

MCM TAPE TAPE-16.TXT

TAPE LABEL/ANNOTATIONS: "255 Confederation Life  
Communications  
I"

DATE CREATED: 1977

GROUPS:

0	3	4	77	201	202	210	212	214	215	216
217	220	221	222	223	240	241	242	255		

NAMES IN GROUP 0:

BAU	BRK	CHK	CPΔ	DAT	DES	DIR	DXΔ	EDI	FNΔ	GPΔ	INΔ
LM	NPG	OUΔ	PAG	PSI	SCA	SET	SOR	SYI	SYO	UP	VOL
WID	XFE	XPA	YAI	YAO	YCI	YCO	YEI	YEO	ΔCP	ΔCR	ΔGT
ΔLD											

▽BAUD X;R;Z

- [1] @ BAUD X APR 30/76
- [2] @CHANGE BAUD RATE TO X IF [IN OR [OU ARE
- [3] @POINTING TO A COMMUNICATIONS INTERFACE
- [4] @X IS BAUD RATE IN BITS PER SECOND
- [5] R←<sup>-</sup>1+|+.5+25000÷X
- [6] →(~v/225 193=0 1 0/[OUi0)/IN
- [7] ((3↑[Y0[i1]0),R)[Y0[i1]0
- [8] IN:→(~v/225 193=0 1 0/[INi0)/0
- [9] ((3↑[YI[i1]0),R)[YI[i1]0

▽

BRK [3 by 1 by 36 array of type char; element size 3 byte(s)]

CHK [3 by 1 by 42 array of type char; element size 3 byte(s)]

CPΔ [1 by 117 array of type char; element size 3 byte(s)]

00004B  
0168C0  
0B1F1D  
20A84C  
04B048  
C00B74  
C8BF48  
A20B3C  
116C03  
3C0903  
749B3A  
5AC1B2  
2B1F13  
20F930  
FA749B  
DDE6C6

82F0C5  
89E83D  
251DC7  
0405F0  
2E003D  
462801  
749B46  
EA006C  
111600  
560324  
7FD02D  
3F35C2  
272D3D  
2F4EEA  
35CDD6  
1F1420  
C79231  
C79976  
58745E  
463501  
2E014E  
03C580  
E84635  
014CF8  
CD1F13  
203E14  
30FA30  
F9303E  
02303D  
77ADC3  
3C1660  
900B46  
280174  
9B1DD7  
10C274  
892510  
10C227  
F8154E  
39749B  
25750D  
68A20B  
0E0175  
0F3F74  
82DF3E  
0015E7  
2FFC1D  
FB2574  
D1F835  
0746EA  
00252F  
FA15C2  
247F6C  
D6BA4C  
073F0D  
25C22D  
4EEAD0

25CF15  
25F915  
114CF7  
3F74A4  
15CF0D  
254ED7  
3D463F  
01D010  
116C2E  
C715B9  
6CF83F  
0D463F  
01922F  
3C0301  
1E116C  
14C715  
B94CF8  
C23C03  
64F3C7  
B94CEF  
15C71D  
B94CE9  
462101  
3480D0  
073546  
3F0192  
D007C9  
F9C8B0  
0B74C8  
3C110B  
0E2707  
90C11A  
C8C21A  
D0C1B0  
07C496  
C39D4C  
03C496  
13067F  
074000  
45006A  
007400  
9000C2  
00EC00  
FB001B  
012381

DAT [vector of type char of length 14; element size 1 byte(s)]  
APRIL 15, 1977

∇DESCRIBE XΔ;FΔ;TΔ;SΔ;UL;IΔ

- [1] Ⓜ DESCRIBE X APR 14/77 Ⓜ
- [2] ⓂDESCRIBE FUNCTIONS IN GROUP(S) X
- [3] LM 9◦PAGE PSI◦□OU(□YA 66),16◦UL←70ρ' '
- [4] DNG:→(0=x/ρFΔ←(3=□NC FΔ)≠FΔ←□XN □XV◦□XS 1↑XΔ)/NON

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[5] NPG→(10<60-1↓PC10)/GNP
[6] GNP:←2 0ρ''◦←UL◦←'GROUP', (5⊕1↑XΔ), ' ', GPD◦←''◦←UL
[7] DNF:SD←1 4↑FΔ◦IΔ←I0
[8] DFN:→DFN◦←7↓TΔ◦→('⊗'≠TΔ[6+I0])/NXT◦→(5=ρTΔ←(,SD) ⊞ZZ[IΔ←IΔ+1]FND)/NXT
[9] NXT:→(0≠x/ρFΔ←1 0↓FΔ)/DNF◦←''
[10] NON:→(0≠ρXΔ←1↓XΔ)/DNG◦←''
[11] LM 0◦NPG◦←UL

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▽

#### ▽DIRECTORY

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[7] ⊗ DIRECTORY APR
[2] ⊗LIST TAPE DIRECTORY ON PRINTER
[3] ←10 0ρ''◦LM 9◦PAGE PSI◦OU(⊞YA 66),16
[4] ←' COMMUNICATIONS SUBSYSTEM'
[5] ←' SOFTWARE SUPPORT PACKAGE'
[6] ←''◦←(45ρ' '),DATE
[7] ←''◦←'SECTION 1: FILE DIRECTORY.'
[8] ←' GROUP 0: ',GPD◦XS 0
[9] ←' GROUP 3: ',GPD◦XS 3
[10] ←' GROUP 4: ',GPD◦XS 4
[11] ←''◦←'SECTION 2: MCM PERIPHERAL SUPPORT.'◦←''
[12] ←' GROUP 201: ',GPD◦XS 201
[13] ←' GROUP 202: ',GPD◦XS 202
[14] ←''◦←'SECTION 3: RS-232C COMPATABLE PRINTERS AND TERMINALS.'◦←'' M
[15] ←' GROUP 210: ',GPD◦XS 210
[16] ←' GROUP 212: ',GPD◦XS 212
[17] ←' GROUP 214: ',GPD◦XS 214
[18] ←' GROUP 215: ',GPD◦XS 215
[19] ←' GROUP 216: ',GPD◦XS 216
[20] ←' GROUP 217: ',GPD◦XS 217
[21] ←''◦←'SECTION 4: COMPUTER TO COMPUTER COMMUNICATIONS.'◦←''
[22] ←' GROUP 220: ',GPD◦XS 220
[23] ←' GROUP 221: ',GPD◦XS 221
[24] ←' GROUP 222: ',GPD◦XS 222
[25] ←' GROUP 223: ',GPD◦XS 223
[26] ←''◦←'SECTION 5: APPLICATION PACKAGES.'◦←''
[27] ←' GROUP 240: ',GPD◦XS 240
[28] ←' GROUP 241: ',GPD◦XS 241
[29] ←' GROUP 242: ',GPD◦XS 242
[30] NPG◦LM 0◦XS 0

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▽

#### ▽DXΔ XΔ;DΔ;NΔ;NMΔ;HΔ

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[1] ⊗ DXΔ XΔ JUNE 14/76
[2] ⊗SUBFUNCTION TO ΔCR
[3] →(VΔΔ,VΔ,VΔ,FΔΔ,VΔ,A2Δ)[I0+NC XΔ]
[4] FΔΔ:NΔ←I0-1
[5] FΔ:→EΔ◦→(5≠ρ←XΔ ⊞ZZ[NΔ←NΔ+1]FND)/FΔ
[6] VΔ:NΔΔ←(',(⊕ρDΔ),''),((6ρ0)≠0\0ρDΔ←XΔ)/' ALPHA'
[7] NMΔ[( '='=NMΔ)/ιρNMΔ]←', '
[8] →EΔ◦←XΔ◦←XΔ,' : ',NMΔ
[9] A2Δ:→EΔ◦←XΔ,' - SYSTEM VARIABLE'
[10] VΔΔ:←XΔ,' NO VALUE'
[11] EΔ:←''

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▽

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VR←EDIT TEXT;I;J;K;M;RC;BC
[1]  Ⓢ R←EDIT TEXT          APR 15/77
[2]  ⓈEDIT ALPHA TEXT 1 ROW AT A TIME
[3]  I←I0·BC←(RC←1↑ρR←TEXT)ρ' '
[4]  NXΔ:→DUN[ι0≥K←3↑J→((3↑J)ZZ CHK)/LNE·J←5(1φ4I),R[I;]
[5]  K←I+1·R[I;]←RC↑(4↓J),BC→NLΔ[ιI≠K
[6]  NLΔ:→NXΔ[ι(1↑ρR)≥I←K
[7]  DUN:'EDIT IS COMPLETE'
[8]  →0
[9]  LNE:'LINE NUMBER ERROR'
[10] →NXΔ
    ▽

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FNA [3 by 1 by 52 array of type char; element size 3 byte(s)]

GPA [vector of type char of length 30; element size 1 byte(s)]  
 DIRECTORY AND COMMON FUNCTIONS

