

IDENTIFICATION

Product Code:	DEC-12-ZR4A-D
Product Name:	DIAL-MS PRINTMS Program Description
Date Created:	July 1, 1970
Maintainer:	Software Services

LAP6-DIAL is an editor, filing system and assembler for use with the PDP-12 computer. The editor and filing portions are derived from the basic LINC program LAP6¹ by Mary Allen Wilkes of Washington University. The assembly portion is derived from several programs used for the PDP-8 computer including PAL-D².

The Digital Equipment Corporation wishes to express to the author, Mary Allen Wilkes (Clark), and the Computer Research Laboratory of Washington University, St. Louis, Missouri, its appreciation for the development set forth in LAP6 as well as its thanks for permission to use parts of the LAP6 program.

¹M. A. Wilkes, LAP6 Handbook, Computer Research Laboratory Tech. Rep. No. 2, Washington University, St. Louis, May 1, 1967.

²PAL-D Assembler Programmer's Reference Manual DEC-D8-ASAA-D.

1.0 PROGRAM OVERVIEW

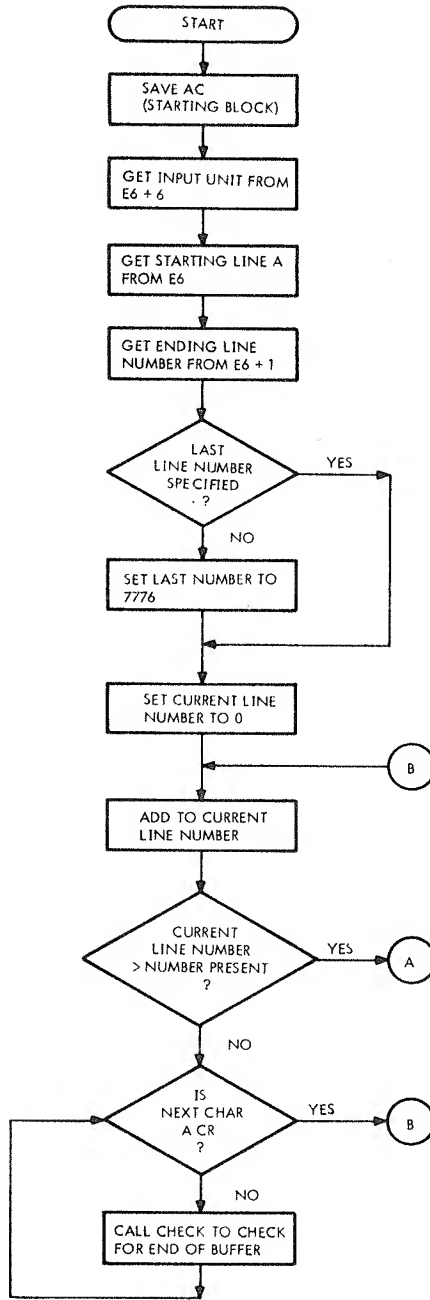
The PRINTMS program prints a source program from the file area by name or from the Working Area on the Teletype. The starting unit is in E6+6 and the starting block number is in the AC from FILECOMS. PRINTMS reads in blocks, converts them to 8-bit ASCII, and prints it on the Teletype until a $\emptyset\emptyset$ character (end of file) is encountered or a carriage return is typed. In addition, it has a counter so that it will skip over C(E6) lines before printing and it will only print C(E6+1) - C(E6)+1 lines so long as C(E6+1) \neq C(E6). If C(E6+1) < C(E6), nothing is printed and DIAL is restarted.

