 0073    SET i 13
77 2431    6E-1 [BEGIN ERRORS
100 0074   SET i 14
101 0036   36
102 0063   SET i 3
103 6431    6E-4000
104 0064 #5U SET i 4
105 4475    5Z-4000
106 0061    SET i 1
107 0260    260
110 6140    JMP 5B [DISPLAY LABEL
111 0044    SET 4
112 0003    3
113 0071    SET i 11
114 7765    -12
115 0070    SET i 10
116 0200    200
117 0061 #5V SET i 1
120 0164    164
121 1324    LDH i 4
122 0470    AZE i
123 6104    JMP 5U
124 6152    JMP 5D [DISPLAY SYMBOL
125 6210    JMP 5H [SPACE
126 6160    JMP 5E
127 6210    JMP 5H
130 1024    LDA i 4
131 0450    AZE
132 6161    JMP 5E+1 [2ND LINE
133 6302    JMP 5L
134 6026    JMP 5A+5 [EOL
135 0231    XSK i 11
136 6117    JMP 5V
137 6104    JMP 5U
          [DISPLAY LABEL
140 0070 #5B SET i 10
141 0300    300
142 0045    SET 5
143 0000    0
144 1324    LDH i 4
145 1420    SHD i
146 1200    1200
147 6005    JMP 5
150 6223    JMP 5C
151 6144    JMP 5B+4
          [DISPLAY SYMBOL
152 0045 #5D SET 5
153 0000    0
154 6223    JMP 5C
155 1324    LDH i 4
156 6223    JMP 5C
157 6005    JMP 5
          [DISPLAY LINE NUMBER
160 1024 #5E LDA i 4
161 0045    SET 5

```

```

P CONT
162 0000    0
163 0241    ROL 1
164 4217    STC 5F
165 6214    JMP 5G
166 0450    AZE
167 6200    JMP 5J
170 6210    JMP 5H
171 0450    AZE
172 6202    JMP 5J+2
173 6210    JMP 5H
174 0450    AZE
175 6204    JMP 5J+4
176 6210    JMP 5H
177 6206    JMP 5J+6
200 6224 #5J JMP 5C+1
201 6214    JMP 5G
202 6224    JMP 5C+1
203 6214    JMP 5G
204 6224    JMP 5C+1
205 6214    JMP 5G
206 6224    JMP 5C+1
207 6005    JMP 5
      [LEADING ZEROS
210 1020 #5H LDA i
211 0024    24
212 2001    ADD 1
213 4001    STC 1
      [GET DIGIT
214 2217 #5G ADD 5F
215 0243    ROL 3
216 1060    STA i
217 0000 #5F NUMBER
220 1560    BCL i
221 7761    7761
222 6000    JMP 0
      [DISPLAY
223 0241 #5C ROL 1
224 1120    ADA i
225 0525    4A [GRID PATTERNS
226 4006    STC 6
227 2010    ADD 10
230 1746    DSC 6
231 1766    DSC i 6
232 1020    LDA i
233 0004    4
234 2001    ADD 1
235 4001    STC 1
236 6000    JMP 0
      [FORWARD 1 FRAME
237 1000 #5M LDA
240 0014    14
241 2003    ADD 3
242 1060    STA i
243 0000    NEW FRAME
244 1560    BCL i
245 4000    4000

```

P CONT

246 0017 COM  
 247 4254 STC P+5  
 250 2012 ADD 12  
 251 1560 BCL i  
 252 4000 4000  
 253 1120 ADA i  
 254 0000 WHO KNOWS  
 255 0451 APO  
 256 6263 JMP ST+4  
 257 0043 #ST SET 3  
 260 0243 SM+4  
 261 0071 SET i 11  
 262 7776 -1  
 263 0011 CLR  
 264 6325 JMP SS  
 [BACK 1 FRAME  
 265 1000 #SP LDA  
 266 0014 14  
 267 0017 COM  
 270 2003 ADD 3  
 271 1040 STA  
 272 0243 SM+4  
 273 1560 BCL i  
 274 4000 4000  
 275 0017 COM  
 276 2013 ADD 13  
 277 0471 APO i  
 300 6263 JMP ST+4  
 301 6257 JMP ST  
 [LINE LOWER  
 302 0045 #5L SET 5  
 303 0000 0  
 304 1020 LDA i  
 305 7740 -37  
 306 2010 ADD 10  
 307 4010 STC 10  
 310 0415 KST  
 311 6325 JMP SS  
 312 0515 KBD  
 313 1420 SHD i  
 314 4500 4500 LR  
 315 6015 JMP 15  
 316 0470 AZE i FORWARD  
 317 6237 JMP SM  
 320 1420 SHD i  
 321 4400 4400 EQ-BACKWARD  
 322 6265 JMP SP  
 323 1460 SAE i  
 324 0012 12  
 325 0225 #5S XSK i 5  
 326 6005 JMP 5  
 [SYMBOL TABLE  
 [MAKE NEW TABLE  
 327 0061 #5W SET i 1  
 330 6377 2400-4000  
 331 0062 SET i 2

P CONT

332	1377	1377 [LN TABLE
333	0063	SET i 3
334	0001	1
335	0066	SET i 6
336	7766	-11
337	0064 #6J	SET i 4
340	0024	24 EA
341	0065	SET i 5
342	7745	-32
343	1022	LDA i 2
344	0470	AZE i
345	6365	JMP 6K
346	1000	LDA
347	0003	3 ENUMBER
350	1361	STH i 1
351	1000	LDA
352	0004	4 LETTER
353	1361	STH i 1
354	1020	LDA i
355	0400	400
356	2002	ADD 2
357	4361	STC P+2
360	1000	LDA
361	0000	MEM ASSIGN
362	1061	STA i 1
363	1002	LDA 2 [LN
364	1061	STA i 1
365	0224 #6K	XSK i 4 [UP LETTER
366	0225	XSK i 5
367	6343	JMP 6J+4
370	0223	XSK i 3 [UP NUMBER
371	0226	XSK i 6
372	6337	JMP 6J
373	0052	SET 12
374	0001	1
375	0011	CLR
376	1061	STA i 1 [LAST ENTRY
		[DISPLAY SYMBOLS
377	0073 #6L	SET i 13
400	2377	2400-1 [1ST ENTRY
401	0074	SET i 14
402	0036	36
403	1000	LDA
404	2400	2400
405	0470	AZE i
406	6015	JMP 15 [NO SYMBOLS
407	0063	SET i 3
410	6377	2400-4000
411	0064 #6M	SET i 4
412	4512	5X-4000
413	0061	SET i 1
414	0260	260
415	6140	JMP 5B [1ST LABEL
416	0061	SET i 1
417	0210	210
420	0070	SET i 10

P CONT

421 0240 240  
 422 6142 JMP 5B+2 [2ND LABEL  
 423 0044 SET 4  
 424 0003 3  
 425 0071 SET i 11  
 426 7765 -12  
 427 0070 SET i 10  
 430 0200 200  
 431 0061 #6N SET i 1  
 432 0114 114  
 433 1324 LDH i 4  
 434 0470 AZE i  
 435 6411 JMP 6M  
 436 6152 JMP 5D [DISPLAY SYMBOL  
 437 6210 JMP 5H [SPACE  
 440 6160 JMP 5E [VALUE  
 441 6210 JMP 5H [SPACE  
 442 6210 JMP 5H  
 443 6210 JMP 5H  
 444 6160 JMP 5E [LINE #  