INA [1 by 217 array of type char; element size 3 byte(s)]

```

F4234C
261F1D
203E00
30167F
FAC046
1A2677
3D74A4
1D1DD7
151506
27F815
114CFB
160E1E
172625
0E0273
E26C20
C7B070
AC0BEA
F31DC7
3C0248
B60B1D
1DC73C
0648AC
0B1DC7
243F3C
0148AC
0BCAD1
1F1420
FA30FB
D22174
9B3D6C
031D1D
F72E7F
3D74A4
3D46EA

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25D2E8  
71AEC2  
3C6E68  
F824C1  
24406C  
20C23C  
274C0E  
749B68  
692546  
E025C6  
B04C77  
4E7B3C  
6F4C09  
749B68  
4F2516  
274E07  
C23C27  
4C020D  
D7C23C  
6F6C34  
0DFA46  
B12535  
25356C  
4C7611  
293D06  
7F951F  
1D2097  
5AA825  
25153D  
4E1328  
3D2573  
041D73  
04D746  
B12573  
043DA8  
4AB125  
71FA4E  
91D2E8  
35251F  
1E20CF  
35B968  
E724B1  
760528  
3D254E  
D9293D  
25D715  
3D4EDC  
3D253D  
4EDA3D  
253D73  
04C4B0  
4AEA25  
4ECE35  
353571  
FA749B  
0B1F1D

20D774  
A41D1D  
C792FA  
27247C  
D874A4  
C22DCD  
D6745E  
F2D3E9  
44CC05  
0D2574  
A4BB6C  
07C62C  
FF8427  
D007C4  
96D007  
352535  
2B760C  
293D25  
D2E8D7  
1546B1  
254EEF  
283D25  
D746B1  
257304  
1D7304  
4EE1D2  
E8461D  
251F1D  
20C792  
C85AA4  
250DA8  
817E03  
157453  
3E274E  
19D2E8  
461D25  
46A825  
762EC7  
92C86C  
0A1627  
25C7FA  
D01509  
4CF90D  
25D27E  
F01600  
FA3048  
8925F0  
100407  
01FB3D  
EA3D25  
3D462F  
2535D6  
D27EFA  
44C624  
06FF4E  
020601

1F1D20  
8733F8  
07E2D2  
863D1F  
1420C7  
B06C22  
C730F7  
E81D1D  
DF1515  
18196C  
15C7BC  
6C0506  
062D4E  
F41525  
D27E14  
06F025  
0E0574  
533507  
06FD1F  
002187  
F044B2  
00749B  
2B461D  
253546  
E025C7  
92D035  
EA293D  
253D46  
2F25D6  
3515CF  
153DC1  
375605  
C12C7F  
04021F  
1E20F8  
E8F231  
3D253D  
07749B  
2B1DC7  
3C0248  
B60B1D  
E71DBF  
48AC0B  
74C8C8  
749BD7  
0948AC  
0BC7B0  
68AC0B  
D815C7  
375601  
A81583  
BA6048  
26D021  
4CEA07  
032459  
246324



722475  
248424  
9924AC  
24BD24  
C424D5  
24F424  
3D2546  
255225  
5B256C  
256F25  
8C259A  
25A225  
EE25F2  
25FE25  
45A600

∇LM XΔ

[1] Ⓜ LM XΔ JULY 16/76  
[2] ⓂSET LEFT MARGIN ON MCP-132 TO XΔ  
[3] (0,XΔ,0 0)□Y0[11]2◦→(66≠0 1 0/□OU10)/0

∇

∇NPG

[1] Ⓜ NPG APR 30/76  
[2] ⓂFORCE NEW PAGE ON PRINTER. NOTE PAGEING MUST BE ON.  
[3] □←((0[(1↑□Y0[11]6)-1↓□PC10),0)ρ''

∇

0UΔ [1 by 93 array of type char; element size 3 byte(s)]

7C2685  
2768C0  
0B74C8  
3C1148  
AC0B74  
9B3A5A  
C1B26C  
46749B  
C22DC1  
85E81D  
3D160E  
1E1726  
250E02  
73E26C  
20C7B0  
70AC0B  
EAF31D  
C73C02  
48B60B  
1D1DC7  
3C0648  
AC0B1D  
C7243F  
3C0148

AC0BCA  
D11F14  
20FA30  
FB749B  
1D463D  
274C06  
3535D2  
214E24  
D22115  
D7460E  
272535  
296C0E  
3DD27E  
EBF43C  
F864ED  
465827  
4EE635  
BB6406  
4C09C4  
BE6405  
0E7F44  
50273D  
250E0F  
465027  
4EC3E2  
D2863D  
1F1420  
C7B06C  
22C730  
F7E81D  
1DDF15  
151819  
6C15C7  
BC6C05  
06062D  
4EF415  
25D27E  
1406F0  
250E05  
745335  
072574  
9B1DC7  
0E01B0  
6C04C7  
7489CF  
E93DEB  
F4073D  
1FFD20  
F9304E  
063D1F  
FE200E  
7FF91F  
2F21E7  
20216C  
131E53  
06FF41

B0487A  
2771A1  
194CF4  
214CEF  
4E02D2  
0ED255  
6C0335  
2F0735  
07D226  
E126F2  
260327  
0A276E  
A70000

∇ZΔ←PAGE MΔ

[1]    Ⓜ       ZΔ←PAGE MΔ                    APR 6/76  
[2]    ⓂSET PAGEING TO PRINT 1↑MΔ LINES ON  
[3]    ⓂA PAGE WHICH IS 1↓MΔ LINES LONG  
[4]    ⓂRESULT (ZΔ) IS THE PREVIOUS SETTING  
[5]    →(≤/MΔ)/L8°→(θ=ρ,MΔ)/L8  
[6]    'RANGE ERROR'  
[7]    →  
[8]    L8:((φ-\φMΔ),(ρ,MΔ)↓ZΔ←□Y0[11]6)□Y0[11]6  
[9]    ZΔ←φ+\φ2↑ZΔ°□PC 0 0

∇

PSI    [numeric vector of length 2; element size 1 byte(s)]  
60 66

SCA    [3 by 1 by 99 array of type char; element size 3 byte(s)]

∇SETUP T

[1]    Ⓜ       SETUP T                        JULY 06/76  
[2]    ⓂSET UP COMMUNICATIONS INTERFACE  
[3]    ⓂUSING TABLES YYI, YYO FOR CORRESPONDANCE  
[4]    ⓂYEI YEO FOR EBCDIC, AND YAI YAO FOR ASCII  
[5]    ⓂACCORDING TO T (CEA).  
[6]    ⓂNOTE: PROMPT SWITCH MUST CORRESPOND TO TABLE SETTING  
[7]    →SUO[10≠1↑□IN □YA('I'□YW 'Y',T,'I'),255-64  
[8]    'NO SUCH INPUT DEVICE'  
[9]    →  
[10]   SUO:→0×10≠1↑□OU □YA('O'□YW 'Y',T,'O'),255-128+32  
[11]   'NO SUCH OUTPUT DEVICE'  
[12]   →

∇

∇RΔ ←SORT AΔ\_

[1]    Ⓜ       RΔ ←SORT NΔ\_                    JULY 09/76  
[2]    ⓂSORT THE ALAPA ARRAY NΔ\_ INTO ASCENDING SEQUENCE  
[3]    ⓂCAN BE USED FOR SORTING GROUP NAMES EG. Z←SORT □XN 2

[4] @NOTE: BLANKS SORT HIGH  
 [5] RA ←AA\_ [A391QY AA\_ ;]  
 ▽

▽SYI

[1] @ SYI  
 [2] @SET INPUT TO EIA INTERFACE S  
 [3] @USING YYI TO GENERATE INPUT TABLES  
 [4] →0×10≠ 1↑IN YA ('I'YW'YYI'),255-64  
 [5] 'NO SUCH INPUT DEVICE'  
 [6] →  
 ▽

▽SYO

[1] @ SYO  
 [2] @SET OUTPUT TO EIA INTERFACE  
 [3] @USING YYO TO GENERATE OUTPUT TABLES  
 [4] →0×10≠ 1↑OU YA ('O'YW'YYO'),255-128+32  
 [5] 'NO SUCH OUTPUT DEVICE'  
 [6] →  
 ▽

▽UP X

[1] X←X,0ρ''  
 ▽

VOL [vector of type char of length 34; element size 1 byte(s)]  
 COMMUNICATIONS AND MCP-132 SUPPORT

▽R←WIDTH X;Y

[1] @ R←WIDTH X APR 14/77  
 [2] @CHANGE PRINT WIDTH TO X (30≤X≤132)  
 [3] @IF 2=ρX CHANGE OVERFLOW CHARACTER  
 [4] @IF 3=ρX CHANGE OVERFLOW CHAR AND INDENT'  
 [5] @RESULT R IS THE PREVIOUS WIDTH  
 [6] @WIDTH IS UNCHANGED IF X IS EMPTY.  
 [7] →L8[ι(30≤1↑X)∧(1↑X)≤132°→(0=ρX)/L8  
 [8] 'RANGE ERROR'  
 [9] →  
 [10] L8:R←(ρ,X)↑Y←Y0[ι1]1  
 [11] (X,(ρ,X)↓Y)Y0[ι1]1  
 ▽

▽R←XFER X

[1] @ R←XFER X APR 30/76  
 [2] @TRANSFER DATA X TO AND FROM EIA INTERFACE  
 [3] °IN 1↑OU YA 1 31  
 [4] R←''°←X  
 [5] @IN CASE ATTENTION  
 ▽

XPA [1 by 37 array of type char; element size 3 byte(s)]

00006B  
0068C0  
0B1F11  
00A84C  
04B048  
C00B74  
C8BF48  
A20B3C  
140B74  
9BC72D  
3D3D77  
ADC33C  
166090  
0B35C7  
15D024  
7F6C1E  
BA6C0C  
D0CF15  
25F915  
25114C  
F74EEA  
3F749B  
15CF2F  
25F915  
114CFB  
254EDB  
749B25  
750D68  
A20B0E  
01750F  
3F7482  
DF3E00  
15E72F  
FC1DFB  
2574D1  
F80708  
800000

YAI [34 by 1 array of type char; element size 8 byte(s)]

8100000006334652 8482060100808008 00000000000A0080 80800D8080848484  
8482848482838484 84846C8484848484 8484848484848484 8484848484276458  
2A2B2C2E5630312F 374B342842000102 0304050607080957 5551365C43295E47  
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 506C522D356C0B0C  
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6C6C6A84000000  
026900FF00200079 80B902FF96FD06F5 82FD82FD02FD82FD 027D00FF86FD00FD  
02FD00FD007D00FD 006900FF0040007D 0060007B8040007B 006900FF026D00F9  
00F900FF82FF0279 86B800FD80FF82FD 86FF80FD00FC007D A6FD02FF00FD00FD  
02FD00FD00FD007D 0000007900F90079

YA0 [18 by 1 array of type char; element size 8 byte(s)]

4100000006304652 8482060000808008 00000000000A0080 80800D8080303132  
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E4023 24255E262A282982 822D5F3D2B508244 534D824F5451822F

3F825955424E4549 2C528282825B3C5D 82823B273A224A82 4B3E474157435658  
5A21828282827F7E 8282000000000000

YCI [34 by 1 array of type char; element size 8 byte(s)]  
8100000007410152 78820600002D1F1D 3D003D00032E3D1F 1C2D3C341F27501E  
140419164205560F 1A6C6C6C6C022818 36246C6C6C061315 1B88836C87011722  
11001D1223071C0E 556C6C6C6C03201F 1009210C34080B0D 4B82846C8427523F  
592B3E26432C5849 386C6C6C6C295C48 37636C6C6C2D4A5B 4088836C87643C62  
5D313B25452E4C3A 576C6C6C6C2A6146 0A305F47352F5E60 5182846C84000000  
08CFC8C708C308CF C84300DFE0C700CF D88248CF0843004B 444788C328533023  
2853000338030043 3A03387338422003 3803205B3803301B 2803202BC84300DF  
584B08CFF8C788FF E84308CF68C7ECCF FCCFC8FFEC4308DF FC47CCDF00030003  
0001200300032003 2001204300010003

YCO [18 by 1 array of type char; element size 8 byte(s)]  
4100000007410152 8282060000801F1D 3D003D00032E3D1F 1C80808080242010  
3004081828383473 39363A2A0A332326 19031A062112050B 1B29250232313522  
2714664600115070 4448586878746482 82377713534B826A 65618245425B8207  
4782677276524A59 3B69828282017B41 82822B096B494382 5A516379757A7162  
5460828282827F82 8282000000000000

YEI [34 by 1 array of type char; element size 8 byte(s)]  
8100000007410152 78820600002D1F1D 3D003D00032E3D1F 1C2D3C341F273450  
36081B231204171F 0E6C6C6C6C02151D 0C006C6C6C061921 1088836C87011442  
0B091C2413051820 0F6C6C6C6C03161E 0D56554B28071A22 1182846C6C273552  
372F4045252B3C46 3A6C6C6C6C295B3B 47316C6C6C2D3E5F 0A88836C87645943  
5E304C634A2C4861 496C6C6C6C2A263F 605857515C2E3862 5D82846C6C000000  
08CFC8C708C308CF C84300DFE0C700CF D88248CF0843004B 444788C328533023  
2853000338030043 3A03387338422003 3803205B3803301B 2803202BC84300DF  
584B08CFF8C788FF E84308CF68C7ECCF FCCFC8FFEC4308DF FC47CCDF00030003  
0001200300032003 2001204300010003

YEO [18 by 1 array of type char; element size 8 byte(s)]  
4100000007410152 7882060000801F1D 3D003D00032E3D1F 1C80808080142010  
300828183804245B 2313330B2B1B3B07 2721113109291939 052512320A2A1A3A  
0626477100375070 4868587844645482 820141034379824B 5249825972458222  
6282464A53696B67 3665828282027642 8282353475746182 51777B635A736A7A  
6660828282827F82 8282000000000000

∇ΔN ΔCP ΔG;ΔGC;ΔGN;ΔT

- [1] @ ΔN ΔCP ΔG JUNE 25/76
- [2] @COPY GROUP(S) ΔG TO DRIVE ΔN
- [3] @IF ΔG IS EMPTY,COPY ALL GROUPS
- [4] ΔG←[XN]0→(0≠ρ,ΔG)/ΔNA←[PT]←10
- [5] ΔNA:'GROUP ';ΔGC←[XS] ΔGC←ΔGN←SORT [XN] ΔGC←1↑ΔG
- [6] ΔGC [XC][ΔN]ΔGN
- [7] L5:ΔGC [XW][ΔN]ΔT→(0=[NC] ΔT←1 4↑ΔGN)/L6
- [8] L6:→(0≠ρΔGN←1 0↓ΔGN)/L5,L7
- [9] L7:→(0<ρΔG←1↓ΔG)/ΔNA
- [10] [PT]←0←[XS] 0←[XF][ΔN]10

∇

∇ΔCR GND; IΔ; GΔ; NMD; GZΔ