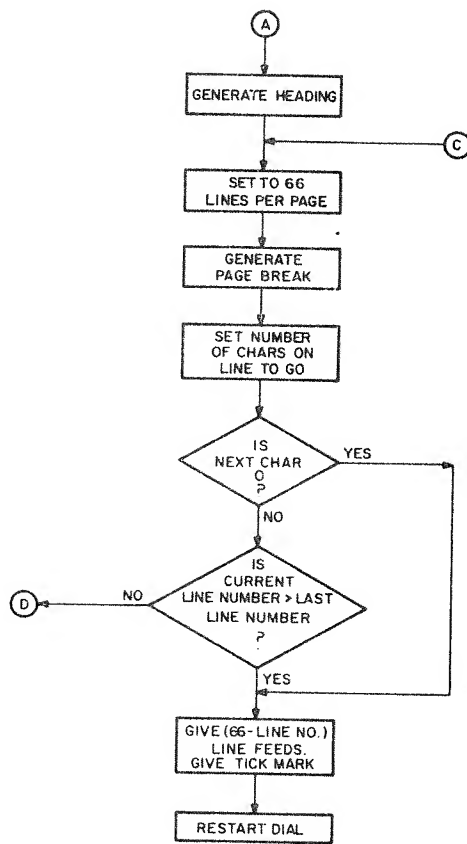
2.0 ENVIRONMENT

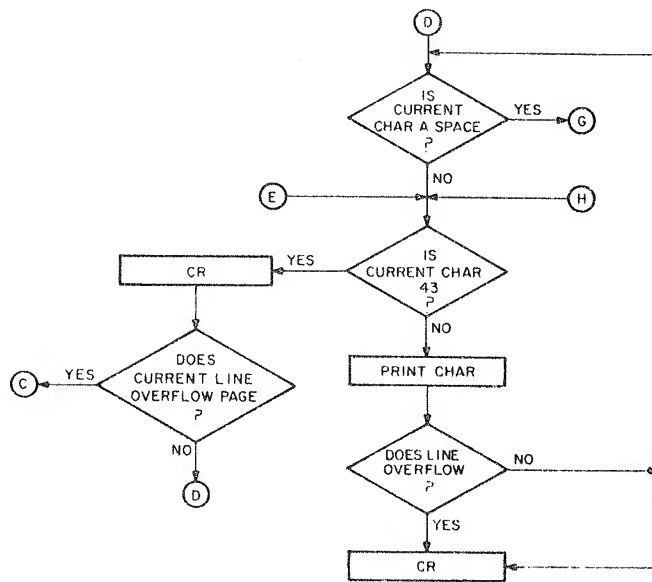
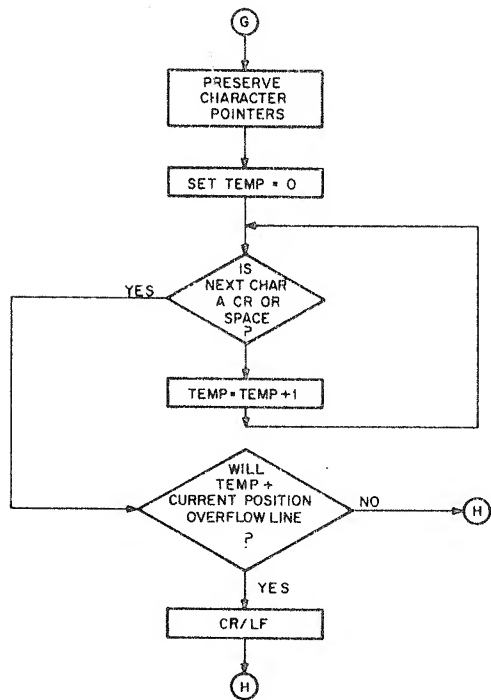
PRINTMS is two blocks long (363 and 364) and resides in memory locations 50000-5777.