 445 6302 JMP 5L [LOWER LINE  
 446 6461 JMP 6R [EOL-SAVE TABLE  
 447 0231 XSK i 11  
 450 6431 JMP 6N  
 451 6411 JMP 6M  
 [DISPLAY SYMBOL TABLE META  
 452 0076 #6P SET i 16  
 453 7300 717D  
 454 0720 RDC i 7E  
 455 3312 317D+12  
 456 0700 RDC 7E  
 457 4313 417D+13  
 460 6327 JMP 5W  
 461 0726 #6R WRI i 7E  
 462 3312 317D+12  
 463 0726 WRI i 7E  
 464 4313 417D+13  
 465 0727 CHK i 7E  
 466 0312 7D+12  
 467 0450 AZE  
 470 6461 JMP 6R  
 471 0727 CHK i 7E  
 472 0313 7D+13  
 473 0450 AZE  
 474 6461 JMP 6R  
 475 6015 JMP 15  
 [LABELS  
 476 3045  
 477 4542  
 500 4546  
 501 1214 #5Z !ERRORS  
 !  
 502 4030  
 503 4042  
 504 4554  
 505 1424

P CONT  
 506 3737  
 507 4226  
 510 2447  
 511 3442  
 512 4112 #5Y !MEMORY ALLOCATION  
 !

513 4654  
 514 4025  
 515 4237  
 516 4612 #5X !SYMBOLS  
 517 5124  
 520 3750  
 521 3014  
 522 1437  
 523 3441  
 524 3012      VALUE LINE  
 !

## [GRID PATTERNS

525 4136 #4A 4136 [0  
 526 3641 3641  
 527 2101 2101  
 530 0177 0177  
 531 4523 4523  
 532 2151 2151  
 533 4122 4122  
 534 2651 2651  
 535 2414 2414 [4  
 536 0477 0477  
 537 5172 5172  
 540 0651 0651  
 541 1506 1506  
 542 4225 4225  
 543 4443 4443 [7  
 544 6050 6050  
 545 5126 5126  
 546 2651 2651  
 547 5120 5120  
 550 3651 3651  
 551 0000 0000 [EOL  
 552 0000 0000  
 553 4020 4020 [DEL  
 554 2055 2055  
 555 0000 0000 [SPACE  
 556 0000 0000  
 557 0101 0101 [i  
 560 0126 0126  
 561 3700 3700 [p  
 562 3424 3424  
 563 0404 0404 [-  
 564 0404 0404  
 565 0404 0404 [+  
 566 0437 0437  
 567 0000 0000 [|  
 570 0077 0077  
 571 3614 3614 [#  
 572 1436 1436

P CONT  
573 0000 0000 CASE  
574 0000 0000  
575 4477 4477 CA  
576 7744 7744  
577 5177 5177  
600 2651 2651  
601 4136 4136  
602 2241 2241  
603 4177 4177 ID  
604 3641 3641  
605 4577 4577  
606 4145 4145  
607 4477 4477  
610 4044 4044  
611 4136 4136 CG  
612 2645 2645  
613 1077 1077  
614 7710 7710  
615 7741 7741  
616 0041 0041  
617 4142 4142 CJ  
620 4076 4076  
621 1077 1077  
622 4324 4324  
623 0177 0177  
624 0301 0301  
625 3077 3077 CM  
626 7730 7730  
627 3077 3077  
630 7706 7706  
631 4177 4177  
632 7741 7741  
633 4477 4477 CP  
634 3044 3044  
635 4276 4276  
636 0376 0376  
637 4477 4477  
640 3146 3146  
641 5121 5121 CS  
642 4651 4651  
643 4040 4040  
644 4077 4077  
645 0177 0177  
646 7701 7701  
647 0176 0176 CV  
650 7402 7402  
651 0677 0677  
652 7701 7701  
653 1463 1463  
654 6314 6314  
655 0770 0770 CY  
656 7007 7007  
657 4543 4543  
660 6151 6151  
661 0404 0404 CMETA  
662 0404 0404

P CONT  
663 2504 2504 [ARROW  
664 0416 0416  
665 4141 4141 [BACKWARD  
666 0077 0077 [COMMENT  
667 1212 1212 [=  
670 1212 1212  
6B=2000  
6E=2432  
6F=2352  
7E=0  
7D=300  
[LAP6 CONVERT DISPLAYS

VALUE	LINE
1A	0601
1B	0204
1C	0446
1D	0225
1E	0332
1G	0316
1J	0646
1K	0703
1M	0425
1N	0735
1P	0640
1Q	0621
1R	0530
1S	0617
1T	0654
1U	0455
1V	0515
1W	0422
1X	0403
1Y	0712
1Z	0726
2A	0226
2B	0627
2C	0636
2D	0540
2E	0373
2G	0630
2H	0254
2J	0363
2L	0272
2M	0505
2N	0563
5D	0152
5E	0174
5F	0044
5G	0111
5H	0065
5J	0130
5K	0020
5M	0117
5T	0076
6A	2001
6E	2371
7A	0350
7B	0000
7D	0300
7E	0000
7G	0426
8A	1411
8B	1417
8C	1472
8J	1650
8K	1637
8L	1453
8M	1544
8N	1552
8P	1531
8Q	0136
8R	1523
8S	1666
8T	1520
8U	1676
8V	1574
8W	1562
8X	1501
8Y	1613
8Z	1422
9J	0771
	1005
	701
	657
	561
	654
	717
	502
	545
	444
	424
	760
	775
	234
	666
	676
	572
	412
	667
	263
	401
	302
	533
	615
	155
	177
	42
	110
	63
	131
	45
	117
	75
	1023
	1022
	1444
	1445
	1446
	1447
	1024
	1045
	1053
	1127
	1315
	1304
	1110
	1206
	1214
	1172
	140
	1163

P CONT

[LAP6 DISPLAY INDEX  
 [BLOCKS 325-326  
 [QUARTERS 0-1  
 [LAP6 PRINT INDEX  
 [BLOCKS 325-326  
 [QUARTERS 0-1  
 [CONVERT WITH TELETYPE  
 B15

15 0701 RCG 7E  
 16 7300 717D  
 17 6225 JMP 1D [DX  
 [PRINT INDEX  
 20 0720 #5K RDC i 7E  
 21 1326 117D+26 [2ND Q  
 22 0720 RDC i 7E  
 23 3335 317D+35 [TTSRS  
 24 6204 JMP 1B [READ INDEX  
 25 7501 JMP 8X  
 26 6117 JMP 5M  
 [PRINT LABEL  
 27 0062 SET i 2  
 30 4151 SD-4000  
 31 7613 JMP 8Y  
 32 7501 JMP 8X  
 33 7613 JMP 8Y  
 34 0062 SET i 2  
 35 4173 SE-4000  
 36 7613 JMP 8Y  
 37 0062 SET i 2  
 40 7007 7007  
 41 7501 JMP 8X  
 42 0073 SET i 13  
 43 7767 -10  
 44 1322 #5F LDH i 2  
 45 1420 SHD i  
 46 5700 5700  
 47 6065 JMP 5H [NO ENTRY  
 50 1420 SHD i  
 51 7700 7700  
 52 2127 ADD SJ-1 [63  
 53 7562 JMP 8W  
 54 0233 XSK i 13  
 55 6044 JMP 5F  
 56 6076 JMP 5T  
 57 6130 JMP 5J [NO MS  
 60 7560 JMP 8W-2  
 61 7560 JMP 8W-2  
 62 6076 JMP 5T  
 63 0016 NOP [NO BINARY  
 64 7501 JMP 8X  
 65 1000 #5H LDA  
 66 0002 2  
 67 1620 BSE i  
 70 7007 7007  
 71 4002 STC 2  
 72 0202 XSK 2