```
[1] @ ΔCR X MAY 04/76
[2] @DISPLAY FUNCTION X (FORMATTED WITH LINE NUMBERS)
[3] @IF X IS NUMERIC, DISPLAY ALL FUNCTIONS IN THE GROUP(S) X
[4] LM 9◦WID 100◦PAGE PSI◦□OU □YA 66◦GZΔ◦□XV
[5] →L3Δ◦NMD←(NMD □ZZ[128+□Y' ']BRK)◦→L3Δ[ι2=ρρNMD◦GND←1◦→L0Δ[ι0=0\0ρNMD←GND
[6] L0Δ:GND←GND[ΔGND←((GNDιGND)=ιρGND)/GND←, GND]
[7] L1Δ:□XS GΔ◦NMD←SORT □XN GΔ←' 'ρGND◦→EΔ[ι0=ρGND
[8] LM 9◦□←DATE◦LM 60◦□←'VOLUME: ', VOL
[9] □←' '◦□←'GROUP: ', (4φ8φGΔ), GPΔ
[10] □←' '◦□←(( ( (×/ρNMD)÷80), 80)ρNMD, 20 4p' ' '
[11] L3Δ: IΔ←□IO-1
[12] L2Δ:→L2Δ◦DXΔ NMD[IΔ←IΔ+1;]◦→E1Δ[ιIΔ=□IO+1+1↑ρNMD
[13] E1Δ:→L1Δ◦GND←1↓GND◦NPG
[14] EΔ:LM 0◦□XS GZΔ
```

∇

∇ΔGT; GROUP; CNTR

```
[1] @ ΔGT JUN 25/77
[2] @ LIST GROUP TITLES ON PRINTER
[3] @ VARIABLE GPΔ MUST BE PREDEFINED FOR EACH GROUP
[4] @ GPΔ IS A DESCRIPTION OF A GROUP THAT RESIDES IN THAT GROUP
[5] @
[6] □←' '◦□←' FILE: ', (50↑VOL, 50ρ' '), DATE◦WID 90◦PAGE PSI◦LM 3
[7] □←' '◦□←' GROUP TITLE'◦GROUP←□XNι0×CNTR←□IO◦□←' '
[8] L1:□←(7φGROUP[CNTR]), ' ', GPΔ◦□XS GROUP[CNTR]
[9] →((CNTR←CNTR+1)≤ρGROUP)/L1
[10] □XS 0◦NPG◦□←'DISK SPACE USED IS', (3 0 0φ(1↑SPA 1)÷10.24), ' PERCENT.'◦□←2
0ρ''
```

∇

∇ΔLD; ΔG; ΔI; ΔX; XΔ; ΔRX

```
[1] @ ΔLD APR 14/77
[2] @LIST GROUP TITLES AND NAMES ON PRINTER
[3] □←'FILE: ', (50↑VOL, 50ρ' '), DATE◦PAGE PSI◦□OU(□YA 66), 16
[4] □←'ACTIVE GROUPS ARE: ', φΔG←□XNι0×ΔI←□IO◦□←' '
[5] ΔL:□←'GROUP', (7φΔG[ΔI]), ' ', GPΔ◦□XS ΔG[ΔI]◦□←' '
[6] □←XΔ←((ΔRX◦→(0=ΔRX←|(×/ρΔX)÷80)/ΔN), 80)ρ(ΔX←□XN ΔG[ΔI])◦LM 6◦□←' '
[7] ΔN:□←, ΔRX↑ΔX◦→(0=×/ΔRX←1 1×(ρΔX)-20 0×ΔRX)/ΔM
[8] ΔM:→((ΔI←ΔI+1)≤ρΔG)/ΔL◦LM 0
[9] NPG 0
```

∇

NAMES IN GROUP 3:

FSD F GPΔ QQX RAM RCS REC RED ROM SIZ SPA STA  
TRC

FSD [3 by 1 by 23 array of type char; element size 3 byte(s)]

∇F;T;A;Y;YCO;Y0;AL

```
[1] @ F JUNE 14/76
[2] @PRINT CURRENT COMM TABLES ON MCP-132
[3] YCO←Y0[1]Y←(-1)+11
[4] Y0←Y0[2+1]AL←Y(-1)+1109
[5] A←OU10'0'YR'T' 'SAVE OUTPUT TABLE'
[6] °PAGE 48 51°OU(YA 66),16°0'YX10
[7] □←' '□←'COMM CONTROL TABLES FOR: ',GPAΔ,' ',DATE
[8] □←' '□←' OUTPUT INPUT'
[9] □←(YCO),(11 4p' '),YI[1]Y
[10] □←' '□←'OUTPUT TRANSLATE TABLE'°□←'
[11] □←14Y13↑Y0°□←6 16pY0
[12] □←' '□←'INPUT TRANSLATE TABLE'°□←'
[13] □←8 16pYI[1+1](-1)+1128
[14] →( '~'p(6p2)T'pYI[1]0)/NP° 'PROMPT?'
[15] □←' '□←'INPUT PROMPT TABLE'°□←'
[16] □←14Y13↑Y0°□←6 16pY0←YI[2+1]AL
[17] NP:°0'YW'T'°OU 1↑A°NPG
```

∇

GPA [vector of type char of length 25; element size 1 byte(s)]  
UTILITIES AND DIAGNOSTICS

QQX [3 by 1 by 26 array of type char; element size 3 byte(s)]

∇RAM X

```
[1] @ RAM X APR 30/76
[2] @CHECK RANDOM ACCESS MEMORY
[3] @X IS MEMORY SIZE, IE. 2 4 OR 8
[4] →(0=0 X)/OK
[5] 'RAM MEMORY ERROR'
[6] →0
[7] OK:'RAM MEMORY OK'
```

∇

RCS [numeric vector of length 19; element size 3 byte(s)]  
179798 173599 165295 175999 156499 163119 219896 166212 172482 172372 171720  
160806 250427 171172 168887 155953 163022 522240 522240

∇REC;IΔ\_;NA\_

```
[1] @ RECOVER JAN 03/77
[2] @RECOVER INFORMATION FROM A TAPE WHERE THE DIRECTORY
[3] @HAS BEEN DESTROYED. MOUNT DEAD TAPE ON DRIVE 1,
[4] @INITIALIZED TAPE ON DRIVE 2.
[5] NA_ ←' '°PT←10°IΔ_ ←2
[6] JΔ_:IΔ_ ←(1↑IΔ_)ZZ QQX
[7] (1↑IΔ_)XW[3]NA_ ←(1 0↓FN)4 0↓VA
[8] →JΔ_°EX NA_°□←(,NA_),6YIΔ_
```

∇



∇RED IΔ;NA

- [1] @ RECOVER JAN 03/77
- [2] @RECOVER INFORMATION FROM A DISK WHERE THE DIRECTORY
- [3] @HAS BEEN DESTROYED. MOUNT DEAD DISK ON LEFT DRIVE,
- [4] @INITIALIZED DISK ON RIGHT DRIVE.
- [5] NA ← ' ' °PT←10
- [6] JΔ :IΔ ← 1 0+(1↑IΔ) ZZ QQX 1
- [7] (1↓IΔ) XW[2]NA ←(1 0↓FN) 4 0↓VA
- [8] →JΔ °EX NA °XF[2] 10°←(,NA),6↑IΔ °255 XW[2] 'IΔ'

∇

∇ROM ;C

- [1] @ ROM APR 14/77
- [2] @CHECK ROM MEMORY.
- [3] @RCS IS CHECK SUMS FOR DISK SYSTEM
- [4] →OK[1↑/RCS= 119
- [5] 'ROM MEMORY ERROR'
- [6] →0
- [7] OK:←'ROM MEMORY IS GOOD'

∇

∇R←SIZE M

- [1] @ R←SIZE M MAY 03/77
- [2] @R IS SIZE IN BYTES OF DATA M
- [3] R←1+|.125+256\*1[ /, / / | M →MΔ[ 1R←0≠0\0ρM
- [4] MΔ:R←2+(ρM)+(×/ρM)×R

∇

∇ZΔ←SPACE XΔ

- [1] @ ZΔ←SPACE XΔ MAY 03/76
- [2] @1↑ZΔ IS THE NUMBER OF BLOCKS USED ON FILE XΔ
- [3] @1↓ZΔ IS 1+LAST BLOCK USED ON FILE XΔ
- [4] @IF 1↓ZΔ IS MUCH LARGER THAN 1↑Z, THE FILE
- [5] @SHOULD BE COPIED TO COMPRESS UNUSED SPACE
- [6] @A DISK CONTAINS 1023 - 256 BYTE BLOCKS, AND A 300
- [7] @FOOT TAPE APPROXIMATELY 800 - 128 BYTE BLOCKS.
- [8] ZΔ←ZZ[XΔ]FSΔ

∇

∇STATUS X;S;AS

- [1] @ STATUS X APR 30/76
- [2] @RETURN STATUS OF OMNIPOINT DEVICE
- [3] @DISPLAY STATUS OF DEVICE X (IE. STATUS 2) OR
- [4] @DISPLAY STATUS FROM ANSWER-BACK (IE STATUS 0U10)
- [5] °OU S°X←OU X°S←1↑OU10°→(3=ρ,X)/S1
- [6] S1:AS←8 3ρ'NO YES'[,(S×3)°.+13]°S←(8ρ2)TX[3]
- [7] →(0 66 193 196 197 225=X[2])/NO,HY,ROF,TAP,DSK,RON
- [8] 'DEVICE TYPE UNKNOWN'
- [9] 'STATUS : ',S
- [10] →0
- [11] NO:'NO DEVICE AT THIS ADDRESS'
- [12] →0