3.0 FLOW DIAGRAM (Attached)

4.0 PROGRAM LISTING (Attached)








```

0000
0001
0002
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0037
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0044
0045
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0047
0050
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0054
0055
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0057
0060
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0062
0063
0064
0065
0066
0067
0070
0071
0072
0073

/ PS V3.3
/ LAP6-DIAL :.. PRINT MANUSCRI (SOURCE)
/ ASSEMBLE WITH TELETYPE
/ BLOCK 363, WITH THE TELETYPE ROUTINES IN BLOCK 364
*1000

ENTER WITH STARTING BLOCK OF SOURCE TO BE PRINTED IN AC
OTHER RELEVANT PARAMETERS IN E6

STC SIN*2 /START BLOCK TO I/O LIST
LDA /PICK UP I/O UNIT NO
E6*6
STC SIN /...ALSO TO I/O LIST
SET I 5 /POINTER TO LINE NUMBERS
E6 /GET THE FIRST LINE NUMBER
LDA I 5 /A TEMP FOR 8 MODE ADDRESSING
STA I /SECOND LINE NUMBER
0 /SECOND TEMP
LDA I 5 /GET INTO 8 MODE FOR GOOD COMPARES.
STA I /GET THE FIRST LINE NUMBER
0 /NUMBER 2 -- LINC CLEARED IF LN2 GE LN1
PDP /SECOND TEMP
PMODE /GET INTO 8 MODE FOR GOOD COMPARES.
CLA /GET THE FIRST LINE NUMBER
TAD X1 /COMPLEMENT AC AND SET LINK
CLL CML CIA /NUMBER 2 -- LINC CLEARED IF LN2 GE LN1
TAD X2
LINC
LMODE /GET BACK INTO LINC MODE
LZE /WERE NUMBERS OK?
JMP B8 /NOPE, EXIT.
SET I 5
E6
SET I 3
J9*2 /1ST LINE
LDA 5
AZE /STARTING LINE NO
STC STRTLN /GET A DUMMY INSTRUCTION IN THE AC.
ADD /AND STORE IN THE PAGE BREAK ROUTINE
STC JBN08K /THIS INSURES THAT IT WILL ONLY GIVE TWO LINES INITIALLY.
ADD P1
STC L8
LDA I 5 /LN2
AZE /INCR IF SPECIF
ADD P1
AZE /HOLD FOR COMPARE IF SPECIFIED
STC STOPLN
LDA I 5
SAE I
7777
JMP ,+3
LDA I
5443
STA 3
LDA I 5
STA I 3
LDA I 5
STA I 3
1000 5307
1001 1000
1002 2377
1003 5305
1004 0065
1005 2371
1006 1005
1007 1060
1010 0000
1011 1025
1012 1060
1013 0000
1014 0002
5015 7200
5016 1210
5017 7161
5020 1213
5021 6141
1022 0452
1023 7420
1024 0065
1025 2371
1026 0063
1027 0773
1030 1005
1031 0450
1032 5073
1033 3033
1034 5431
1035 3256
1036 5455
1037 1025
1040 0450
1041 3256
1042 0450
1043 5106
1044 1025
1045 1460
1046 7777
1047 7052
1050 1020
1051 5443
1052 1043
1053 1025
1054 1063
1055 1025
1056 1063