```

P CONT
73 6042      JMP SF-2
74 6117      JMP SM
75 6015      JMP 15
    [GET BN, #BLKS
76 0045 #ST SET 5
77 0000      0
100 1022     LDA i 2
101 1560     BCL i
102 7000     7000
103 4111     STC 5G
104 1022     LDA i 2
105 0451     APO
106 6000     JMP 0 [NO ENTRY
107 7560     JMP 8W-2
110 1020     LDA i
111 2500 #5G BLOCK NUMBER
112 6136     JMP 8Q
113 1002     LDA 2 [#BLKS
114 6136     JMP 8Q
115 0225     XSK i 5
116 6005     JMP 5 [ENTRY, P+2
    [LINE FEED
117 0043 #5M SET 3
120 0000      0
121 0065      SET i 5
122 7766      -11
123 7520     JMP 8T
124 0225     XSK i 5
125 6123     JMP P-2
126 6003     JMP 3
127 7714     -63 [77-63=14
    [NO MS-SPACE OVER
130 0073 #5J SET i 13
131 7766      -11
132 7560     JMP 8W-2
133 0233     XSK i 13
134 6132     JMP P-2
135 6060     JMP 5H-5
    [PRINT NUMBER-LEADING SPACES
136 0044 #8Q SET 4
137 0000      0
140 0450     AZE
141 6144     JMP P+3
142 7562     JMP 8W
143 6004     JMP 4
144 7544     JMP 8M
145 0450     AZE
146 7526     JMP 8R+3
147 7560     JMP 8W-2
150 7552     JMP 8N
151 6144     JMP 8Q+6
    [INDEX LABELS
152 1414 #5D 1414 [MANUSCRIPT
153 1414      1414
154 1414      1414
155 1414      1414

```

P CONT

156 4024 4024  
 157 4150 4150  
 160 4626 4626  
 161 4534 4534  
 162 4347 4347  
 163 1414 1414  
 164 1414 1414  
 165 2534 2534 [BINARY  
 166 4124 4124  
 167 4554 4554  
 170 1214 1214  
 171 1441 1441 [NAME  
 172 2440 2440  
 173 3014 3014  
 174 1414 #5E 1414 [BN #BLKS  
 175 1425 1425  
 176 4114 4114  
 177 2225 2225  
 200 3736 3736  
 201 4612 4612  
 202 0720 RDC i 7E  
 203 1326 117D+26  
 [INDEX READ  
 204 1000 #1B LDA  
 205 2377 6E+6  
 206 1140 ADM  
 207 0212 P+3  
 210 2374 ADD 2E+1 [4  
 211 4510 STC 2M+3  
 212 0701 RCG [UNIT FIXED  
 213 1426 117G [INDEX BN  
 214 4506 STC 2M+1  
 215 2622 ADD 1Q+1  
 216 4630 STC 2G  
 217 1000 LDA  
 220 3000 3000  
 221 1460 SAE i  
 222 5757 5757  
 223 6735 JMP 1N  
 224 6000 JMP 0  
 [DISPLAY INDEX  
 225 6202 #1D JMP 1B-2  
 [COUNT ENTRIES  
 226 0070 #2A SET i 10  
 227 3007 3007  
 230 0072 SET i 12  
 231 0000 0  
 232 6373 JMP 2E [UP 10  
 233 6363 JMP 2J  
 234 0016 NOP  
 235 6363 JMP 2J  
 236 0016 NOP  
 237 0210 XSK 10  
 240 6232 JMP 2A+4  
 241 1000 LDA  
 242 0012 12

P CONT

243 0017 COM  
 244 1040 STA  
 245 0011 I1  
 246 2273 ADD 2L+1 [10  
 247 0451 APO  
 250 6254 JMP 2H  
 251 1000 LDA  
 252 0011 I1  
 253 4630 STC 2G

[DISPLAY PRESET

254 0052 #2H SET 12  
 255 0630 2G [-# CURRENT  
 256 0070 SET 1 10  
 257 7007 7007  
 260 0074 SET 1 14  
 261 6325 JMP 1G+7  
 262 6373 JMP 2E [UP 10  
 263 6363 JMP 2J [CHK MS  
 264 6272 JMP 2L [MS ENTRY  
 265 6363 JMP 2J [CHK BIN  
 266 6270 JMP P+2 [BIN ENTRY  
 267 6262 JMP P-5  
 270 0074 SET 1 14  
 271 6316 JMP 1G

[CONCE PER FRAME

272 0044 #2L SET 4  
 273 0010 10 [CONSTANT  
 274 0063 SET 1 3  
 275 7767 -10  
 276 1000 LDA  
 277 0630 2G  
 300 2273 ADD 2L+1 [10  
 301 0451 APO  
 302 6400 JMP 2E+5 [2G MORE THAN 10  
 303 0017 COM  
 304 4012 STC 12

[COMPUTE VERTICAL

305 2401 ADD 2E+6  
 306 1120 ADA 1  
 307 0040 40  
 310 0232 XSK 1 12  
 311 6306 JMP P-3  
 312 0043 SET 3  
 313 0630 2G  
 314 4425 STC 1M  
 315 6014 JMP 14

[CONCE PER LINE

[BN ENTRY

316 0077 #1G SET 1 17 [BINARY  
 317 0052 S2 [8  
 320 6403 JMP 1X  
 321 1020 LDA 1  
 322 7775 -2  
 323 1140 ADM  
 324 0004 4  
 325 0077 SET 1 17 [MS ENTRY

P CONT

326 0100 100 [M

327 6403 JMP 1X

330 6332 JMP 1E

331 6316 JMP 1G

[CHECK NAME

332 0057 #1E SET 17

333 0000 0

334 1020 LDA i

335 7771 -6

336 1140 ADM

337 0004 4

340 0066 SET i 6

341 7767 -10

342 0061 SET i 1

343 0070 70

344 0045 SET 5

345 0004 4

346 1325 LDH i 5

347 1420 SHD i

350 5700 5700

351 6000 JMP 0

352 6357 JMP P+5

[DISPLAY NAME

353 1325 LDH i 5

354 1420 SHD i

355 7700 7700

356 6017 JMP 17

357 6712 JMP 1Y

360 0226 XSK i 6

361 6353 JMP P-6

362 6017 JMP 17

[CHECK ENTRY FOR COUNT

363 0053 #2J SET 13

364 0010 10 [DELETE ADDRESS

365 1030 LDA i 10

366 1030 LDA i 10

367 0471 APO i

370 0232 XSK i 12

371 0220 XSK i 0

372 6000 JMP 0 [P+1 IF ENTRY

[UP 10

373 1020 #2E LDA i

374 0004 4 [CONSTANT

375 1140 ADM

376 0010 10

377 6000 JMP 0

[FIX VERTICAL

400 1020 LDA i

401 7500 -277 [CONSTANT

402 6314 JMP 1G-2

[CHECK ENTRY

403 0046 #1X SET 6

404 0000 0

405 1020 LDA i

406 7776 -1 [CONSTANT

407 1140 ADM

P CONT

410 0004 4  
 411 1004 LDA 4  
 412 1560 BCL i  
 413 7000 7000  
 414 4432 STC 1M+5 [BN  
 415 1024 LDA i 4  
 416 0451 APO  
 417 6000 JMP 0 [NO ENTRY  
 420 0061 SET i 1  
 421 0354 354  
 [DISPLAY ENTRY  
 422 1020 #1W LDA i  
 423 0040 40  
 424 1160 ADM i  
 425 0000 #1M VERTICAL  
 426 1000 LDA  
 427 0017 17  
 430 6713 JMP 1Y+1  
 431 1020 LDA i  
 432 0000 BN  
 433 6654 JMP 1T  
 434 1004 LDA 4 [#BLKS  
 435 6654 JMP 1T  
 436 0223 XSK i 3  
 437 6006 JMP 6  
 [LAST NAME  
 440 1000 LDA  
 441 0004 4  
 442 1560 BCL i  
 443 0002 2  
 444 4004 STC 4  
 445 6332 JMP 1E  
 [DISPLAY TITLE  
 446 1020 #1C LDA i  
 447 0100 100  
 450 2425 ADD 1M  
 451 4425 STC 1M  
 452 6515 JMP 1V  
 453 0415 KST  
 454 6272 JMP 2L  
 [KEYBOARD  
 455 0515 #1U KBD  
 456 1420 SHD i  
 457 0100 100 [1  
 460 6617 JMP 1S  
 461 1420 SHD i  
 462 5200 S200 [W  
 463 6636 JMP 2C  
 464 0470 AZE i [0  
 465 6621 JMP 1Q  
 466 1420 SHD i  
 467 4400 4400 [Q  
 470 6640 JMP 1P  
 471 1420 SHD i  
 472 1300 1300 [DEL  
 473 6540 JMP 2D

p CONT  
 474 1420 SHD i  
 475 1200 1200 [EOL  
 476 6015 JMP 15  
 477 1420 SHD i  
 500 4500 4500 [REPEAT  
 501 6513 JMP 1V-2  
 502 1460 SAE i  
 503 0022 22 [#-WCG NEW INDEX  
 504 6272 JMP 2L  
 [#-WRITE INDEX AND RETURN  
 505 1520 #2M SRO i  
 506 7777 -0  
 507 6015 JMP 15 [1  
 510 0706 WRITE INDEX [0  
 511 1426 117G  
 512 6015 JMP 15  
 [REPEAT  
 513 6212 JMP 1B+6  
 514 6226 JMP 2A  
 [DISPLAY TITLE  
 515 0042 #1V SET 2  
 516 0000 0  
 517 0061 SET i 1  
 520 0140 140  
 521 0066 SET i 6  
 522 4725 1Z-4000  
 523 6530 JMP 1R  
 524 0061 SET i 1  
 525 0424 424  
 526 6530 JMP 1R  
 527 6002 JMP 2  
 [DISPLAY TITLE  
 530 0057 #1R SET 17  
 531 0000 0  
 532 1326 LDH i 6  
 533 1420 SHD i  
 534 6700 6700  
 535 6017 JMP 17  
 536 6712 JMP 1Y  
 537 6532 JMP P-5  
 [DELETE  
 540 1020 #2D LDA i  
 541 5757 5757  
 542 1073 STA i 13  
 543 1073 STA i 13  
 544 1000 LDA  
 545 0013 13  
 546 1660 BCO i  
 547 0002 2  
 550 4013 STC 13  
 551 1013 LDA 13  
 552 0471 APO i  
 553 6563 JMP 2N  
 554 1000 LDA  
 555 0013 13  
 556 1560 BCL i

P CONT

557 0007 7  
 560 4013 STC 13  
 561 2541 ADD 2D+1  
 562 1053 STA 13  
 563 1020 #2N LDA i  
 564 0001 1  
 565 2630 ADD 2G  
 566 0450 AZE  
 567 4630 STC 2G  
 570 0011 CLR  
 571 4506 STC 2M+1  
 572 0231 XSK i 11  
 573 6254 JMP 2H  
 [CALL DELETED]  
 574 0071 SET i 11  
 575 2777 2777  
 576 1071 STA i 11  
 577 0211 XSK 11  
 600 6576 JMP P-2  
 601 6515 #1A JMP 1V [DISPLAY TITLE  
 602 0415 KST  
 603 6601 JMP P-2  
 604 0515 KBD  
 605 1420 SHD i  
 606 2200 2200  
 607 6505 JMP 2M  
 610 1420 SHD i  
 611 4500 4500 [REPEAT  
 612 6513 JMP 1V-2  
 613 1460 SAE i  
 614 0012 12  
 615 6601 JMP 1A  
 616 6015 JMP 15  
 [KEYBOARD CHANGES  
 [FORWARD ENTRY  
 617 6627 #1S JMP 2B  
 620 6254 JMP 2H  
 [FORWARD PAGE  
 621 0062 #1Q SET i 2  
 622 7767 -10 [CONSTANT  
 623 6627 JMP 2B  
 624 0222 XSK i 2  
 625 6623 JMP P-2  
 626 6254 JMP 2H  
 [FORWARD  
 627 1020 #2B LDA i  
 630 7767 #2G -10  
 631 1440 SAE  
 632 0011 11  
 633 2406 ADD 1X+3 [-1  
 634 4630 STC 2G  
 635 6000 JMP 0  
 [BACKWARD ENTRY  
 636 6646 #2C JMP 1J  
 637 6254 JMP 2H  
 [BACKWARD PAGE

P CONT