```

[13] HY:'DEVICE : MCP-132'
[14] 'PAPER FEED READY?      ',AS[1;]
[15] 'CARRIAGE READY?        ',AS[2;]
[16] 'CHARACTER PRINT READY? ',AS[3;]
[17] 'RIBBON UP?             ',AS[4;]
[18] 'RIBBON RED?            ',AS[5;]
[19] 'PAPER OUT?             ',AS[6;]
[20] 'PRINTER CHECK?        ',AS[7;]
[21] 'PRINTER READY?        ',AS[8;]
[22] →0
[23] ROF:'RS-232C (PROMPT OFF)'
[24] →R
[25] RON:'RS-232C (PROMPT ON)'
[26] R:'READ OVERRUN?        ',AS[1;]
[27] 'READ PARITY ERROR?     ',AS[2;]
[28] 'READ FRAMING ERROR?   ',AS[3;]
[29] 'DEVICE READY?         ',AS[4;]
[30] 'RECEIVE CARRIER OFF? ',AS[5;]
[31] 'BREAK RECEIVED?       ',AS[6;]
[32] 'TRANSMIT BUFFER EMPTY? ',AS[7;]
[33] 'RECEIVE DATA READY?  ',AS[8;]
[34] →0
[35] TAP:'DEVICE : CASSETTE TAPE'
[36] 'RECEIVE DATA READY?  ',AS[1;]
[37] 'TRANSMIT BUFFER EMPTY? ',AS[2;]
[38] 'PARITY ERROR?         ',AS[3;]
[39] Δ
[86] 'READ OVERRUN?
[40] 'END OF TAPE?         ',AS[5;]
[41] 'CASSETTE NOT MOUNTED? ',AS[6;]
[42] 'FILE WRITE PROTECTED? ',AS[7;]
[43] 'INTER-RECORD GAP?    ',AS[8;]
[44] →0
[45] DSK:'DEVICE : FLOPPY DISK'
[46] 'UNIT BUSY?           ',AS[1;]
[47] 'TRACK ZERO?          ',AS[2;]
[48] 'NOT INDEX MARK?      ',AS[3;]
[49] 'POWER ON?            ',AS[4;]
[50] 'HEAD DOWN?           ',AS[5;]
[51] 'MOTOR ON?            ',AS[6;]
[52] 'UNIT ERROR?          ',AS[7;]
[53] 'FILE PROTECTED?     ',AS[8;]
[54] →0

```

▽

▽TΔ TRC ΔNM;QΔ;IΔ;XΔ;LND;AΔ

```

[1]  @ TΔ TRC NMA          APR 15/77
[2]  @TΔ IS VECTOR OF LINE NUMBERS TO BE TRACED
[3]  @ΔNM IS FUNCTION NAME TO BE EXECUTED AND TRACED
[4]  @RESTRICTIONS:
[5]  @ 1. TRACED FUNCTION MUST BE NILADIC
[6]  @ 2. USER MUST INSURE NO CONFLICTS EXIST BETWEEN LOCALS
[7]  @ AND LABELS IN TRC AND TRACED FUNCTION
[8]  @ 3. EACH TRACED LINE MUST HAVE A RESULT.
[9]  @ 4. SUBFUNCTIONS ARE NOT TRACED.

```

```

[10]  @BUILD LABEL TABLE
[11]  XΔ←''ρρAΔ←1 0↓(□CR ΔNM) [; ; 3]
[12]  AΔ←AΔ, '←', ⌈((~□IO)+ιXΔ)° .+, 0
[13]  XΔ←1↑ρAΔ←(' '≠, AΔ [; IΔ←□IO]) ≠AΔ
[14]  AΔ[(QΔ←': '=AΔ [; 1+□IO]) / ιXΔ; 1+□IO] ←' '
[15]  AΔ[(QΔv←': '=AΔ [; 2+□IO]) / ιXΔ; □IO+2] ←' '
[16]  @GENERATE GLOBAL VARIABLES FROM LABELS
[17]  LΔ1:→LΔ1°IΔ←IΔ+1°⊙AΔ [IΔ; ] °→GΔ [ ιIΔ>XΔ-~□IO
[18]  @PRINT FUNCTION HEADER LINE
[19]  GΔ:□←(ΔNM □ZZ [IΔ←□IO] FND) °□OU □YA 66
[20]  @EXECUTE AND TRACE FUNCTION U
[21]  LΔ:→(1=QΔ←1+ρLND←5↓LND°⊙((IΔ-□IO)∈TΔ) / '□←LND' °LND←ΔNM □ZZ [IΔ←IΔ+1] FND) / ENΔ
[22]  →BΔ [ ιQΔ≠XΔ←(~□IO)+LNDι '→'
[23]  LND←XΔ↓LND°→EΔ [ ιQΔ=XΔ←(~□IO)+LNDι ': '
[24]  EΔ:→LΔ°⊙(2×~(IΔ-□IO)∈TΔ) ↓ '□←⊙LND'
[25]  @COME HERE TO EXECUTE BRANCH STATEMENTS
[26]  BΔ:°⊙((IΔ-□IO)∈TΔ) / '□←''→'', ⌈LND' °LND←⊙XΔ↓LND
[27]  →LΔ [ ι□IO≤IΔ←(' 'ρLND) --□IO°→LΔ [ ιθ=ρ, LND
[28]  @EXPUNGE LABEL TABLE
[29]  ENΔ:□EX AΔ [; ; 3]

```

▽

NAMES IN GROUP 4:

GPA WRA WRT

GPA [vector of type char of length 28; element size 1 byte(s)]  
 TEXT 700 FILE CREAT ROUTINES

WRA [3 by 1 by 96 array of type char; element size 3 byte(s)]

WRT [3 by 1 by 91 array of type char; element size 3 byte(s)]

NAMES IN GROUP 77:

I_	FMT	ADD	CLE	CHE	DO	DT9	DT8	BRK	CHK	SCA	FC
RM	DAT	TIM	BAU	SET	YYI	YYO					

▽R←I\_ X

[1] R←X/ιρX

▽

▽R←FMT X; T1; H; W

[1] W←(ρX) [2] ×T1←|80÷(ρX) [2]

[2] H←[(ρX) [1] ÷T1

[3] R←(H, W) ρX, [1] (((T1×H) - (ρX) [1]), (ρX) [2]) ρ' '

▽

∇ADD

- [1]    □XA □FN
  - [2]    □XA □VA
- ∇

∇CLE

- [1]    □BO 12
- ∇

∇R←DAT CHE TIM;I;J;K;FCN;SCV;T2;T3

- [1]    R←0ρJ←1
  - [2]    SCV←'(6)=AR103 '
  - [3]    FCN←RM □ZZ SCA
  - [4]    LP2:→(J>(ρTIM)[1])/0
  - [5]    SCV←'(12)(6)≤',DAT[ι6], '(6)≥',DAT[6+ι6]
  - [6]    SCV←SCV,(,(7 3ρ1),ϑ2 7ρTIM[J;ι7]='1')/35ρ'(1)=1'
  - [7]    SCV←SCV,'(4)≤',TIM[J;11+ι4], '(4)≥',TIM[J;7+ι4]
  - [8]    →(0=ρT2←FC □ZZ SCA)/L2
  - [9]    K←1
  - [10]   T3←DAT DT9 TIM[J;ι7]
  - [11]   LP3:→(K>ρT2)/L2
  - [12]   →(v/T3∈FC[T2[K];12+ι12]DT9,FC[T2[K];24+ι7])/L3
  - [13]   →LP3,K←K+1
  - [14]   L2:→LP2,J←J+1
  - [15]   L3:R←FC[T2[K];]
- ∇

∇DO

- [1]    CLE
  - [2]    □←□CR'CHE'
- ∇

∇R←L DT9 X;T1;T2

- [1]    T2←T1+ι(DT8 6ιL)-T1←<sup>-</sup>1+DT8 6ιL
  - [2]    R←((1+7|T2)∈I\_ϕ(13ρ1 0)\X)/T2
- ∇

∇R←DT8 X

- [1]    X←ϕ1 1 0 1 1 0 1 1/X
  - [2]    N←[<sup>-</sup>30+0 30.56ιX[2 3]
  - [3]    N←N-(2-T)×N>59+T←0=4|X[1]+1900
  - [4]    R←([0.125+3365.25×X[1]-1)+N
- ∇

BRK    [3 by 1 by 36 array of type char; element size 3 byte(s)]

CHK    [3 by 1 by 42 array of type char; element size 3 byte(s)]

SCA    [3 by 1 by 99 array of type char; element size 3 byte(s)]

FC [95 by 2 array of type char; element size 1 byte(s)]  
1AR103 7701037701071010100 9001059  
1AR103 7701037701070101000 300 359

RM [6 by 200 array of type char; element size 1 byte(s)]

AR103





DAT [vector of type char of length 12; element size 1 byte(s)]  
770106770106

TIM [15 by 1 array of type char; element size 1 byte(s)]  
0001000 315 330

VSETUP;A

- [1] @ SETUP
- [2] @SET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
- [3] @AND PRINT OUTPUT ON A TERMINAL
- [4] @NOTE: PROMPT SWITCH MUST BE ON.
- [5] -OK[10≠1↑]OU A←]YA 193,255-32



```

[6] 'NO EIA INTERFACE CONNECTED'
[7] →
[8] OK:◦'O'□YW'YYO'◦'I'□YW'YYI'◦□IN A
[9] 'FULL DUPLEX DATA RATE AND EIA'
[10] 'MUST BE PRESSED IN.'

```

▽

▽SETUP;A

```

[1] Ⓜ SETUP
[2] ⓂSET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
[3] ⓂAND PRINT OUTPUT ON A TERMINAL
[4] ⓂNOTE: PROMPT SWITCH MUST BE ON.
[5] →OK[10≠1↑□OU A←□YA 193,255-32
[6] 'NO EIA INTERFACE CONNECTED'
[7] →
[8] OK:◦'O'□YW'YYO'◦'I'□YW'YYI'◦□IN A
[9] 'FULL DUPLEX DATA RATE AND EIA'
[10] 'MUST BE PRESSED IN.'

```

▽

YYI [34 by 1 array of type char; element size 8 byte(s)]