```

```

0074 1027 LDA I 2
0075 1063 STA I 3
0076 1061 LDA I
0077 7777 -0
0100 1063 STA I 3
0101 1064 SET I 3
0102 7377 SET I 5
0103 1066 SET I 5
0104 1067 -1
0105 1070 LDA
0106 1071 CURLIN
0107 1072 SAE I
0110 1073 STRTLN, 1
0111 1074 JMP S5
0112 1075 STC C8
0113 1076 NOP
0114 1077 JMP Z8
0115 1100 JMP X8
0116 1101 SET I 13
0117 1102 -1000
0120 1103 LDA
0121 1104 CURLIN
0122 1105 SAE I
0123 1106 STOPLN, 7776
0124 1107 JMP L5
0125 1125 /DONE
0126 1110 JMP B8-1
0127 1111 /PARTIAL PRINT
0130 1111 JMP BUMPLN
0131 1112 LDA I
0132 1113 43
0133 1114 SHD I 3
0134 1115 JMP K5-7
0135 1116 JMP CHECK
0136 1117 JMP , -5
0137 /PRINT LINE
0140 1120 JMP BUMPLN
0141 1121 SET 2
0142 1122 3
0143 1123 LDH I 2
0144 1124 SHD I
0145 1125 0000
0146 1126 JMP A8
0147 1127 SET I 13
0150 1130 -74
0151 1131 JMP CHECK
0152 1132 LDH I 3
0153 1133 SHD I
0154 1134 4700
0155 1135 SKP 0456
0156 1136 JMP NOTAB
0157 1137 LDA 1000
0160 1140 TBCONT
0161 1141 ADA I
0162 1142 -10
0163 1143 APO I
0164 1144 JMP 7141
0165 1145 AZE I 0470
0166 1146 JMP 7141
0167 1147 COM 0017
0170 1150 ADA I
0171 1151 -1
0172 1152 ADD 2013

/CURRENT LINE NO
/STARTING LINE NO
/NOT YET
/KLUUDGE--DO NOT REMOVE

/WAIT FOR KEY
/GO TO NEXT LINE

/PARTIAL PRINT
/JMP BUMPLN
/LDA I
/SHD I 3
/JMP K5-7
/JMP CHECK
/JMP , -5
/PRINT LINE
/JMP BUMPLN
/SET 2
/LDH I 2
/SHD I
/0000
/JMP A8
/SET I 13
/-74
/JMP CHECK
/LDH I 3
/SHD I
/1134 4700
/SKP 0456
/JMP NOTAB
/LDA
/TBCONT
/ADA I
/-10
/APO I
/JMP 7141
/AZE I
/JMP 7141
/COM
/ADA I
/-1
/ADD

/00=END OF FILE CHARACTER???
/END OF THE LISTING!

/CHECK FOR A TAB
/NOT A TAB
/GET THE OUTPUT POSITION
/SOP DOWN BY 8
/STILL POSITIVE
/AND NONZERO
/NOW G THE POSITIVE REMAINDER
/AND ZAP DOWN FOR THE XSK TO FOLLOW
/ADD IN NUMBER OF CHARS TO GO

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```

0173 1153 0470
0174 1154 7157
0175 1155 0451
0176 1156 7161
0177 1157 1020
0200 1160 7776
0201 1161 4913
0202 1162 1020
0203 1163 7536
0204 1164 5431
0205 1165 1303
0206 1166 1420
0207 1167 4300
0210 1170 7245
0211 1171 7613
0212 1172 1303
0213 1173 1420
0214 1174 4000
0215 1175 7215
0216 1176 0233
0217 1177 7131
0220 1200 7261
0221 1201 1323
0222 1202 1420
0223 1203 4300
0224 1204 7245
0225 1205 0225
0226 1206 7210
0227 1207 7424
0230 1210 7504
0231 1211 0073
0232 1212 7677
0233 1213 1303
0234 1214 7136
0236 1215 0064
0237 1216 0001
0240 1217 0042
0241 1220 0003
0242 1221 7261
0243 1222 1322
0244 1223 1420
0245 1224 4300
0246 1225 7232
0247 1226 0224
0250 1227 1460
0251 1230 0040
0252 1231 7222
0253 1232 1000
0254 1233 0013
0255 1234 2004
0256 1235 0451
0260 1236 7176
0261 1237 1020
0262 1240 7676
0263 1241 2004
0264 1242 0471
0265 1243 7176
0266 1244 7200
0267 1245 0000

ARE I      DOIT      /T00 PAGE
JMP        NOPE      /IT LEFT
APO        /SO XSK WILL KNOW ITS THE END OF THE LINE
JMP        /AND STORE BACK CORRECT COUNT
LDA I      /RESET Z8 TO DO A PAGE BREAK
-1         /PAGE BREAK CALLER
STC        /STORE IT AWAY
13         /GET THE OLD CHAR BACK,
T8         JBN08K
JBN08K    3

NOPE,
NOTAB,
DOIT,
N5,
C5,

/TT LINE CONTINUES PAST PAGE BREAK
XSK I 5
JMP I +2
JMP Z8
JMP X8
SET I 13
-100
LDH 3
JMP M5*5
/COUNT TO NEXT SPACE OR EOL,
/DO NOT BREAK WORDS AT END OF TT LINE
SET I 4
1
SET 2
3
JMP CHECK
LDH I 2
SHD I
4300
JMP I +5
XSK I 4
SAE I
40
JMP I +7
LDA
13
ADD 4
APO
JMP N5
LDA I
-101
ADD 4
APO I
JMP N5
JMP N5*2