```

640 0062 #1P SET i 2
641 7767 -10
642 6646 JMP 1J
643 0222 XSK i 2
644 6642 JMP P-2
645 6254 JMP 2H
    [BACKWARD
646 1020 #1J LDA i
647 0001 1
650 2630 ADD 2G
651 0450 AZE
652 4630 STC 2G
653 6000 JMP 0
    [NUMBER DISPLAY
654 0047 #1T SET 7
655 0000 0
656 0241 ROL 1
657 4706 STC 1K+3
660 6703 JMP 1K
661 1500 SRO
662 0676 1K-5
663 6701 JMP 1K-2 [DISPLAY LAST
664 0450 AZE
665 6673 JMP P+6
666 2001 ADD 1 [NO LEADING ZEROS
667 1120 ADA i
670 0024 24
671 4001 STC 1
672 6660 JMP 1T+4
673 6713 JMP 1Y+1
674 6703 JMP 1K
675 1520 SRO i
676 4210 4210
677 6701 JMP P+2
700 6673 JMP P-5
    [DISPLAY LAST
701 6713 JMP 1Y+1
702 6007 JMP 7
    [FIX DIGIT
703 2706 #1K ADD P+3
704 0243 ROL 3
705 1060 STA i
706 0000 NUM TO DISPLAY
707 1560 BCL i
710 7761 7761
711 6000 JMP 0
    [DISPLAY
712 0241 #1Y ROL 1
713 1120 ADA i
714 2001 6A
715 4012 STC 12
716 2425 ADD 1M
717 1752 DSC 12
720 1772 DSC i 12
721 1020 LDA i
722 0004 4

```

P CONT  
723 2001 ADD 1  
724 4001 STC 1  
725 6000 JMP 0  
[TITLE TABLE  
726 4124 #12 4124 [NA  
727 4030 4030 [ME  
730 6725 6725 [ B  
731 4114 4114 [N  
732 2225 2225 [#B  
733 3736 3736 [LK  
734 4667 4667 [S  
[NO  
735 0011 #1N CLR  
736 4425 STC 1M [V COOR  
737 0061 SET i 1  
740 0330 330 [H COOR  
741 1020 LDA i  
742 0102 102 [N  
743 6713 JMP 1Y+1  
744 1772 DSC i 12 [O  
745 1772 DSC i 12  
746 0415 KST  
747 6737 JMP 1N+2  
750 0515 KBD  
751 6015 JMP 15  
6E=2371  
6A=2001 [GRIDS  
7G=426 [INDEX  
9J=771

[LAP6 DISPLAY INDEX AND PRINT INDEX  
[ADD TELETYPE HERE

	VALUE	LINE
5A	1223	240
5B	1237	254
5C	1165	200
5K	1073	101
5L	1113	124
5M	1136	147
5N	1147	160
5P	1214	230
5Q	1220	234
5S	1105	115
6E	2371	300
7A	0350	717
7B	0000	720
7D	0300	721
7E	0000	722
8A	1411	320
8B	1417	326
8C	1472	402
8J	1650	570
8K	1637	557
8L	1453	363
8M	1544	461
8N	1552	467
8P	1531	445
8R	1523	436
8S	1666	607
8T	1520	432
8U	1676	620
8V	1574	512
8W	1562	500
8X	1501	412
8Y	1613	532
8Z	1422	332
9J	0771	301

P CONT

[LAP6 PRINT MANUSCRIPT  
 [CONVERT WITH TELETYPE  
 [BLOCK 322  
 [QUARTER 2  
 \$1000  
 1000 0700 RDC 7E  
 1001 3335 317D+35  
 1002 0011 CLR  
 1003 3377 ADD 1377 [BN  
 1004 1620 BSE i  
 1005 6000 6000  
 1006 5240 STC 5B+1  
 1007 3376 ADD 1376 [RDC u  
 1010 1040 STA  
 1011 1246 5B+7  
 1012 1620 BSE i  
 1013 0020 i [RDC i u  
 1014 5237 STC 5B  
 1015 0065 SET i 5  
 1016 2371 6E  
 1017 0063 SET i 3  
 1020 0773 9J+2  
 1021 1005 LDA 5 [1ST LN  
 1022 0470 AZE i  
 1023 7031 JMP P+6  
 1024 1120 ADA i  
 1025 7776 -1  
 1026 0470 AZE i  
 1027 0017 COM  
 1030 5067 STC 5K-4 [REQUEST  
 1031 3224 ADD 5A+1 [1  
 1032 5453 STC 8L [PAGE #  
 1033 1025 LDA i 5  
 1034 0450 AZE  
 1035 5102 STC 5K+7 [2ND LN  
 1036 1025 LDA i 5  
 1037 1460 SAE i  
 1040 7777 7777  
 1041 7044 JMP P+3  
 1042 1020 LDA i  
 1043 6312 6312  
 1044 1043 STA 3  
 1045 1025 LDA i 5  
 1046 1063 STA i 3  
 1047 1025 LDA i 5  
 1050 1063 STA i 3  
 1051 1025 LDA i 5  
 1052 1063 STA i 3 [MOVE NAME  
 1053 1020 LDA i  
 1054 7777 -0  
 1055 1063 STA i 3  
 1056 0075 SET i 15  
 1057 0701 RCG 7E  
 1060 0063 SET i 3  
 1061 7401 7401  
 1062 0065 SET i 5

```

P CONT
1063 7776      -1
1064 1000      LDA
1065 1226      5A+3 [PRESENT LN
1066 1460      SAE i
1067 0000      0 [1ST LN
1070 7105      JMP 5S
1071 3224      ADD 5A+1 [1
1072 5472      STC 8C [LINE #
1073 7422 #5K  JMP 8Z [PAGE PRESET
1074 7501      JMP 8X [LINE FEED
1075 0073      SET i 13
1076 7677      -100
1077 1000      LDA
1100 1226      5A+3
1101 1460      SAE i
1102 7776      7776
1103 7113      JMP 5L [PRINT LINE
[DONE
1104 7416      JMP 8B-1 [WAIT FOR KEY
[PARTIAL PRINT
1105 7223 #5S  JMP 5A [UP LINE
1106 1020      LDA i
1107 0012      12
1110 1423      SHD i 3
1111 7064      JMP 5K-7
1112 7110      JMP P-2
[PRINT LINE
1113 7223 #5L  JMP 5A [UP LINE
1114 0042      SET 2
1115 0003      3
1116 1322      LDH i 2 [1ST CHARACTER
1117 1420      SHD i
1120 7700      7700
1121 7411      JMP 8A [DONE
1122 1420      SHD i
1123 2200      2200
1124 7136      JMP 5M
1125 1420      SHD i
1126 6600      6600 [B
1127 7136      JMP 5M
1130 7560      JMP 8W-2 [SPACE4
1131 7560      JMP 8W-2
1132 7560      JMP 8W-2
1133 7560      JMP 8W-2
1134 0073      SET i 13
1135 7703      -74
1136 1323 #5M  LDH i 3
1137 1420      SHD i
1140 1200      1200
1141 7214      JMP SP [EOL
1142 7562      JMP 8W [PRINT CHAR
1143 1303      LDH 3
1144 1420      SHD i
1145 1400      1400
1146 7165      JMP 5C [COUNT TO NEXT SPACE
1147 0233 #5N  XSK i 13

```

P CONT

```

1150 7136      JMP 5M
1151 1323      LDH i 3
1152 1420      SHD i
1153 1200      1200
1154 7214      JMP 5P

```

[TT LINE CONTINUES PAST PAGE BREAK

```

1155 0225      XSK i 5
1156 7160      JMP P+2
1157 7422      JMP 8Z [PAGE PRESET
1160 7501      JMP 8X
1161 0073      SET i 13
1162 7677      -100
1163 1303      LDH 3
1164 7142      JMP 5M+4

```

[COUNT TO NEXT SPACE OR EOL. DO NOT BREAK WORDS AT END OF TT LINE.

```

1165 0064 #5C SET i 4
1166 0001      1
1167 0042      SET 2
1170 0003      3
1171 1322      LDH i 2
1172 1420      SHD i
1173 1200      1200
1174 7201      JMP P+5
1175 0224      XSK i 4
1176 1460      SAE i
1177 0014      14
1200 7171      JMP P-7
1201 1000      LDA
1202 0013      13
1203 2004      ADD 4
1204 0451      APO
1205 7147      JMP 5N [WILL FIT
1206 1020      LDA i
1207 7676      -101
1210 2004      ADD 4
1211 0471      APO i
1212 7147      JMP 5N [WONT FIT ON ONE LINE ANYWAY
1213 7151      JMP 5N+2 [PUT ON NEXT LINE

```

[EOL

```

1214 1000 #5P LDA
1215 1226      5A+3
1216 3224      ADD 5A+1 [1
1217 5472      STC 8C [LINE #
1220 0225 #5Q XSK i 5
1221 7074      JMP 5K+1
1222 7073      JMP 5K

```

[MS ADDRESS CHECK AND UP LINE NUMBER

```

1223 1020 #5A LDA i
1224 0001      1 [CONSTANT
1225 1160      ADM i
1226 0000      0 [CURRENT LN
1227 1000      LDA
1230 0003      3
1231 1560      BCL i
1232 4000      4000

```

P CONT  
1233 1120 ADA 1  
1234 4400 -3377  
1235 0451 APO  
1236 6000 JMP O [STILL IN QUARTER 6  
1237 0015 #5B READ TAPE  
1240 0710 QUARTER 6  
1241 3240 ADD P-1  
1242 1120 ADA i  
1243 1001 1001  
1244 0451 APO  
1245 5247 STC P+2  
1246 0015 READ TAPE  
1247 7777 71777  
1250 3240 ADD 5B+1  
1251 3224 ADD 5A+1  
1252 5240 STC 5B+1  
1253 2003 ADD 3  
1254 1120 ADA i  
1255 7377 -400  
1256 4003 STC 3  
1257 6000 JMP O  
B1376  
1376 0700 RDC 7B  
1377 0350 7A  
6E=2371  
9J=771

[LAP6 PRINT MANUSCRIPT  
[ADD TELETYPE HERE

VALUE	LINE	VALUE	LINE		
1L	0317	347	5H	1177	1250
1P	0457	515	5J	1117	1165
1T	0544	606	5K	1231	1303
2A	0033	30	5L	1254	1327
2B	0046	44	5M	1302	1355
2C	0065	64	5N	1314	1367
2D	0117	120	5Q	1015	1061
2E	0126	131	5R	1034	1100
2F	0251	276	5S	1170	1241
2G	0735	1020	5T	1335	1412
2H	0164	175	6A	2642	1423
2J	0123	125	6B	2000	1417
2K	0152	161	6C	2700	1424
2L	0706	766	6D	2400	1420
2M	0134	140	6E	2432	1421
2N	0722	1004	6F	2352	1422
2P	0635	711	6G	2740	1425
2Q	0272	317	7A	0350	2045
2R	0303	330	7B	0000	2046
2S	0307	335	7D	0300	2047
2T	0677	756	7E	0000	2050
2U	0115	115	8A	1411	1446
2V	0137	144	8B	1417	1454
2W	0232	254	8C	1472	1530
2X	0511	552	8J	1650	1716
2Y	0200	211	8K	1637	1705
2Z	0022	16	8L	1453	1511
3A	0314	344	8M	1544	1607
3B	0351	402	8N	1552	1615
3C	0372	424	8P	1531	1573
3D	0403	436	8Q	1321	1375
3E	0416	452	8R	1523	1564
3F	0454	512	8S	1666	1735
3G	0464	523	8T	1520	1560
3H	0475	535	8U	1676	1746
3J	0512	553	8V	1574	1640
3K	0540	601	8W	1562	1626
3L	0346	376	8X	1501	1540
4A	0203	215	8Y	1613	1660
4B	0207	222	8Z	1422	1460
4C	0624	677	9J	0771	1030
4D	0610	662	9M	0557	622
4E	0230	251	9N	0563	627
4F	0212	226			
4G	0215	232			
4H	0217	235			
4J	0222	241			
4K	0225	245			
4L	0247	273			
4M	0641	716			
4N	0604	655			
4P	0243	266			
4Q	0567	636			
4R	0576	646			
5A	1164	1234			
5B	1001	1044			
5C	1046	1112			
5E	1074	1142			
5F	1141	1210			

P CONT