```

A100000027B04614 50820600000D0A08 00000000000A0080 8000070000846C6C
6C896C6C6C836C6C 6C6C826C6C6C6C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C276429
2A2B2C2D2E2F3058 574B342842000102 0304050607080956 5551355C43505E47
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 6C6C6C3631520B0C
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6A6C3784303132
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778
797A484C202E2223 2425262728295F82 822D3D5E7E508244 534D824F5451822F
3F825955424E4549 2C52828282403C60 82823B3A2B2A4A82 4B3E474157435658
5A21828282827F7C 8282000000000000

```

YYO [18 by 1 array of type char; element size 8 byte(s)]

```

4100000027B04614 50820600000D0A08 00000000000A0080 8000070000303132
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778
797A484C202E2223 2425262728295F82 822D3D5E7E508244 534D824F5451822F
3F825955424E4549 2C52828282403C60 82823B3A2B2A4A82 4B3E474157435658
5A21828282827F7C 8282000000000000

```

NAMES IN GROUP 201:

```

AXI BIG BOX CEN DOW EQU GPΔ HLI NPG PAG PFT PIT
PLO PLT POS PRT PΔ ROL TIT UP VLI WID

```

▽0 AXIS L

```

[1] Ⓜ 0 AXIS L APR 15/77 TS
[2] Ⓜ0 IS ORIGIN, L IS X AND Y AXIS LENGTHS Y
[3] (0-.5 0×1↑L)HLI 1↑L
[4] (0-0 .5×-1↑L)VLI -1↑L

```

▽

BIG [1 by 59 array of type char; element size 3 byte(s)]

2423C4  
2368C0  
0B3D46  
DB0A16  
060E00  
46840A  
0950BB  
0B46AD  
00069D  
2DFA15  
15153D  
46AD07  
1D3D46  
C8003C  
1148AC  
0B46DB  
0AD006  
605135  
153D11  
333525  
35CF25  
F92515  
3DEBF4  
3D46FF  
09C814  
0125C1  
CF7077  
23F825  
2E1836  
00C12D  
3DCF46  
A4001D  
1D1DEF  
250640  
02B1E0  
CFC41A  
E0409C  
23B068  
A523F9  
449E23  
3E27C3  
2DA844  
8E23C0  
357059  
230640  
02A7B5  
E850B4  
230E27  
066C2D  
253515  
F93D25  
447E23  
111207  
027423  
922396

239A23  
A223A7  
23B023  
BEA300

∇S BOX C;H;V;I0

- [1]    Ⓜ       S BOX C                           MAY 04/77 NT
- [2]    ⓂDRAW A BOX WHERE S IS START POINT - HOR. AND VER. DISTANCE T
- [3]    ⓂFROM CURRENT LOCATION TO LOWER LEFT CORNER IN INCHES.
- [4]    ⓂC IS WIDTH, HEIGHT OF BOX IN INCHES.
- [5]    POS S◦I0←1[I0←I0
- [6]    V[''ρρV;]←0◦V←(4+8×11+[12×1↑C)◦.×0 1
- [7]    H[''ρρH;]←0◦H←(2+6×11+[20×1↑C)◦.×1 0
- [8]    POS 1 1×C◦'-'PΔ H◦POS 0 1×C◦'-'PΔ H◦'|'PΔ V
- [9]    I0←I0◦POS -S+1 0×C◦'|'PΔ V

∇

∇R←L CENTRE X;N

- [1]    Ⓜ       R←L CENTRE X                   MAY 04/76 L
- [2]    ⓂSUBFUNCTION TO PLOT
- [3]    R←N;X;N←((ρρX)↑(1((L×(1 2=ρρX)/10 6)-[ρX)÷2),1)ρ' '

∇

∇DOWN NΔ;N

- [1]    Ⓜ       DOWN NΔ                       MAY 04/77 L
- [2]    ⓂROLL PAPER BACK NΔ LINES (OR TOP OF FORM) AND ADJUST PC
- [3]    ◦OU(1↑OU10),136+1↑N◦BO 1↑N←32 256T16×NΔ←NΔ[(PC10)[1+I0]
- [4]    ◦PC(PC10)-0,NΔ

∇

∇ΔR←EQU;ΔI

- [1]    Ⓜ       ΔR←EQU
- [2]    ⓂEVALUATE EQUATION FOR PLOTTING
- [3]    ⓂRESULT ΔR IS FORMATTED TO BE THE ARGUMENT FOR PLOT.
- [4]    ΔX←9↓'EQUATION: '
- [5]    ΔR←29↓'DEFINE INDEPENDENT VARIABLE: '
- [6]    ΔR←(ΔIρΔR),(ΔI←(ρΔR),1)ρΔX

∇

GPA [vector of type char of length 32; element size 1 byte(s)]  
MCP-132 PRINTING/PLOTTING/DRAWING

∇S HLINE L;V;I0

- [1]    Ⓜ       S HLINE L                       MAY 04/77
- [2]    ⓂDRAW HORIZONTAL LINE OF LENGTH L STARTING AT POSTION S
- [3]    ⓂS IS THE X AND Y DISPLACEMENT FROM THE CURRENT LOCATION.
- [4]    POS S←S+0 .06◦I0←1[I0←I0
- [5]    V[''ρρV;]←0◦V←(4+8×11+[15×L)◦.×1 0
- [6]    I0←I0◦POS -S◦'\_'PΔ V

∇

∇NPG

- [1]    Ⓢ       NPG                            APR 30/76
- [2]    ⓈFORCE NEW PAGE ON PRINTER. NOTE PAGEING MUST BE ON.
- [3]    □←((0|(1↑□Y0[11]6)-1↓□PC10),0)ρ''

∇

∇ZΔ←PAGE MΔ

- [1]    Ⓢ       ZΔ←PAGE MΔ                    APR 6/76
- [2]    ⓈSET PAGEING TO PRINT 1↑MΔ LINES ON
- [3]    ⓈA PAGE WHICH IS 1↑MΔ LINES LONG
- [4]    ⓈRESULT (ZΔ) IS THE PREVIOUS SETTING
- [5]    →(≤/MΔ)/L8○→(0=ρ,MΔ)/L8
- [6]    'RANGE ERROR'
- [7]    →
- [8]    L8:(ϕ-ϕMΔ),(ρ,MΔ)↓ZΔ←□Y0[11]6□Y0[11]6
- [9]    ZΔ←ϕ+ϕ2↑ZΔ○□PC 0 0

∇

1∇PFT X

- [40]   Ⓢ       PFT                            APR 12/77
- [2]    ⓈPRINT FOOTING X, FORCE NEW PAGE ON PRINTER. NOTE PAGEING MUST BE ON.
- [3]    □←((0|(1↑□Y0[11]6)-(1+(2=ρρX)×1+1↑ρX)+1↓□PC10),0)ρ''
- [4]    □←X

∇

∇R←PITCH X;Y

- [1]    Ⓢ       R←PITCH X
- [2]    ⓈCHANGE NUMBER OF CHARACTERS PER INCH TO X (1≤X≤60)
- [3]    ⓈRESULT R IS THE PREVIOUS SETTING
- [4]    ⓈPITCH REMAINS UNCHANGED IF X ISEMPY.
- [5]    →((1≤X)∧X≤60)/L8○→(0=ρ,X)/L8
- [6]    'RANGE ERROR'
- [7]    →
- [8]    L8:R←120÷(Y←□Y0[11]0)[2+11]
- [9]    Y[2+11]←X+2|X←[120÷X○→(0=ρ,X)/0
- [10]   Y □Y0[11]0

∇

∇PLOT W;C;S;TX;TY

- [1]    Ⓢ       PLOT W
- [2]    ⓈPLOT W ON THE MCP-132. W IS AN N BY 2
- [3]    ⓈARRAY OF CO-ORDINATES. PLOT SCALES THESE POINTS
- [4]    ⓈTO CORRESPOND TO THE WIDTH AND HEIGHT SPECIFIED.
- [5]    C←18↓19□'PLOT CHARACTER(S):○'
- [6]    S←22↓□'WIDTH,HEIGHT (INCHES): '
- [7]    TX←14↓□'X AXIS TITLE: '
- [8]    TY←((ρTY),1)ρTY←14↓□'Y AXIS TITLE: '
- [9]    W←W-(ρW)ρ|≠W←W+W←[W×(ρW)ρS×60 48÷(↑≠W)-[≠W
- [10]   POS .2 0○□←(1↓S)CENTRE TY○□OU 1
- [11]   0 0 HLINE 1↑S○0 0 VLINE 1↓S



6B6C 6D6E 6F70 7172  
 7374 7576 7778 797A  
 484C 202E 4023 2425  
 5E26 2A28 2900 822D  
 5F3D 2B50 8444 534D  
 864F 5451 882F 3F8A  
 5955 424E 4549 2C52  
 8C8E 905B 3C5D 9294  
 3B27 3A22 4A96 4B3E  
 4741 5743 5658 5A21  
 989A 9C9E 3EB0 A028  
 5429 5450 4F2E 4B2F  
 5F3F 5F4F 4D4F 5F4F  
 3F48 4D47 4D43 4A42  
 4A2C 5F4C 2B4C 4B4E  
 4AC3 12D8 4633 2724

∇POSITION S

- [1] @ POSITION S MAY 04/76
- [2] @POSITION THE CARRIAGE ON THE MCP-132 TO LOCATION S E
- [3] @S IS THE X AND Y COORDINATES IN INCHES Y
- [4] @POSITIVE DIRECTIONS ARE ↑ AND →
- [5] ' 'PΔ[120 96×S

∇

∇PRT X;T;A

- [1] @ PRT X
- [2] @PRINT X ON MCP-132 WITHOUT DISTROYING EIA TABLES'
- [3] °'0'□YW'T'°□OU 1↑A°□←X°□OU □YA 66°'0'□YXι0°'0'□YR'T'°A←□OUι0 A

∇

∇C PΔ A

- [1] @ C PΔ A MAY 01/76
- [2] @SUBFUNCTION TO CALL PLOTTER PLT
- [3] A □ZZ[C]PLT

∇

∇R←ROLL X;Y

- [1] @ R←ROLL X
- [2] @CHANGE NUMBER OF LINES PER INCH TO X ( $1 \leq X \leq 48$ )
- [3] @RESULT R IS THE PREVIOUS SETTING
- [4] @ROLL IS UNCHANGED IF X IS EMPTY.
- [5] →(( $1 \leq X$ ) ∧  $X \leq 48$ )/L8°→(0=ρ,X)/L8
- [6] 'RANGE ERROR'
- [7] →
- [8] L8:R←96÷(Y←□Y0[ι1]0)[3+ι1]
- [9] Y □Y0[ι1]0°Y[3+ι1]←[1↑96÷X,R

∇

∇S TITLE X;P;R;HEI;CPI;Y

```

[1]  @      S TITLE X          MAY 04/77
[2]  @X IS ALPHA VECTOR TO BE PRINTED
[3]  @S IS THE X AND Y DISPLACEMENT FROM THE CURRENT LOCATION
[4]  @CHARACTER HEIGHT IS SET BY HEI AND
[5]  @CHARACTERS PER INCH IS SET BY CPI IN LINE 6
[6]  ° 'DEFAULT SETTING IS: ' °HEI←.25°CPI←5
[7]  POS S
[8]  P←PITCH [6×CPI°R←ROLL 7×÷HEI
[9]  °□PC Y°□←(X □ZZ['.' ]BIG)°Y←□PC10
[10] °PITCH P°' 'PΔ[0 96×7÷ROLL R
[11] POS -S

```

▽

▽UP NΔ