```

0273	1247	0273	ADD P1	
0274	1250	0274	STC C8	
0275	1251	0275	STC TBCONT	/ZERO TAB CONTROL
0276	1252	0276	XSK I 5	
0277	1253	0277	JMP K5+1	
0300	1254	0300	JMP K5	
0301	1255	0301	/MS ADDRESS CHECK AND UP LINE NUMBER	
0302	1256	0302	LDA I	
0303	1257	0303	PI 1	
0304	1260	0304	ADM I	
0305	1261	0305	CURLIN 0	/CURRENT LINE
0306	1262	0306	CHECK 0	/SAVE RETURN
0307	1263	0307	LDA 3	/BETA 3 CONTAINS ADDR IN SOURCE BLOCK
0311	1264	0311	SAE I	/END OF BLOCK?
0312	1265	0312	7377	
0313	1266	0313	JMP 6	/NO-RETURN
0314	1267	0314	PDP	/YES-ENTER PHODE FOR READ
0315	1270	0315	GETBLK,	
0316	5271	0316	PHODE	
0317	5272	0317	CPF 0	
0320	5273	0320	CIF 10	
0321	5274	0321	JMS I READ	/GET ONE BLOCK
0322	5275	0322	SIN	
0323	5276	0323	ISZ SIN+2	/INCREMENT BLOCK NO
0324	1277	0324	LINC	
0325	1300	0325	LMODE	
0326	1301	0326	LDF 1	/FORCE CORRECT DATA FIELD
0327	1302	0327	SET I 3	/RESET SOURCE POINTER
0330	1303	0330	6777	
0331	1304	0331	SET 2	
0332	1305	0332	3	
0333	1306	0333	JMP 6	
0334	1307	0334	/	
0335	1308	0335	/	
0336	1309	0336	/	
0337	1310	0337	SIN,	
0340	1311	0340	0	/UNIT
0341	1312	0341	6	/MEM ADDR = 3000
0342	1313	0342	0	/START BLOCK
0343	1314	0343	1	/READ ONE ONLY
0344	1315	0344	READ=21	/POINTER TO READ ROUTINE
0345	1316	0345		
0346	1317	0346		
0347	1318	0347		
0350	1319	0350		
0351	1320	0351	ASHFM 1377-	
0352	1321	0352	UH=0H == THIS ROUTINE IS TOO BIG	
0353	1322	0353		
0354	1323	0354		
0355	1324	0355	/DIAL PRINT MS(SRC)	
0356	1325	0356	/ADD TELETYPE HERE BEFORE ASSEMBLY	
0357	1326	0357	/	
0360	1327	0360	EJECT	
0361	1328	0361		

TELETYPE ROUTINES

N.B. DON'T CHANGE THIS CODE UNLESS CHANGES ARE REFLECTED IN P-BOX,

KBDOPR=1400

E6=2371
A6=2001
G7=346
D7=300
E7=0
J9=771
*1400

/DIAL TELETYPE ROUTINE
/44-END PRINT

LDA I /TO COMPENSATE FOR NO BREAK AT THE END
-4
ADM /BOP DOWN LINE NUMBER COUNTER
5 /DO A LINE FEED
JMP T8 /DONE YET??
XSK I 5 /DOWN TO BOTTOM OF PAGE.
JMP -2
LDA I /THE MINUS SIGN
55 /PRINT IT
JMP W8
SET I 5 /ENOUGH TO GET PAST TEAR RIM,
-14 /C.R. S
JMP X8 /ALL DONE??
XSK I 5 /NOPE.
JMP -2
NOP
PDP
PMODE
CIF CDF 10
JMP I ,+1
7777

LMODE
/PAGE PRESET

SET I 5
-4
SET 14
0
JMP X8
JMP T8
XSK I 5
JMP , -2
LOA I
55
JMP W8 /-
JMP X8
JMP T8
LDH
J9+2
SHD I
5400
JMP ,+7
SET I 2
J9+2-4000
JMP Y8 /NAME
LDA I