```

[LAP6 LIST
[BLOCK 333 - Q1
[BLOCK 327 - Q2
[BLOCK 335 - Q3
[BLOCK 330 - Q0, SAME AS CONVERT
[DO NOT CHANGE LINES WITHOUT ALSO CHANGING CONVERT
[PASS II
    B15
15 0701 RCG 7E
16 1310 117D+10 [DISPLAY
17 0016 NOP
20 0720 RDC i 7E
21 2347 217D+47 [BIN TO Q2
22 6314 #2Z JMP 3A
23 0435 KST i
24 6610 JMP 4D
25 0044 SET 4
26 0003 3
27 6033 JMP 2A
30 6022 JMP 2Z
31 6677 JMP 2T
32 6022 JMP 2Z
[LINE DECODE
33 0057 #2A SET 17
34 0000 0
35 0011 CLR
36 4511 STC 2X
37 4200 STC 2Y
40 0066 SET i 6
41 0247 4L
42 0072 SET i 12
43 7774 -3 [CONSTANT
44 0073 SET i 13
45 6135 JMP 2M+1
[CHARACTER CHECK
46 1323 #2B LDH i 3
47 0070 SET i 10
50 4243 4P+4000
51 1430 SHD i 10
52 6126 JMP 2E [COMMENT
53 1430 SHD i 10
54 6203 JMP 4A [B
55 1430 SHD i 10
56 6132 JMP 2E+4 [=]
57 1430 SHD i 10
60 6137 JMP 2V [↑
61 1430 SHD i 10
62 6207 JMP 4B [77
63 1430 SHD i 10
64 6123 JMP 2J [u
[CHECK NUMBER
65 6404 #2C JMP 3D+1
66 6251 JMP 2F
67 6416 JMP 3E
70 6164 JMP 2H
71 1620 BSE i

```

```

P  CONT
72 0300    ROR
73 4075    STC P+2
74 1011    LDA 11
75 0450    ROTATE N
76 0451    APO
77 6115    JMP 2U
[UNDEFINED
100 1000   LDA
101 0200   2Y
102 0303   ROR 3
103 1361   STH i 1
104 1303   LDH 3
105 1361   STH i 1
106 1000   LDA
107 0317   1L
110 1061   STA i 1
111 1020   LDA i
112 7777   -0
113 1061   STA i 1
114 6475   JMP 3H
115 1010 #2U LDA 10
116 6013   JMP 13
[E SPECIAL CHARACTER
117 1120 #2D ADA i
120 6243   2W+6000+11
121 4122   STC P+1
122 0140   JUMP TO DISPATCHER
[ u
123 1020 #2J LDA 1
124 0010   10
125 6013   JMP 13
[COMMENT, EQUALITY
126 1324 #2E LDH i 4
127 1460   SAE i
130 0066   66
131 0237   XSK i 17
132 6464   JMP 3G
133 6017   JMP 17
[ BETA 13 RETURN
134 0017 #2M COM
135 2511   ADD 2X
136 6036   JMP 2A+3
[TEXT
137 6557 #2V JMP 9M
140 7000   JMP 1000 [LIST
141 6512   JMP 3J [TEXT COUNT
142 6147   JMP P+5 [+
143 6152   JMP 2K [EOL
144 6160   JMP 2K+6 [77
145 6677   JMP 2T [2 CHARS
146 6141   JMP 2V+2
[+=71, END TEXT
147 0233   XSK i 13
150 6132   JMP 2E+4 [NO ASSIGNMENT
151 6131   JMP 2E+3
[EOL IN TEXT

```

P CONT  
152 0072 #2K SET i 12  
153 6142 JMP 2V+3  
154 6314 JMP 3A [CHECK MS  
155 0233 XSK i 13  
156 6523 JMP 3J+11  
157 6145 JMP 2V+6 [ASSIGN  
[77 IN TEXT  
160 0233 XSK i 13  
161 6207 JMP 4B [NO ASSIGN  
162 6677 JMP 2T  
163 6207 JMP 4B  
[NUMBER, NOT TAG  
164 1303 #2H LDH 3  
165 1420 SHD i  
166 1400 1400  
167 6372 JMP 3C  
170 6404 JMP 3D+1  
171 6173 JMP p+2  
172 6167 JMP p-3  
173 1020 LDA i  
174 3777 -4000 [CONSTANT  
175 1140 ADM  
176 0003 3  
177 1020 LDA i  
200 0000 #2Y NUMBER  
201 0303 ROR 3  
202 6013 JMP 13  
[  
203 6351 #4A JMP 3B  
204 6557 JMP 9M  
205 6017 JMP 17 [LIST  
206 6567 JMP 4Q [CONVERT  
[77-PREPARE SAVE BIN  
207 6557 #4B JMP 9M  
210 7400 JMP 1400 [LIST  
211 6576 JMP 4R [CONVERT  
[i  
212 1020 #4F LDA i  
213 0020 20 [CONSTANT  
214 6013 JMP 13  
[p  
215 2457 #4G ADD 1P  
216 6013 JMP 13  
[-  
217 0073 #4H SET i 13  
220 6134 JMP 2M  
221 6046 JMP 2B  
[1  
222 2511 #4J ADD 2X  
223 0303 ROR 3  
224 6036 JMP 2A+3  
[TAG  
225 6372 #4K JMP 3C  
226 1323 LDH i 3  
227 6046 JMP 2B  
[EOL

```

P CONT
230 0237 #4E XSK i 17
231 6017 JMP 17
[DISPATCHER
232 6230 #2W JMP 4E
233 6046 JMP 2B [DEL
234 6046 JMP 2B
235 6212 JMP 4F
236 6215 JMP 4G
237 6217 JMP 4H
240 6044 JMP 2B-2
241 6222 JMP 4J
242 6225 JMP 4K
[CHARACTER TABLE
243 0022 #4P 0022
244 6665 6665
245 6170 6170
246 7762 7762
[SAVE LETTERS
247 0000 #4L 0
250 0000 0
[CHECK LETTER
251 1120 #2F ADA i
252 7765 -12
253 0451 APO
254 6117 JMP 2D
255 1303 LDH 3
256 1366 STH i 6
257 0232 XSK i 12
260 6046 JMP 2B
261 0246 ROL 6
262 2247 ADD 4L
263 0066 SET i 6
264 7700 6A-6G-1
265 0072 SET i 12
266 2641 6A-1
267 0226 XSK i 6
270 6272 JMP 2Q
271 6040 JMP 2B-6
272 1472 #2Q SAE i 12
273 6267 JMP 2Q-3
274 1020 LDA i
275 0077 6G-6A+1
276 2006 ADD 6
277 1120 ADA i
300 7740 6A-6C-1
301 0471 APO i
302 6307 JMP 2S
303 1120 #2R ADA i
304 0037 6C-6A+1
305 0245 ROL 5
306 6013 JMP 13
[SUBSTITUTE
307 1120 #2S ADA i
310 2737 6G-1
311 4006 STC 6
312 1006 LDA 6

```

P CONT

313 6013 JMP 13  
 [CONVERT SUBROUTINES  
 CMS ADDRESS CHECK

314 1020 #3A LDA i  
 315 0001 1 [CONSTANT  
 316 1160 ADM i  
 317 0000 #1L 0  
 320 1000 LDA  
 321 0003 3  
 322 1560 BCL i  
 323 4000 4000  
 324 1120 ADA i  
 325 4400 -3377  
 326 0451 APO  
 327 6000 JMP 0  
 330 0720 RDC i 7B  
 331 6350 617A  
 332 2331 ADD P-1  
 333 1120 ADA i  
 334 1001 1001  
 335 0451 APO  
 336 4340 STC P+2  
 337 0700 RDC 7B  
 340 7077 7177  
 341 2331 ADD P-10  
 342 2315 ADD 3A+1  
 343 4331 STC P-12  
 344 2003 ADD 3  
 345 1120 ADA i  
 346 7377 #3L -400  
 347 4003 STC 3  
 350 6000 JMP 0

[B

351 0050 #3B SET 10  
 352 0000 0  
 353 6372 JMP 3C  
 354 6401 JMP 3D-2  
 355 6362 JMP P+5  
 356 6372 JMP 3C  
 357 6404 JMP 3D+1  
 360 6362 JMP P+2  
 361 6356 JMP P-3  
 362 1000 LDA  
 363 0200 2Y  
 364 0303 ROR 3  
 365 1560 BCL i  
 366 4000 4000  
 367 4457 STC 1P  
 370 6464 JMP 3G  
 371 6010 JMP 10

[SPACE AVOID

372 0051 #3C SET 11  
 373 0000 0  
 374 1323 LDH i 3  
 375 1420 SHD i  
 376 1400 1400

P CONT

377 6374 JMP 3C+2  
 400 6011 JMP 11  
 [NUMBER CHECK

401 0011 CLR  
 402 4200 STC 2Y  
 403 1303 #3D LDH 3  
 404 1120 ADA i  
 405 7766 -11  
 406 0471 APO i  
 407 6000 JMP 0  
 410 1303 LDH 3  
 411 2200 ADD 2Y  
 412 0243 ROL 3  
 413 4200 STC 2Y  
 414 0220 XSK i 0  
 415 6000 JMP 0  
 [SYMBOL CHECK

416 1323 #3E LDH i 3  
 417 1120 ADA i  
 420 7754 -23  
 421 0451 APO  
 422 6000 JMP 0  
 423 1120 ADA i  
 424 7745 -32  
 425 0471 APO i  
 426 6000 JMP 0  
 427 1000 LDA  
 430 0200 2Y  
 431 0470 AZE i  
 432 6000 JMP 0  
 433 0303 ROR 3  
 434 1260 MUL i  
 435 0032 32  
 436 1120 ADA i  
 437 1722 6B-32-24  
 440 4010 STC 10  
 441 1303 LDH 3  
 442 2010 ADD 10  
 443 4010 STC 10  
 [FIND MARK REGISTER

444 1303 LDH 3  
 445 1120 ADA i  
 446 2354 6D-24  
 447 4011 STC 11  
 450 2200 ADD 2Y  
 451 0303 ROR 3  
 452 0220 XSK i 0  
 453 6000 JMP 0  
 [UP P

454 1020 #3F LDA i  
 455 0001 1  
 456 1160 ADM i  
 457 0020 #1P 20  
 460 1560 BCL i  
 461 4000 4000  
 462 4457 STC 1P