```

[1]  @      UP NΔ          MAY 04/77
[2]  @FEED PAPER UP NΔ LINES OR TO END OF PAGE
[3]  □←((NΔ[(1↑□Y0[11]6)-1+1↓□PC10],0)ρ''

```

▽

▽S VLINE L;V;I0

```

[1]  @      S VLINE L          MAY 04/77
[2]  @DRAW VERTICAL LINE OF LENGTH L STARTING AT POSTION S
[3]  @S IS THE X AND Y DISPLACEMENT FROM THE CURRENT LOCATION.
[4]  POS S°□I0←1[I0←□I0
[5]  V[''ρρV;]←0°V←(4+8×11+[12×L)°×0 1
[6]  □I0←I0°POS -S°'|'PΔ V

```

▽

▽R←WIDTH X;Y

```

[1]  @      R←WIDTH X
[2]  @CHANGE PRINT WIDTH TO X (30≤X≤132)
[3]  @IF 2=ρX CHANGE OVERFLOW CHARACTER
[4]  @IF 3=ρX CHANGE OVERFLOW CHAR AND INDENT'
[5]  @RESULT R IS THE PREVIOUS WIDTH D
[6]  @WIDTH IS UNCHANGED IF X IS EMPTY.
[7]  →L8[1(30≤1↑X)∧(1↑X)≤132°→(0=ρX)/L8
[8]  'RANGE ERROR'
[9]  →
[10] L8:R←(ρ,X)↑Y←□Y0[11]1
[11] (X,(ρ,X)↓Y)□Y0[11]1

```

▽

NAMES IN GROUP 202:

GPA LIS SET STA YYI

GPA [vector of type char of length 43; element size 1 byte(s)]  
 PMR-400 CARD READER SUPPORT - JUN 08/76:GMS

∇LIST;A

```
[1] @ LIST GMS:JUN 08/76
[2] @TEST FUNCTION TO READ CARDS
[3] @AND LIST THEM ON THE MCP-132
[4] →L1[131=1↑1↓IN10○OU YA 66
[5] →0×10=1↑IN10○SETUP
[6] L1:←A←''
[7] →(4>8|1↑IN10)/L1
[8] @PREVIOUS LINE CHECKS FOR END OF FILE
```

∇

∇SETUP;A;X;R

```
[1] @ SETUP GMS:JUN 04/76
[2] @SETUP INPUT TABLES FOR CARD READER
[3] →TOK[10≠A←YA 131
[4] 'NO CARD READER CONNECTED!'
[5] →0
[6] TOK:○IN 0○'I'YW'YYI'○IN A
[7] X←0 0 0 0
[8] X[1]←1○→CSP[1~'Y'∈'PROCESS MNEMONICS? : '
[9] CSP:X[1+1]←1○→COF[1~'Y'∈'SUPRESS TRAILING SPACES? : '
[10] COF:X[1+1]←X[1+1]+2○→(LC+1)[1~'Y'∈'STOP READER BETWEEN CARDS? : '
[11] →SSS○X[2+1]←80○→('M'=R)/LC+1○→(~(R←1↑26↓'PUNCHED OR MARKED CARDS?
: '∈'PM')/LC
[12] →((R=0)VR>80)/LC○R←R○→(~Λ/R∈'0123456789')/LC○R←28↓'HOW MANY COLUMNS PER
CARD? : '
[13] X[2+1]←R
[14] SSS:X [YI[1]0○IN A
```

∇

∇STATUS;X;S;AS

```
[1] @ STATUS X GMS:JUN 03/76
[2] @RETURN STATUS OF CARD READER
[3] ○IN S○X←IN YA 131○S←1↑IN10
[4] AS←8 3p'NO YES'[, (3×φS)○.+13]○S←(8p2)TX[3]
[5] →(0 131=X[2])/NO,RDR
[6] NO:'NO CARD READER ON THE SYSTEM'
[7] →0
[8] RDR:'DEVICE : PMR-400'
[9] 'READER RUNNING? ',AS[1;]
[10] 'STACKER FULL? ',AS[2;]
[11] 'HOPPER EMPTY? ',AS[3;]
[12] 'READ OVERRUN? ',AS[4;]
[13] 'READ ERROR? ',AS[5;]
[14] 'CARDS JAMMED? ',AS[6;]
[15] 'CARD NOT BEING READ? ',AS[7;]
[16] 'READ DATA AVAILABLE? ',AS[8;]
```

∇

YYI [68 by 1 array of type char; element size 8 byte(s)]

```
8380000000012800 0000000000000000 0000000000000000 00000000000000102
030405060708090A 0B0C0D0E0F101112 131415161718191A 1B1C1D1E1F202122
232425262728292A 2B2C2D2E2F303132 333435363738393A 3B3C3D3E3F404142
434445464748494A 4B4C4D4E4F505152 535455565758595A 5B5C5D5E5F606162
```



```

636465666768696A 6B6C6D0000000000 0000000000000000 0000000000000000
48249B252E183600 C724F03C10480118 C20E03023C014803 18466A18C70E023C
8348031846922506 2B2DCDC6442F18C2 3C6D60DB243C762B 3C7568EE24440118
2727272727272727 270C0F1113182727 5B0B161A120B3508 270D0B1C0E271C0F
0B0E0F1C270E1C13 200F1C5B6E272727 2727272727272727 2727272727272727
2727272727272727 2727272727272727 6E00004692250611 2DC3182DC7D03C6E
2B467218D007F43D 46922506112DA855 473D0E0146AE1824 02680A2506025506
0455463002452C40 2471680A253C0148 8D25060855463002 452C40C82430488D
25C13C41481D250E 0246AE18D8354679 25488D25F8151948 36253E6E0E0146AE
1824026851250602 55C724016872250E 0246AE18D8469225 0611832D06271D19
686F25BF68662515 3E6E35E61E0044DB 2416007D7D11688D 254524F0687B2524
7F0B47B8070E0244 03182E20361DC715 EFF0076D247B2483 24DC24F124022513
25182527252D2537 253A2540254C2555 255E2569256D2577 257F2585A5480A3A

```

NAMES IN GROUP 210:

COM GPA HOW SET SIM YCI YCO YEI YEO

▽COMMENTS

- [1] @ COMMENTS APR 14/77
- [2] @DATEL TERMINALS USE CORRESPONDENCE CODE
- [3] @IBM 3767 GENERALLY ARE EBCDIC
- [4] @IBM 2741 TERMINALS ARE EITHER CORR. OR EBCDIC.
- [5] @EXECUTE THE FUNCTION SETUP 'X' TO POINT [ ]IN AND [ ]OUT
- [6] @TO A 2741 TYPE DEVICE. (X←C FOR CORRESPONDENCE, X←E FOR EBCDIC)
- [7] @THE FUNCTION 'BAUD' IN GROUP 0 WILL CHANGE
- [8] @TRANSFER RATE IF A SPEED OTHER THAN
- [9] @134.5 BAUD IS REQUIRED

▽

GPA [vector of type char of length 35; element size 1 byte(s)]

MCM/700 TO IBM 2741, 3767 AND DATEL

▽HOWTO

- [1] [ ]←' HOW TO ESTABLISH COMMUNICATIONS TO A 2741 TYPE DEVICE.'
- [2] [ ]←' APRIL 14/77' '
- [3] [ ]←'1. CONNECT OMNIPOINT CABLE TO SC1-1200 AND DISCONNECT ACOUSTIC COUPLER IF PRESENT.'
- [4] [ ]←' 2. CONNECT SMALL BLACK BOX TO SIDE TERMINAL AND CONNECT 2741 TO SMALL BOX.' LL
- [5] [ ]←' 3. TURN POWER ON TO THE 2741.'
- [6] [ ]←' 4. PLACE DATA TERMINAL READY (DTR) SWITCH IN X POSITION.'
- [7] [ ]←' 5. EXECUTE [ ]OU [ ]YA 225. RESULT SHOULD BE AD 225 18.' '
- [8] [ ]←' 6. IF THE STATUS IS NOT 18, MOVE DTR SWITCH TO 1 POSITION. REPEAT STEP 5.'
- [9] [ ]←' 7. IF YOUR 2741 IS CORRESPONDENCE CODE, EXECUTE SETUP 'C'.'
- [10] [ ]←' IF IT IS EBCDIC, EXECUTE SETUP 'E'.'
- [11] [ ]←' 8. IF YOUR 2741 HAS REVERSE BREAK AND RUNS AT 134.5 BAUD, YOU ARE NOW'
- [12] [ ]←' READY TO OUTPUT DATA USING QUAD OUTPUT [ ]←XXX.'
- [13] [ ]←' 9. IF YOUR TERMINAL RUNS AT SAY 300 BAUD, EXECUTE BAUD 300.'
- [14] [ ]←'10. IF YOUR TERMIAL DOES NOT HAVE REVERSE BREAK, PRESS RETURN KEY ON 2741,'
- [15] [ ]←' THEN EXECUTE [ ]BO 52. NOW THE 2741 IS READY TO ACCEPT OUTPUT.'

▽

▽SETUP T

```
[1]  @      SETUP T          APR 14/77
[2]  @SET UP COMMUNICATIONS INTERFACE FOR 2741 TYPE DEVICES
[3]  @USING TABLES YCI, YCO FOR CORRESPONDANCE
[4]  @AND YEI YEO FOR EBCDIC ACCORDING TO T (CE).
[5]  @NOTE: PROMPT SWITCH MUST BE ON
[6]  -SUO[10≠1↑□IN □YA('I'□YW 'Y',T,'I'),255-64
[7]  'NO SUCH INPUT DEVICE'
[8]  →
[9]  SUO:→END[10≠1↑□OU □YA('O'□YW 'Y',T,'O'),255-128+32
[10] 'NO SUCH OUTPUT DEVICE'
[11] →
[12] END:◦□DL .1◦□BO 60◦'UNLOCK KEYBOARD'
[13] ◦□DL .1◦□OUφ2↑4,□OU10◦'LOCK WITH REVERSE BREAK'
[14] ◦□BO 52◦'ENABLE TRANSMIT'
```

▽

▽SIM ;X;Y

```
[1]  @      SIMULATE        MAY 03/76
[2]  @USE THE 2741 AS INPUT AND OUTPUT DEVICE FOR MCM/700
[3]  Y←X←6↓□' '
[4]  →2◦□←Y◦→2[1'←'∈X
```

▽

YCI [34 by 1 array of type char; element size 8 byte(s)]