1400 1020
1401 7773
1402 1140
1403 0005
1404 7536
1405 0225
1406 7404
1407 1020
1410 0055
1411 7613
1412 0065
1413 7763
1414 7504
1415 0225
1416 7414
1417 0016
1420 0002 B8,
5421 6213
5422 5623
5423 7777
1424 0065
1425 7773
1426 0054
1427 0000
1430 7504
1431 7536
1432 0225
1433 7431
1434 1020
1435 0055
1436 7613
1437 7504
1440 7536
1441 1300
1442 0773
1443 1420
1444 5400
1445 7454
1446 0062
1447 4772
1450 7632
1451 1020
1452 0054

JBNGBK,

Z8,

B8,

0302
0363
0364
0365
0366
0367
0370
0371
0372
0373
0374
0375
0376
0377
0400
0401
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0441
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0447
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0451
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0453
0454
0455
0456

ADDRESS	INSTRUMENT	OPERAND	DESCRIPTION
0462	0000		
0463	1455	JMP P8	
0464	1456	LDA I	
0465	1457	1	/CONSTANT
0466	1460	0001	
0467	1461	3455	ADD , -4
0470	1462	5455	STC , -5
0471	1463	3474	ADD C8
0472	1464	0470	AZE I
0473	1465	7476	JMP X8-6
0474	1466	7611	JMP W8-2
0475	1467	7611	JMP W8-2
0476	1470	0062	SET I 2
0477	1471	5770	S8=4000
0500	1472	7632	JMP Y8 /LN=
0501	1473	1020	LDA I
0502	1474	0000	0 /LN
0503	1475	7555	JMP P8 /PRINT NUMBER
0504	1476	7504	JMP X8
0505	1477	7536	JMP Y8
0506	1500	0065	SET I 5
0507	1501	7706	-71
0510	1502	5630	STC
0511	1503	6014	JMP 14 TBCONT
0512	1504	0047	/KST; CARRIAGE RETURN
0513	1505	0000	SET 7
0514	1506	0415	0
0515	1507	7515	KST
0516	1510	0603	JMP , +6
0517	1511	7400	LIF 3
0520	1512	1420	JMP KBDOPR
0521	1513	4300	SHD I
0522	1514	7420	4300
0523	1515	0002	JMP B8
0524	5516	7200	PDP
0525	5517	1325	PMODE
0526	5520	4726	CLA P215
0530	5521	1327	TAD P215
0531	5522	4726	JMS I TYPOA
0532	5523	6141	JMS I TYPOA
0533	1524	6007	LINC
0534	1525	0215	LMODE
0535	1526	5530	JMP 7
0536	1527	0212	P215, 215
0540	5530	0000	TYPO, PMODE
0541	5531	6041	0
0542	5532	5331	TSF
0543	5533	6046	JMP , -1
0544	5534	7200	TLS
0545	5535	5730	CLA
0546	1536	0002	JMP I TYPO
0550	5537	7200	LMODE
0551	5540	1327	PDP
0552	5541	4744	PMODE
0553	5542	6141	CLA
0554	1543	6000	TAD P212
0555			JMS I TYPES
0556			LINC
0557			LMODE
			JMP 0