```

P CONT
463 6000    JMP O
             [FIND EOL
464 0051 #3G SET 11
465 0000    O
466 1020    LDA i
467 0012    12
470 1403    SHD 3
471 6011    JMP 11
472 1423    SHD i 3
473 6011    JMP 11
474 6472    JMP P-2
             [ERROR TABLE ADDRESS CHECK
475 1020 #3H LDA i
476 0004    4
477 2001    ADD 1
500 4502    STC P+2
501 1440    SAE
502 0452    NEXT SLOT STILL ZERO?
503 0451    APO
504 6000    JMP O
505 2001    ADD 1 [SET 1 BACK
506 2043    ADD 2B-3 [-3
507 4001    STC 1
510 6000    JMP O
             [TEXT COUNT
511 0000 #2X 0 [FOR ASSIGN
512 0052 #3J SET 12
513 0000    O
514 0073    SET i 13
515 7775    -2 [CONSTANT
516 0074    SET i 14
517 4510    2X-1+4000
520 1020    LDA i
521 1414    1414
522 4511    STC 2X
523 1323    LDH i 3
524 1420    SHD i
525 7100    7100 [+]
526 6543    JMP 3K+3
527 1420    SHD i
530 7700    7700
531 6541    JMP 3K+1
532 1374    STH i 14
533 1420    SHD i
534 1200    1200
535 6542    JMP 3K+2
536 0233    XSK i 13
537 6523    JMP 3J+11
540 0232 #3K XSK i 12
541 0232    XSK i 12
542 0232    XSK i 12
543 6012    JMP 12
             [PASS PRESET
544 1020 #1T LDA i
545 6350    617A
546 4331    STC 1L+12

```

P CONT  
 547 4317 STC 1L  
 550 2213 ADD 4F+1  
 551 4457 STC 1P  
 552 0063 SET i 3  
 553 7401 7401  
 554 0062 SET i 2  
 555 1017 1017  
 556 6000 JMP 0  
 [CHECK LIST  
 557 1520 #9M SRO i  
 560 7777 7777  
 561 0220 XSK i 0 [CONVERT  
 562 6000 JMP 0 [LIST  
 [LIST-PASS II  
 563 6544 #9N JMP 1T  
 564 0720 RDC i 7E  
 565 2327 217D+27  
 566 7001 JMP 1001  
 [DO NOT DISTURB ANY LINES BEFORE THIS POINT  
 [LIST TEXT  
 [CHECK PARTIAL  
 567 1000 #4Q LDA  
 570 0017 17 [SR RETURN  
 571 1460 SAE i  
 572 7174 JMP 5S+4  
 573 6641 JMP 4M [LIST  
 574 6576 JMP 4R  
 [SEARCH-PARTIAL LIST  
 575 6314 JMP '3A  
 576 6512 #4R JMP 3J [TEXT COUNT  
 577 6604 JMP 4N [71 RETURN  
 600 6610 JMP 4D [EOL RETURN  
 601 7417 JMP 8B [77 RETURN  
 602 6454 JMP 3F [2 CHARACTERS-UP P  
 603 6576 JMP 4R  
 [71 RETURN  
 604 6464 #4N JMP 3G [FIND EOL  
 605 0233 XSK i 13  
 606 7223 JMP 5K-6 [NO ASSIGNMENT FOR 71  
 607 7175 JMP 5S+5 [ASSIGN  
 [EOL RETURN  
 610 0233 #4D XSK i 13  
 611 6624 JMP 4C [EOL LEFT  
 612 6454 JMP 3F [EOL RIGHT-UP P  
 613 1000 LDA  
 614 0317 1L [PRESENT LN  
 615 1440 SAE  
 616 1226 SK-3 [REQUESTED  
 617 6575 JMP 4R-1 [NOT YET  
 620 1020 LDA i  
 621 6641 JMP 4M  
 622 5243 STC 5L-11  
 623 7231 JMP 5K [PAGE PRESET  
 [EOL LEFT CHARACTER  
 624 1000 #4C LDA  
 625 0317 1L

P CONT

626 1440 SAE  
 627 1226 SK-3  
 630 6635 JMP 2P [NOT YET  
 631 1020 LDA i  
 632 6722 JMP 2N  
 633 5243 STC SL-11  
 634 7231 JMP 5K [PAGE PRESET  
 [EOL BUT NOT PRINTING  
 635 6314 #2P JMP 3A [CHK MS  
 636 0072 SET i 12  
 637 6577 JMP 4R+1  
 640 6523 JMP 3J+11 [CONTINUE TEXT COUNT  
 [LIST TEXT  
 641 6512 #4M JMP 3J [TEXT COUNT  
 642 6677 JMP 2T [71  
 643 6706 JMP 2L [EOL  
 644 7400 JMP 1400 [77  
 645 7317 JMP 8Q-2 [2 CHARACTERS-PRINT P  
 646 7560 JMP 8W-2 [SPACE  
 647 6454 JMP 3F [UP P  
 650 1014 LDA 14 [CONTENTS  
 651 7523 JMP 8R [PRINT CONTENTS  
 652 1000 LDA  
 653 0002 2 [SAVE 2  
 654 4675 STC 2T-2  
 655 0225 XSK i 5 [CHK LINES  
 656 6663 JMP P+5  
 [PAGE END  
 657 7422 JMP 8Z [PAGE PRESET  
 660 0062 SET i 2  
 661 5334 ST-4000  
 662 7613 JMP 8Y [LABEL  
 663 7501 JMP 8X [RETURN  
 664 1000 LDA  
 665 0317 1L [PRESENT LN  
 666 1440 SAE  
 667 1307 5M+5  
 670 6672 JMP P+2  
 671 7417 JMP 8B [END LIST  
 672 3456 ADD 8L+3 [1  
 673 5472 STC 8C [LN FOR PAGE HEADING  
 674 0062 SET i 2  
 675 0000 RESET  
 676 6641 JMP 4M  
 [71 RETURN WHILE PRINTING  
 677 6464 #2T JMP 3G [FIND EOL  
 700 1020 LDA i  
 701 6033 JMP 2A [RESTORE  
 702 5243 STC SL-11  
 703 0233 XSK i 13  
 704 7254 JMP SL [NO ASSIGNMENT-JUST PRINT LINE  
 705 7245 JMP SL-7 [ASSIGNMENT  
 [EOL WHILE PRINTING  
 706 7317 #2L JMP 8Q-2 [PRINT P  
 707 7560 JMP 8W-2 [SPACE  
 710 0233 XSK i 13

P CONT

711 6716 JMP P+5 [EOL IN LEFT HALF  
 712 1020 LDA i [EOL RIGHT  
 713 6641 JMP 4M  
 714 5243 STC 5L-11  
 715 7247 JMP 5L-5 [UP P, PRINT 2 CHARS, CHK MS  
     [EOL LEFT HALF  
 716 1020 LDA i  
 717 6722 JMP 2N  
 720 5243 STC 5L-11  
 721 7250 JMP 5L-4 [PRINT +1200+, DO NOT UP P  
     [RIGHT CHAR AFTER EOL  
 722 1323 #2N LDH i 3  
 723 1420 SHD i  
 724 7100 7100  
 725 6735 JMP 2G [END TEXT  
 726 0072 SET i 12  
 727 6642 JMP 4M+1  
 730 0074 SET i 14  
 731 0511 2X  
 732 0073 SET i 13  
 733 7776 -1 [RESET COUNT  
 734 6524 JMP 3J+12 [CONTINUE TEXT  
     [71 FOLLOWS LEFT EOL  
 735 6454 #2G JMP 3F [UP P  
 736 6464 JMP 3G [FIND EOL  
 737 1020 LDA i  
 740 6033 JMP 2A [RESTORE  
 741 5243 STC 5L-11  
 742 7254 JMP 5L [NO ASSIGN, PRINT LINE  
     B771  
     [LABEL TABLE  
 771 0000 #9J 0  
 772 0000 0  
 773 6312 6312  
 774 7777 -0  
 775 7777 -0  
 776 7777 -0  
 777 7777 -0  
     [LIST  
     [BLKS 7D+27, 7D+35  
     [QUARTERS 2, 3  
         B1000  
 1000 6567 JMP 4Q [TEXT  
 1001 1000 #5B LDA  
 1002 0771 9J  
 1003 0450 AZE  
 1004 7177 JMP 5H [PARTIAL  
     [PACK SYMBOLS  
 1005 0070 SET i 10  
 1006 2431 6E-1 [2431  
 1007 0062 SET i 2  
 1010 1377 1377 [LN TABLE  
 1011 0064 SET i 4  
 1012 0024 24 [SET LETTER  
 1013 0065 SET i 5  
 1014 7745 -32

P CONT

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1015 1022 #5Q LDA i 2 [LN
1016 0470 AZE i
1017 7034 JMP SR
1020 1020 LDA i
1021 0100 100
1022 2004 ADD 4
1023 1070 STA i 10 [#-L
1024 1020 LDA i
1025 0400 400
1026 2002 ADD 2
1027 4016 STC 16
1030 1016 LDA 16 [VALUE
1031 1070 STA i 10
1032 1002 LDA 2 [LINE
1033 1070 STA i 10
1034 0224 #5R XSK i 4 [UP LETTER
1035 0225 XSK i 5
1036 7015 JMP 5Q
1037 1020 LDA i
1040 0100 100
1041 1140 ADM [UP NUMBER
1042 1021 5Q+4
1043 1460 SAE i
1044 1200 1200
1045 7011 JMP 5Q-4
1046 1000 #5C LDA
1047 2432 6E [1ST ENTRY
1050 0470 AZE i
1051 7202 JMP SH+3 [NO SYMBOL TABLE
    [PRINT SYMBOL TABLE
1052 0011 CLR
1053 1070 STA i 10
1054 0210 XSK 10
1055 7053 JMP P-2
1056 0700 RDC 7E
1057 3335 317D+35
1060 7422 JMP 8Z [PAGE PRESET
1061 0074 SET i 14
1062 1163 SA-1
1063 1034 LDA i 14
1064 4016 STC 16
1065 1036 LDA i 16
1066 0470 AZE i
1067 7074 JMP SE
1070 7611 JMP 8Y-2
1071 1520 SRO i
1072 3567 3567
1073 7063 JMP P-10
    [HEADING FINISHED
1074 0065 #5E SET i 5
1075 7704 -73 [LINES]PAGE
1076 7501 JMP 8X [KST AND CARRIAGE RETURN
1077 0074 SET i 14
1100 1164 SA
1101 1014 LDA 14
1102 4016 STC 16