```
A1000000274101B9 78820600082D1F1D 3D003D30032E3D1F 1C3C80348027501E
140419164205560F 1A6C6C6C6C022818 36246C6C6C061315 1B88836C87011722
11001D1223071C0E 556C826C6C03201F 1009210C34080B0D 4B89846C6C27523F
592B3E26432C5849 386C6C6C6C295C48 37636C6C6C2D4A5B 4088836C87643C62
5D313B25452E4C3A 576C826C6C2A6146 0A305F47352F5E60 5189846C6C242010
3004081828383473 39363A2A0A332326 19031A062112050B 1B29250232313522
2714664600115070 4448586878746482 82377713534B826A 65618245425B8207
4782677276524A59 3B69828282017B41 82822B096B494382 5A516379757A7162
54608282827F82 8282000000000000
```

YCO [18 by 1 array of type char; element size 8 byte(s)]

```
41000000274101B9 78820600082D1F1D 3D003D30032E3D1F 1C3C803480242010
3004081828383473 39363A2A0A332326 19031A062112050B 1B29250232313522
2714664600115070 4448586878746482 82377713534B826A 65618245425B8207
4782677276524A59 3B69828282017B41 82822B096B494382 5A516379757A7162
54608282827F82 8282000000000000
```

YEI [34 by 1 array of type char; element size 8 byte(s)]

```
A1000000274101B9 78820600082D1F1D 3D003D30032E3D1F 1C3C803480273450
36081B231204171F 0E6C6C6C6C02151D 0C006C6C6C061921 1088836C87011442
0B091C2413051820 0F6C826C6C03161E 0D56554B28071A22 1189846C6C273552
372F4045252B3C46 3A6C6C6C6C295B3B 47316C6C6C2D3E5F 0A88836C87645943
5E304C634A2C4861 496C826C6C2A263F 605857515C2E3862 5D89846C6C142010
300828183804245B 2313330B2B1B3B07 2721113109291939 052512320A2A1A3A
0626477100375070 4868587844645482 820141034379824B 5249825972458222
6282464A53696B67 3665828282027642 8282353475746182 51777B635A736A7A
66608282827F82 8282000000000000
```

YEO [18 by 1 array of type char; element size 8 byte(s)]  
41000000274101B9 78820600082D1F1D 3D003D30032E3D1F 1C3C803480142010  
300828183804245B 2313330B2B1B3B07 2721113109291939 052512320A2A1A3A  
0626477100375070 4868587844645482 820141034379824B 5249825972458222  
6282464A53696B67 3665828282027642 8282353475746182 51777B635A736A7A  
6660828282827F82 8282000000000000

NAMES IN GROUP 212:  
COM GPA SET SIM

▽COM

- [1] @ COMMENTS
- [2] @THE MCM/700 COMMUNICATIONS SUBSYSTEM DEFAULTS TO
- [3] @TEKTRONICS 4013 TERMINAL SUPPORT. THE SETUP FUNCTION IN
- [4] @THIS CASE JUST SELECTS THE DEVICE, THE COMMUNICATIONS
- [5] @TABLES ARE LOADED FROM READ ONLY MEMORY.

▽

GPA [vector of type char of length 27; element size 1 byte(s)]  
MCM/700 TO TEKTRONICS 4013.

▽SETUP;A

- [1] @ SETUP JUNE 01/76
- [2] @SET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
- [3] @AND PRINT OUTPUT ON A TERMINAL
- [4] @NOTE: PROMPT SWITCH MUST BE ON.
- [5] →OK[10≠1↑□OU A←□YA 193,255-32
- [6] 'NO EIA INTERFACE CONNECTED'
- [7] →
- [8] OK:○□IN A

▽

▽SIM ;X;Y

- [1] @ SIM JUNE 01/76
- [2] @USE THE TEK-4013 AS INPUT AND OUTPUT DEVICE FOR MCM/700
- [3] Y←⊥X←6↓□' '
- [4] →2○□←Y○→2[1'←'∈X

▽

NAMES IN GROUP 214:  
GPA SET SIM YYI YYO

GPA [vector of type char of length 14; element size 1 byte(s)]  
CDI MODEL 1030

∇SETUP;A

- [1]   Ⓜ     SETUP J
- [2]   ⓂSET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
- [3]   ⓂAND PRINT OUTPUT ON A TERMINAL
- [4]   ⓂNOTE:  PROMPT SWITCH MUST BE ON.
- [5]   →OK[10≠1↑□OU A←□YA 193,255-32
- [6]   'NO EIA INTERFACE CONNECTED'
- [7]   →
- [8]   OK:◦'O'□YW'YYO'◦'I'□YW'YYI'◦□IN A

∇

∇SIM ;X;Y

- [1]   Ⓜ     SIM                               MAY 03/76
- [2]   ⓂUSE THE CDI-1030 AS INPUT AND OUTPUT DEVICE FOR MCM/700
- [3]   Y←ⓂX←6↓□'                       '
- [4]   →2◦□←Y◦→2[1'←'∈X

∇

YYI   [34 by 1 array of type char; element size 8 byte(s)]  
A100000027B04652 48820600080D0A08 00000000000A0080 8000070000846C6C  
6C896C6C6C836C6C 6C6C826C6C6C6C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C276429  
2A2B2C2D2E2F3058 574B342842000102 0304050607080956 5551355C43505E47  
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 6C6C6C3631520B0C  
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6A6C3784303132  
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E2223 2425262728295F82 822D3D5E7E508244 534D824F5451822F  
3F825955424E4549 2C52828282403C60 82823B3A2B2A4A82 4B3E474157435658  
5A21828282827F7C 8282000000000000

YYO   [18 by 1 array of type char; element size 8 byte(s)]  
4100000027B04652 48820600080A0D08 00000000000A0080 8000070000303132  
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E2223 2425262728295F82 822D3D5E7E508244 534D824F5451822F  
3F825955424E4549 2C52828282403C60 82823B3A2B2A4A82 4B3E474157435658  
5A21828282827F7C 8282000000000000

NAMES IN GROUP 215:  
GPA SET SIM YYI YYO

GPA   [vector of type char of length 19; element size 1 byte(s)]  
TELETYPE (MODEL 33)

∇SETUP;A

- [1]   Ⓜ     SETUP J
- [2]   ⓂSET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
- [3]   ⓂAND PRINT OUTPUT ON A TERMINAL
- [4]   ⓂNOTE:  PROMPT SWITCH MUST BE ON.
- [5]   →OK[10≠1↑□OU A←□YA 193,255-32
- [6]   'NO EIA INTERFACE CONNECTED'
- [7]   →



∇X CURSOR Y

- [1] @ X CURSOR Y MAY 04/76
- [2] @POSITION THE CURSOR TO LINE X, COLUMN Y
- [3] □BO X◦(1↑Y) CPS 1↓Y←12 5+24 7×(¯1+Y)

∇

GPA [vector of type char of length 26; element size 1 byte(s)]  
VOLKER CRAIG (MODEL VC103)

∇HOME

- [1] @ HOME MAY 04/76
- [2] @MOVE THE CURSOR TO THE HOME POSITION.
- [3] □BO 11

∇

∇SETUP;A

- [1] @ SETUP J
- [2] @SET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
- [3] @AND PRINT OUTPUT ON A TERMINAL
- [4] @NOTE: PROMPT SWITCH MUST BE ON.
- [5] →OK[10≠1↑□OU A←□YA 193,255-32
- [6] 'NO EIA INTERFACE CONNECTED'
- [7] →
- [8] OK:◦'O'□YW'YYO'◦'I'□YW'YYI'◦□IN A

∇

∇SIM ;X;Y

- [1] @ SIM MAY 03/76'
- [2] @USE THE TERMINAL AS INPUT AND OUTPUT DEVICE FOR MCM/700
- [3] Y←↓X←6↓□' '
- [4] →2◦□←Y◦→2[1'←'∈X

∇

YYI [34 by 1 array of type char; element size 8 byte(s)]

A100000027B04609 50800600000D0A08 00000000000A0080 8000070000846C6C  
6C896C6C6C836C6C 6C6C826C6C6C6C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C276429  
2A2B2C2D2E2F3058 574B342842000102 0304050607080956 5551355C43505E47  
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 6C6C6C3631520B0C  
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6A6C3784303132  
3334353637383946 61626364656666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E2223 2425262728295F81 812D3D5E7E508144 534D814F5451812F  
3F815955424E4549 2C52818181403C60 81813B3A2B2A4A81 4B3E474157435658  
5A21818181817F7C 8181000000000000

YY0 [18 by 1 array of type char; element size 8 byte(s)]

4100000027B04609 50800600000D0A08 00000000000A0080 8000070000303132  
3334353637383946 61626364656666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E2223 2425262728295F81 812D3D5E7E508144 534D814F5451812F  
3F815955424E4549 2C52818181403C60 81813B3A2B2A4A81 4B3E474157435658  
5A21818181817F7C 8181000000000000

NAMES IN GROUP 217:

A BEL CH CLE CUR CV C EOL EOS GPΔ HOM 070  
ORD PRI RET SET V YYI YYO

A [39 by 23 array of type char; element size 1 byte(s)]  
MCM/700 CONFIGURATOR

MCM/700 SYSTEM: CONFIGURATION  
MEMORY REQUIRED : K BYTES  
TAPES REQUIRED :  
TEXT/700 SYSTEM :

PERIPHERALS: NUMBER  
PRINTER MCP-132 :  
CRT VDU-24 :  
DISK DDS-500 :  
EIA SCI-1200 :

SUPPLIES: NUMBER  
CASSETTE TAPES :  
FLOPPY CARTRIGES:  
USERS GUIDE :  
TEXT/700 MANUALS:

SOFTWARE PACKAGES NUMBER  
FINANCE :  
MATHEMATICS :  
STATISTICS :  
COMPLEX MATH :

▽BELL

- [1] @ BELL MAY 03/76
- [2] @RING THE BELL(KEYBOARD CONNECTED)
- [3] □BO 7

▽

▽CH X;I

- [1] @ CH X MAY 03/76 IS
- [2] @MOVE CURSOR IN HORIZONTAL DIRECTION
- [3] @POSITIVE DIRECTION IS RIGHT
- [4] X←[|X◦I←28 8[(11)+X<0]
- [5] □BO I
- [6] →(0≠X←X-1)/2

▽

▽CLEAR

- [1] @ CLEAR MAY 03/76
- [2] @CLEAR THE SCREEN
- [3] □BO 12

▽

∇CURSOR X

- [1]    Ⓜ    CURSOR X                    MAY 03/76
- [2]    ⓂMOVE CURSOR TO COLUMN 1↑X,LINE 1↓X.
- [3]    □BO (1↓X)-↑1Ⓜ□BO 32+(1↑X)-↑1Ⓜ□BO 30
- [4]    G

∇

∇CV X;I

- [1]    Ⓜ    CV X                        MAY 03/76
- [2]    ⓂMOVE CURSOR IN VERTICAL DIRECTION
- [3]    ⓂPOSITIVE DIRESTION IS UP
- [4]    X←[|XⓂI←10 31[(↑1)+0<X]
- [5]    □BO I
- [6]    →(0<X←X-1)/2

∇

C    [numeric vector of length 16; element size 1 byte(s)]  
3 4 5 8 9 10 11 14 15 16 17 20 21 22 23 100

∇EOL E

- [1]    Ⓜ    EOL                         MAY 03/76
- [2]    ⓂERASE FROM CURSOR TO END OF LINE
- [3]    □BO 29

∇

∇EOS

- [1]    Ⓜ    EOS                         MAY 03/76
- [2]    ⓂERASE SCREEN TO END OF PAGE
- [3]    □BO 11

∇

GPA   [vector of type char of length 22; element size 1 byte(s)]  
DATAMEDIA (MODEL 1520)

∇HOME

- [1]    Ⓜ    HOME                        MAY 03/76
- [2]    ⓂMOVE THE CURSOR TO THE HOME POSITION.
- [3]    □BO 25

∇

∇070

- [1]    '                    MCM/700 CONFIGURATOR 00
- [2]    ' MCM/700 SYSTEM:            CONFIGURATION
- [3]    '        MEMORY REQUIRED :            K BYTES
- [4]    '        TAPES REQUIRED :            :
- [5]    '        TEXT/700 SYSTEM :        :
- [6]    '
- [7]    ' PERIPHERALS:                NUMBER
- [8]    '        PRINTER MCP-132 :        :
- [9]    '        CRT VDU-24         :