/ZERO OUT THE TAB COUNTER, A NEW LINE IS HERE.
/EXIT,

05600	1544	5530	TYPES,	TYFO
0561	1545	0044	R8,	/LINEFEED ONLY
0562	1546	0000		SET 4
0563	1547	7575		
0564	1550	1120		JMP M8
0565	1551	0060		ADA I
0566	1552	7613		60
0567	1553	7603		JMP W8
0570	1554	7547		JMP N8
0571				JMP R8+2
0572				/PRINT NUMBER, NO LEADS
0573	1555	0044	P8,	SET 4
0574	1556	0000		
0575	1557	0450		AZE
0576	1560	7565		JMP :+5
0577	1561	1120		ADA I
0600	1562	0060		60
0601	1563	7613		JMP W8
0602	1564	6004		JMP 4
0603	1565	7575	P8S,	JMP M8
0604	1566	0450		AZE
0605	1567	7572		JMP :+3
0606	1570	7603		JMP N8
0607	1571	7565		JMP P8S
0610	1572	1120		ADA I
0611	1573	0060		60
0612	1574	7552		JMP R8+5
0613				/NUMBER SUBS
0614	1575	0243	M8,	ROL 3
0615	1576	1060		STA I
0616	1577	0000		0
0617	1600	1560		BCL I
0620	1601	7770		7770
0621	1602	6000		JMP 0
0622	1603	1000	N8,	LDA
0623	1604	1577		M8+2
0624	1605	1520		SRO I
0625	1606	3567		3567
0626	1607	6000		JMP 0
0627	1610	6004		JMP 4
0630				/PRINT
0631	1611	1020		LDA I
0632	1612	0040		40
0633	1613	0002	M8,	PDP
0634				PMODE
0635	5614	4631		JMS I CONV
0636	5615	3277		DCA TEMP
0637	5616	1277		TAD TEMP
0640	5617	1300		TAD M211A
0641	5620	7650		SNA CLA
0642	5621	5322		JMP TABP
0643	5622	1277		TAD TEMP
0644	5623	4627		JMS I TYP
0645	5624	2230		ISZ TBCONT
0646	5625	6141	LNRT,	LINC
0647				LMODE
0650	1626	6000		JMP 0
0651	1627	5530	TYP,	TYP
0652	1630	0000	TBCONT,	0
0653	1631	5703	CONVT,	CONVT
0654				/PRINT LINE OR LABEL
0655	1632	0073	VA	SET 4

```

0027 0660
0661 1635 0000
0662 1636 1322
0663 1637 1420
0664 1640 4300
0665 1641 6007
0666 1642 1420
0667 1643 7700
0670 1644 6007
0671 1645 7613
0672 1646 0233
0673 1647 7636
0674 1650 1322
0675 1651 1420
0676 1652 4300
0677 1653 6007
0700 1654 0225
0701 1655 7656
0702 1656 7504
0703 1657 0067
0704 1660 7133
0705 1661 0074
0706 1662 7765
0707 1663 7611
0710 1664 0234
0711 1665 7663
0712 1666 0073
0713 1667 7711
0714 1670 1302
0715 1671 7637
0716
0717
0720
0721
0722
0723
0724
0725
0726
0727
0730
0731
0732
0733
0734
0735
0736
0737
0740
0741
0742
0743
0744
0745
0746
0747
0750
0751
0752
0753
0754
0755

0000
LDH I 2
SHD I
4300
JMP 7 /END DIAL LINE
SHD I
7700 /END NAME
JMP 7
JMP W8
XSK I 13
JMP Y8+4
LDH I 2 /END OF TT LINE
SHD I
4300
JMP 7
XSK I 5
JMP J8
/TTLINE CONTINUES PAST PAGE BREAK
JMP X8
SET I 7
JMP M5+2
SET I 14
-12
JMP W8-2
XSK I 14
JMP I-2
SET I 13
-66
LDH 2
JMP Y8+5

A7=370
B7=0
PMODE
M47,
M40,
P240,
P100,
P211,
TEMP,
M211A,
M10,
P77,
CONVRT,
AND P77
DCA TEMP
TAD TEMP
TAD M47
SNA CLA
JMP TABCV
TAD TEMP
TAD M40
SPA
TAD P100
TAD P240
JMP I CONVRT
TAD P211
JMP I CONVRT
TAD TBCONT
TAD M10
SMA
JMP I-2
JMS SKIP

7731
7740
0240
0100
0211
0000
7567
7770
0077
0000
0302
3277
1277
1272
7650
5220
1277
1273
7510
1275
1274
5703
1276
5703
1230
1301
7500
5323
4332

J8,
A7=370
B7=0
PMODE
M47,
M40,
P240,