```

P CONT

1103 1336 LDH i 16  
 1104 0470 AZE i  
 1105 7137 JMP 5F-2  
 1106 7117 JMP 5J  
 1107 1034 LDA i 14  
 1110 4016 STC 16  
 1111 1336 LDH i 16  
 1112 0470 AZE i  
 1113 7134 JMP 5F-5  
 1114 7560 JMP 8W-2 [3 SPACES  
 1115 7560 JMP 8W-2  
 1116 7560 JMP 8W-2  
 1117 1316 #5J LDH 16  
 1120 7562 JMP 8W [#  
 1121 1336 LDH i 16  
 1122 7562 JMP 8W [LETTER  
 1123 7560 JMP 8W-2 [SPACE  
 1124 1036 LDA i 16  
 1125 7523 JMP 8R [VALUE  
 1126 7560 JMP 8W-2 [SPACE  
 1127 1036 LDA i 16  
 1130 7321 JMP 8Q [LINE  
 1131 1000 LDA  
 1132 0016 16  
 1133 1054 STA 14  
 1134 1520 SRO i  
 1135 3567 3567  
 1136 7107 JMP 5J-10  
 1137 0225 XSK i 5  
 1140 7076 JMP 5E+2

[TABLE FINISHED

1141 1020 #5F LDA i  
 1142 3416 3416 [BELL  
 1143 7566 JMP 8W+4  
 1144 0700 RDC 7E  
 1145 6337 617D+37 [MNEMONICS  
 1146 3456 ADD 8L+3 [1  
 1147 5472 STC 8C  
 1150 0074 SET i 14  
 1151 3241 6A-1+400  
 1152 0064 SET i 4  
 1153 2641 6A-1  
 1154 1034 LDA i 14  
 1155 1064 STA i 4  
 1156 0214 XSK 14  
 1157 7154 JMP P-3  
 1160 0065 SET i 5  
 1161 7776 -1  
 1162 7424 JMP 8Z+2  
 1163 7232 JMP 5K+1

[COLUMN ADDRESSES

1164 6431 #5A 6E-4000  
 1165 6712 6E-4000+261  
 1166 7173 6E-4000+542  
 1167 7454 6E-4000+1023

[PARTIAL LIST

P CONT

1170 6314 #5S JMP 3A  
 1171 0044 SET 4  
 1172 0003 3  
 1173 6033 JMP 2A  
 1174 7223 JMP SK-6 [NO ASSIGN  
 1175 6454 JMP 3F  
 1176 7223 JMP SK-6 [ASSIGN  
 1177 1460 #5H SAE i  
 1200 0001 1  
 1201 7206 JMP P+5  
 1202 1020 LDA i  
 1203 0700 RDC 7E  
 1204 5217 STC 5K-12  
 1205 3200 ADD P-5  
 1206 3216 ADD P+10 E-1  
 1207 0470 AZE i  
 1210 0017 COM  
 1211 5226 STC 5K-3  
 1212 2772 ADD 9J+1  
 1213 0450 AZE  
 1214 5307 STC 5M+5  
 1215 0065 SET i S  
 1216 7776 -1  
 1217 0720 RDC i 7E  
 1220 3335 3I7D+35  
 1221 3456 ADD 8L+3  
 1222 5453 STC 8L [UP PAGE  
 1223 1000 LDA  
 1224 0317 1L  
 1225 1460 SAE i  
 1226 0000 0 [REQUESTED LN  
 1227 7170 JMP 5S  
 1230 7312 JMP 5N-2  
 [PASS II-PRINT LINES  
 1231 7422 #5K JMP 8Z [PAGE PRESET  
 1232 0062 SET i 2  
 1233 5334 ST-4000  
 1234 7613 JMP 8Y [LABEL  
 1235 7501 JMP 8X [RETURN  
 1236 6314 JMP 3A  
 1237 0044 SET 4  
 1240 0003 3  
 1241 0042 SET 2  
 1242 0003 3  
 1243 6033 JMP 2A  
 1244 7254 JMP 5L [NO ASSIGNMENT  
 1245 7317 JMP 8Q-2 [PRINT P  
 1246 7560 JMP 8W-2  
 1247 6454 JMP 3F [UP P  
 1250 1000 LDA  
 1251 0511 2X [CONT  
 1252 7523 JMP 8R  
 1253 7261 JMP 5L+5  
 [NO ASSIGNMENT  
 1254 0074 #5L SET i 14  
 1255 7766 -11

P CONT

```

1256 7560    JMP 8W-2 [SPACE
1257 0234    XSK i 14
1260 7256    JMP P-2
1261 0073    SET i 13
1262 7711    -66
1263 0044    SET 4
1264 0002    2
1265 1324    LDH i 4
1266 1420    SHD i
1267 6600    6600
1270 7302    JMP 5M
1271 1420    SHD i
1272 2200    2200
1273 7302    JMP 5M
1274 0074    SET i 14
1275 7773    -4
1276 7560    JMP 8W-2
1277 0233    XSK i 13
1300 0234    XSK i 14
1301 7276    JMP P-3
1302 7560 #5M JMP 8W-2 [SPACE
1303 7615    JMP 8Y+2 [PRINT LINE
1304 1000    LDA
1305 0317    1L
1306 1460    SAE i
1307 7776    7776 [LAST LN REQUESTED
1310 7312    JMP P+2
1311 7416    JMP 8B-1 [FINISHED
1312 3456    ADD 8L+3 [1
1313 5472    STC 8C [LN FOR PAGE HEADING
1314 0225 #5N XSK i 5
1315 7235    JMP 5K+4
1316 7231    JMP 5K
[PRINT NUMBER-LEADING SPACES. # IN ACC. FOR SYMBOL TABL
E OR P.
1317 1000    LDA
1320 0457    1P [P
1321 0044 #8Q SET 4
1322 0000    0
1323 0450    AZE
1324 7327    JMP P+3
1325 7562    JMP 8W
1326 6004    JMP 4
1327 7544    JMP 8M
1330 0450    AZE
1331 7526    JMP 8R+3
1332 7560    JMP 8W-2
1333 7552    JMP 8N
1334 7327    JMP 8Q+6
[LIST HEADING
1335 1414 #5T 1414 [P CONT
1336 1614    1614
1337 1426    1426
1340 4241    4241
1341 4712    4712
6B=2000 [SYMBOL ASSIGNMENTS

```

P CONT

6D=2400 [MARK REGISTERS  
6E=2432 [ERRORS  
6F=2352 [MEMORY ALLOCATION  
6A=2642 [MNEMONICS  
6C=2700 [MNEMONICS  
6G=2740 [MNEMONICS

[LAP6 LIST

[CONVERT WITH TELETYPE

[SAVE QUARTERS 1-3

[ADD TELETYPE HERE

VALUE	LINE	VALUE	LINE		
1L	0317	347	5H	1177	1250
1P	0457	515	5J	1117	1165
1T	0544	606	5K	1231	1303
2A	0033	30	5L	1254	1327
2B	0046	44	5M	1302	1355
2C	0065	64	5N	1314	1367
2D	0117	120	5Q	1015	1061
2E	0126	131	5R	1034	1100
2F	0251	276	5S	1170	1241
2G	0735	1020	5T	1335	1412
2H	0164	175	6A	2642	1423
2J	0123	125	6B	2000	1417
2K	0152	161	6C	2700	1424
2L	0706	766	6D	2400	1420
2M	0134	140	6E	2432	1421
2N	0722	1004	6F	2352	1422
2P	0635	711	6G	2740	1425
2Q	0272	317	7A	0350	2045
2R	0303	330	7B	0000	2046
2S	0307	335	7D	0300	2047
2T	0677	756	7E	0000	2050
2U	0115	115	8A	1411	1446
2V	0137	144	8B	1417	1454
2W	0232	254	8C	1472	1530
2X	0511	552	8J	1650	1716
2Y	0200	211	8K	1637	1705
2Z	0022	16	8L	1453	1511
3A	0314	344	8M	1544	1607
3B	0351	402	8N	1552	1615
3C	0372	424	8P	1531	1573
3D	0403	436	8Q	1321	1375
3E	0416	452	8R	1523	1564
3F	0454	512	8S	1666	1735
3G	0464	523	8T	1520	1560
3H	0475	535	8U	1676	1746
3J	0512	553	8V	1574	1640
3K	0540	601	8W	1562	1626
3L	0346	376	8X	1501	1540
4A	0203	215	8Y	1613	1660
4B	0207	222	8Z	1422	1460
4C	0624	677	9J	0771	1030
4D	0610	662	9M	0557	622
4E	0230	251	9N	0563	627
4F	0212	226			
4G	0215	232			
4H	0217	235			
4J	0222	241			
4K	0225	245			
4L	0247	273			
4M	0641	716			
4N	0604	655			
4P	0243	266			
4Q	0567	636			
4R	0576	646			
5A	1164	1234			
5B	1001	1044			
5C	1046	1112			
5E	1074	1142			
5F	1141	1210			

P CONT

B1400  
 [LAP6 TELETYPE  
 [77-END PRINT  
 1400 1020 LDA i  
 1401 7773 -4  
 1402 1140 ADM  
 1403 0005 5  
 1404 1460 SAE i  
 1405 7703 -4-70  
 1406 7410 JMP P+2  
 1407 7416 JMP 8B-1  
 1410 7520 JMP 8T  
 1411 0225 #8A XSK i 5  
 1412 7410 JMP P-2  
 1413 1020 LDA i  
 1414 0017 17 [-  
 1415 7562 JMP 8W  
 1416 0535 KBD i [WAIT FOR KEY  
 1417 0076 #8B SET i 16  
 1420 7300 717D  
 1421 6015 JMP 15  
 [PAGE PRESET  
 1422 0065 #8Z SET i 5  
 1423 7773 -4  
 1424 0054 SET 14  
 1425 0000 0  
 1426 7501 JMP 8X  
 1427 7520 JMP 8T  
 1430 0225 XSK i 5  
 1431 7427 JMP P-2  
 1432 1020 LDA i  
 1433 0017 17  
 1434 7562 JMP 8W [-  
 1435 7501 JMP 8X  
 1436 7520 JMP 8T  
 1437 1300 LDH  
 1440 0773 9J+2  
 1441 1420 SHD i  
 1442 6300 630C  
 1443 7452 JMP P+7  
 1444 0062 SET i 2  
 1445 4772 9J+2-4000  
 1446 7613 JMP 8Y [NAME  
 1447 1020 LDA i  
 1450 0063 63  
 1451 7562 JMP 8W [,  
 1452 1020 LDA i  
 1453 0000 #8L 0 [PAGE #  
 1454 7531 JMP 8P  
 1455 1020 LDA i  
 1456 0001 1 [CONSTANT  
 1457 3453 ADD P-4  
 1460 5453 STC P-5  
 1461 3472 ADD 8C [LINE #  
 1462 0470 AZE i  
 1463 7474 JMP 8X-5

P CONT  
1464 7560 JMP 8W-2  
1465 7560 JMP 8W-2  
1466 0062 SET i 2  
1467 5663 8S-2-4000  
1470 7613 JMP 8Y [LN=  
1471 1020 LDA i  
1472 0000 #8C 0 [LN  
1473 7531 JMP 8P [PRINT #  
1474 7501 JMP 8X  
1475 7520 JMP 8T  
1476 0065 SET i 5  
1477 7707 -70 [LINES]PAGE  
1500 6014 JMP 14  
[KST, CARRIAGE RETURN  
1501 0047 #8X SET 7  
1502 0000 0  
1503 0415 KST  
1504 7511 JMP P+5  
1505 0515 KBD  
1506 1420 SHD i  
1507 1200 1200  
1510 7417 JMP 8B [END PRINT  
1511 1020 LDA i  
1512 0012 12  
1513 7562 JMP 8W [CARRIAGE  
1514 1020 LDA i  
1515 3424 3424  
1516 7566 JMP 8W+4 [LINE FEED  
1517 6007 JMP 7  
[LINE FEED ONLY  
1520 0047 #8T SET 7  
1521 0000 0  
1522 7514 JMP 8T-4  
[PRINT #, LEADING ZEROS  
1523 0044 #8R SET 4  
1524 0000 0  
1525 7544 JMP 8M  
1526 7562 JMP 8W  
1527 7552 JMP 8N  
1530 7525 JMP 8R+2  
[PRINT #, NO LEADS  
1531 0044 #8P SET 4  
1532 0000 0  
1533 0450 AZE  
1534 7537 JMP P+3  
1535 7562 JMP 8W  
1536 6004 JMP 4  
1537 7544 JMP 8M  
1540 0450 AZE  
1541 7526 JMP 8R+3  
1542 7552 JMP 8N  
1543 7537 JMP 8P+6  
[# SRS  
1544 0243 #8M ROL 3  
1545 1060 STA i  
1546 0000 NUMBER

```

P CONT
1547 1560      BCL i
1550 7770      7770
1551 6000      JMP 0
1552 1000 #8N  LDA
1553 1546      8M+2
1554 1520      SRO i
1555 3567      3567
1556 6000      JMP 0
1557 6004      JMP 4
[PRINT
1560 1020      LDA i
1561 0014      14 [SPACE
1562 1120 #8W  ADA i
1563 1676      8U
1564 4017      STC 17
1565 1017      LDA 17
1566 0057      SET 17
1567 0000      0
1570 5577      STC P+7
1571 0015      RTA
1572 0071      SET i 11
1573 7764      -13
1574 1560 #8V  BCL i
1575 0001      1
1576 1520      SRO i
1577 0000      TT CODE
1600 3575      ADD P-3 [1
1601 0014      ATR
1602 0072      SET i 12
1603 7347      -430
1604 0232      XSK i 12
1605 7604      JMP P-1
1606 0231      XSK i 11
1607 7574      JMP 8V
1610 6017      JMP 17
[PRINT LINE OR LABEL
1611 0062      SET i 2
1612 5665      8S-4000
1613 0073 #8Y  SET i 13
1614 0000      0 [CHARSILINE
1615 0047      SET 7
1616 0000      0
1617 1322      LDH i 2
1620 1420      SHD i
1621 1200      1200
1622 6007      JMP 7 [END LAP LINE
1623 1420      SHD i
1624 7700      7700
1625 6007      JMP 7 [END NAME
1626 7562      JMP 8W
1627 0233      XSK i 13
1630 7617      JMP 8Y+4
1631 1322      LDH i 2 [END OF TT LINE
1632 1420      SHD i
1633 1200      1200
1634 6007      JMP 7

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P CONT

1635 0225 XSK 1 5  
 1636 7650 JMP 8J

[TT LINE CONTINUES PAST PAGE BREAK

1637 1000 #8K LDA  
 1640 0002 2  
 1641 5647 STC P+6  
 1642 7422 JMP 8Z [PAGE PRESET  
 1643 0062 SET 1 2  
 1644 5334 ST-4000  
 1645 7613 JMP 8Y [LABEL  
 1646 0062 SET 1 2  
 1647 0000 RESET  
 1650 7501 #8J JMP 8X  
 1651 0067 SET 1 7  
 1652 7304 JMP 5M+2  
 1653 0074 SET 1 14  
 1654 7765 -12  
 1655 7560 JMP 8W-2  
 1656 0234 XSK 1 14  
 1657 7655 JMP P-2  
 1660 0073 SET 1 13  
 1661 7711 -66  
 1662 1302 LDH 2  
 1663 7620 JMP 8Y+5

[LIST HEADINGS

1664 3741 3741 [LN=  
 1665 6112 6112  
 1666 1414 #8S 1414 [VALUE LINE  
 1667 5124 5124  
 1670 3750 3750  
 1671 3014 3014  
 1672 3734 3734  
 1673 4130 4130  
 1674 1414 1414  
 1675 1412 1412

[TELETYPE CODES

1676 3540 #8U 3540  
 1677 3542 3542  
 1700 3544 3544  
 1701 3546 3546  
 1702 3550 3550  
 1703 3552 3552  
 1704 3554 3554  
 1705 3556 3556  
 1706 3560 3560  
 1707 3562 3562  
 1710 3432 3432 [EOL  
 1711 3576 3576 ~~----- del~~  
 1712 3500 3500 ~~L~~  
 1713 3514 3514 ~~C~~  
 1714 3516 3516 ~~C~~  
 1715 3532 3532 -  
 1716 3526 3526 +  
 1717 3670 3670 |  
 1720 3506 3506 #  
 1721 3576 3576 ~~----- case~~

P	CONT
1722	3602
1723	3604
1724	3606
1725	3610
1726	3612
1727	3614
1730	3616
1731	3620
1732	3622
1733	3624
1734	3626
1735	3630
1736	3632
1737	3634
1740	3636
1741	3640
1742	3642
1743	3644
1744	3646
1745	3650
1746	3652
1747	3654
1750	3656
1751	3660
1752	3662
1753	3664
1754	3576
1755	3576 [META]
1756	3576 [?]
1757	3572 [=]
1760	3512 [L]
1761	3530 [?]
1762	3534 [P]
1763	3510 [H]
1764	3666 [C]
1765	3600 [^]
1766	3674 [ <i>i</i> ]
1767	3566 [ <i>i</i> ]
1770	3570 [ <i>&lt;</i> ]
1771	3574 [ <i>&gt;</i> ]
1772	3672 [ <i>]</i> ]
1773	3524 [ <i>*</i> ]
1774	3564 [:]
	7A=350
	7B=0
	7D=300
	7E=0

[TELETYPE SUBROUTINES FOR LIST, PRINT MS, AND PRINT IN  
 DEX  
 [Q3  
 [LAP6 TELETYPE