P100,
P211,
TEMP,
M211A,
M10,
P77,
CONVRT,
AND P77
DCA TEMP
TAD TEMP
TAD M47
SNA CLA
JMP TABCV
TAD TEMP
TAD M40
SPA
TAD P100
TAD P240
JMP I CONVRT
TAD P211
JMP I CONVRT
TAD TBCONT
TAD M10
SMA
JMP I-2
JMS SKIP

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0756	5727	3230		DCA TBCONT
0757	5730	5225		JMP LNRT
0760	5731	0000	T4,	Ø
0761	5732	0000	SKIP,	Ø
0762	5733	3331		DCA T4
0763	5734	1274		TAD P240
0764	5735	4627		JMS I TYPS
0765	5736	2331		ISZ T4
0766	5737	5334		JMP I-3
0767	5740	5732		JMP I SKIP
0770				LMODE
0771	1741	4040	D5,	4040
0772	1742	4040	4040	
0773	1743	4040	4040	
0774	1744	4040	4040	
0775	1745	4040	4040	
0776	1746	4040	4040	
0777	1747	2317	2317	
1000	1750	2522	2522	
1001	1751	0305	0305	
1002	1752	4040	4040	
1003	1753	4040	4040	
1004	1754	0211	0211	
1005	1755	1601	1601	
1006	1756	2231	2231	
1007	1757	4340	4340	
1010	1760	4016	4016	
1011	1761	0115	0115	
1012	1762	0540	0540	
1013	1763	4040	E5,	4040
1014	1764	4002	4002	
1015	1765	1640	1640	
1016	1766	4002	4002	
1017	1767	1413	1413	
1020	1770	2343	2343	
1021	1771	1416	S8,	1416
1022	1772	7543	7543	



NO ERRORS

SYMBOL VALUE DEF REFERENCES

A6	2001	0370	
A7	0370	0716	
A8	5400	0402	0146
BUMPLN	5255	0302	0130 0140
B7	0000	0717	
B8	5420	0422	0037 0126 0522
CHECK	5261	0306	0135 0151 0220 0244
CONVRT	5703	0752	0653 0746 0750
CONVT	5631	0653	0635
CURLIN	5260	0305	0106 0121 0272
C5	5215	0240	0215
C8	5474	0501	0112 0274 0470
DOIT	5157	0177	0174
D5	5741	0771	
D7	0300	0372	
E5	5763	1013	
E6	2371	0367	
E7	0000	0373	
GETBLK	5270	0315	0014 0017 0041
G7	0346	0371	
JBN0BK	5431	0436	0050 0204
J8	5656	0702	0700
J9	0771	0374	0043 0447 0454
KBDOPR	1400	0366	0517
K5	5077	0114	0134 0277 0300
LNRT	5625	0646	0757
L5	5120	0140	0124
L8	5455	0462	0053
M10	5701	0730	0752
M211A	5700	0727	0640
M40	5673	0722	0742
M47	5672	0721	0736
M5	5131	0151	0217 0235 0704
M8	5575	0614	0564 0603 0623
NOPE	5161	0201	0176
NOTAB	5162	0202	0156
N5	5176	0216	0261 0266 0267
N8	5603	0622	0570 0606
P1	5256	0303	0052 0056 0273
P100	5675	0724	0744
P211	5676	0725	0747
P212	5527	0537	0530 0553
P215	5525	0535	0526
P240	5674	0723	0745 0763
P5	5245	0271	0210 0224
P77	5702	0731	0733
P8	5555	0573	0463 0502
P8S	5565	0603	0607
Q5	5252	0276	
READ	0021	0344	0321
R8	5545	0562	0571 0612
SIN	5305	0337	0012 0015 0322 0323
SKIP	5732	0761	0755 0767
STOPLN	5106	0123	0060
STRTLN	5073	0110	0046
S5	5111	0130	0111
S8	5771	1021	0476
TABCV	5720	0747	0740

SYMBOL VALUE DEF REFERENCES

TYPES	5544	0560	0554	
TYPO	5530	0541	0536	0546 0560 0651
TYPOA	5526	0536	0527	0531
TYPES	5627	0651	0644	0764
T4	5731	0760	0762	0765
T8	5536	0550	0203	0406 0436 0445 0504
W8	5613	0633	0211	0413 0443 0460 0473 0474 0567 0601 0670 0707
X1	5010	0022	0031	
X2	5013	0025	0033	
X8	5504	0512	0115	0231 0416 0435 0444 0472 0503 0702
Y8	5632	0655	0455	0477 0672 0715
Z8	5424	0431	0114	0230