```

[10] '      DISK DDS-500      :
[11] '      EIA SCI-1200     :
[12] '
[13] 'SUPPLIES:                NUMBER
[14] '      CASSETTE TAPES   :
[15] '      FLOPPY CARTRIGES:
[16] '      USERS GUIDE      :
[17] '      TEXT/700 MANUAL  :
[18] '
[19] 'SOFTWARE PACKAGES       NUMBER
[20] '      FINANCE          :
[21] '      MATHEMATICS      :
[22] '      STATISTICS       :
[23] '      COMPLEX MATH     :

```

▽

▽ORDER;ANS;I;ST;T

```

[1]  @      ORDER          MAY 03/76
[2]  @DEMONSTRATION PROGRAMME
[3]  □←A◦I←''ρ11+ST←T←0◦CLEAR
[4]  →AGN◦□←'PRICE      SUBTOTAL  TOTAL'◦CUR 52 2◦□←DATE◦CUR 60 1
[5]  ERR:◦EOL◦CUR 30,C[I]◦□DL 3◦□←'ERROR'
[6]  AGN:CUR 50,C[I]◦ANS←□''◦CUR 30,C[I]
[7]  →(~Λ/ANS∈'0123456789 ')/ERR◦→(0=ρANS)/TST
[8]  →(V[I;2]<ANS←_ANS)/ERR
[9]  →(~v/V[I;]=ANS)/ERR◦→(10≤V[I;2])/OK
[10] OK:ST←ST+_□←9 2 0_+/PRI[I;]×ANS,1
[11] TST:→(¬1=-/C[I+0 1])/NST
[12] ST←0×T←T+ST◦□←10 2 0_+ST◦CUR 60,C[I]
[13] →(¬1≠I-ρC)/NST
[14] □←10 2 0_+T◦CUR 70,C[I]
[15] NST:→((ρC)>I←I+1)/AGN

```

▽

PRI [2 by 15 numeric array; element size 2 byte(s)]

```

400 4600
1400 0
500 0
4500 0
2500 0
4000 0
1100 0
12 0
15 0
10 0
5 0
150 0
400 0
300 0
100 0

```

▽RETURN

- [1] Ⓜ RETURN MAY 03/76
- [2] ⓂRETURN CURSOR TO LEFT MARGIN
- [3] □BO 13

▽

▽SETUP;A

- [1] Ⓜ SETUP
- [2] ⓂSET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
- [3] ⓂAND PRINT OUTPUT ON A TERMINAL
- [4] ⓂNOTE: PROMPT SWITCH MUST BE ON.
- [5] →OK[10≠1↑□OU A←□YA 193,255-32
- [6] 'NO EIA INTERFACE CONNECTED'
- [7] →
- [8] OK:◦'O'□YW'YYO'◦'I'□YW'YYI'◦□IN A
- [9] 'FULL DUPLEX DATA RATE AND EIA'
- [10] 'MUST BE PRESSED IN.'

▽

V [2 by 15 numeric array; element size 2 byte(s)]

- 4 8
- 1 2
- 0 1
- 0 10
- 0 10
- 0 10
- 0 10
- 0 1000
- 0 1000
- 0 1000
- 0 1000
- 0 1000
- 0 1000
- 0 1000
- 0 1000
- 0 1000

YYI [34 by 1 array of type char; element size 8 byte(s)]

A100000027B04614 50820600000D0A08 00000000000A0080 8000070000846C6C  
6C896C6C6C836C6C 6C6C826C6C6C6C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C276429  
2A2B2C2D2E2F3058 574B342842000102 0304050607080956 5551355C43505E47  
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 6C6C6C3631520B0C  
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6A6C3784303132  
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E2223 2425262728295F82 822D3D5E7E508244 534D824F5451822F  
3F825955424E4549 2C52828282403C60 82823B3A2B2A4A82 4B3E474157435658  
5A21828282827F7C 8282000000000000

YYO [18 by 1 array of type char; element size 8 byte(s)]

4100000027B04614 50820600000D0A08 00000000000A0080 8000070000303132  
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E2223 2425262728295F82 822D3D5E7E508244 534D824F5451822F  
3F825955424E4549 2C52828282403C60 82823B3A2B2A4A82 4B3E474157435658  
5A21828282827F7C 8282000000000000

NAMES IN GROUP 220:  
COM GPA SET YYI YY0

▽COM

- [1] @ COMMENTS JUNE 01/76
- [2] @GROUP 240 CONTAINS FUNCTIONS TO TRANSFER DATA BETWEEN MCM/700'S.
- [3] @TO START THE SYSTEMS, EXECUTE THE FUNCTION SETUP
- [4] @ON THE MASTER COMPUTER AND RUN ON THE SLAVE COMPUTER.

▽

GPA [vector of type char of length 19; element size 1 byte(s)]  
MCM/700 TO MCM/700.

▽SETUP;A

- [1] @ SETUP JUNE 01/76
- [2] @SET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
- [3] @AND SEND OUTPUT TO ANOTHER MCM/700.
- [4] @NOTE: PROMPT SWITCH MUST BE OFF.
- [5] →OK[10≠1↑□OU A←□YA 1 31
- [6] 'NO EIA INTERFACE CONNECTED'
- [7] →
- [8] OK:◦□IN A◦'I'□YW'YYI'◦'O'□YW'YY0'

▽

YYI [34 by 1 array of type char; element size 8 byte(s)]

8100000003304652 84820600080D0A08 00000000000A0080 8000070000846C6C  
6C896C6C6C836C6C 6C6C826C6C6C6C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C276458  
2A2B2C2E5630312F 374B342842000102 0304050607080957 5551365C43295E47  
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 506C522D356C0B0C  
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6C6C6A84000000  
026900FF00200079 80B902FF96FD06F5 82FD82FD02FD82FD 027D00FF86FD00FD  
02FD00FD007D00FD 006900FF0040007D 0060007B8040007B 006900FF026D00F9  
00F900FF82FF0279 86B800FD80FF82FD 86FF80FD00FC007D A6FD02FF00FD00FD  
02FD00FD00FD007D 0000007900F90079

YY0 [18 by 1 array of type char; element size 8 byte(s)]

4100000003304652 84820600080D0A08 00000000000A0080 8000070000303132  
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E4023 24255E262A282982 822D5F3D2B508244 534D824F5451822F  
3F825955424E4549 2C528282825B3C5D 82823B273A224A82 4B3E474157435658  
5A21828282827F7E 8282000000000000

NAMES IN GROUP 221:  
GPA SIG TER

GPA [vector of type char of length 27; element size 1 byte(s)]  
COMSHARE SIGN-ON PROCEDURE.

VSIGNON;P;T

```
[1]  @      SIGNON                JULY 06/76
[2]  @SIGN ON PROCEDURE FOR COMSHARE
[3]  °SETUP'C' °°NC'XFER'
[4]  °°IN 1↑°OUi0°P←1°'ACOUNT:LOCK' °°IN 0
[5]  T °YI[i1]0°T[1+i1]←67°T←°YI[i1]0
[6]  WAIT:'PHONE 1-416-678-6900' °°PT←10
[7]  →WAIT[i2>4|°1↑°OUi0 N
[8]  XFER'*' °°DL 2
[9]  XFER(N←(P i ':' )-°IO)↑P
[10] XFER(N+1)↓P
[11] XFER P←''
[12] XFER'APL' °°PT←0
```

▽

VTERMINAL;L;L1;N;BC

```
[1]  @      TERMINAL                MAY 03/76
[2]  @MCM/700 OPERATES AS A TERMINAL TO HOST COMPUTER
[3]  @NOTE:TRANSMISSION IS LIMITED TO 128 CHARACTERS AT A TIME.
[4]  @TO EXIT FROM THIS FUNCTION TYPE ω RETURN
[5]  L←'          ' °BC←°Y 108
[6]  IN: °°IN 1↑°OUi0°L1←(ρL) ↓°L °°IN 0
[7]  L←XFER L1 °→('ω'=(1|ρL1)↑L1)/0
[8]  DLP:→((°1+ρL) ≤N←(L i BC)-°IO)/IN
[9]  N↑L
[10] →(0=N←((BC≠L←(1+N) ↓L) i1)-°IO)/DLP
[11] →DLP °L←N ↓L
```

▽

NAMES IN GROUP 222:

GPA SIG TER

GPA [vector of type char of length 29; element size 1 byte(s)]

I.P. SHARP SIGN-ON PROCEDURE.

VSIGNON;P

```
[1]  @      SIGNON                JULY 06/76
[2]  @SIGN ON PROCEDURE TO 360/APL WITH 3705 FRONT END PROCESSOR
[3]  @300 BAUD - CORRESPONDENCE
[4]  SETUP'C' °°NC'XFER'
[5]  P←13 ↓(14+i1) °'ACCOUNT:LOCK )          : ' °°IN 0
[6]  WAIT:'PHONE 1-416-360-1200' °°PT←10
[7]  →WAIT[i2>4|°1↑°IN 1↑°OUi0
[8]  XFER')' °°DL 1 °°BO 52 °°DL 1
[9]  P←XFER P
[10] P °°PT←0 F
```

▽

∇TERMINAL;L;L1;N;BC

```
[1]  @      TERMINAL          MAY 03/76
[2]  @MCM/700 OPERATES AS A TERMINAL TO HOST COMPUTER
[3]  @NOTE:TRANSMISSION IS LIMITED TO 128 CHARACTERS AT A TIME.
[4]  @TO EXIT FROM THIS FUNCTION TYPE ω RETURN
[5]  L←'      '°BC←Y 108
[6]  IN:°IN 1↑OUi0°L1←(ρL)↓L°IN 0
[7]  L←XFER L1°→('ω'=(1|ρL1)↑L1)/0
[8]  DLP:→((¯1+ρL)≤N←(LιBC)-IIO)/IN
[9]  N↑L
[10] →(0=N←((BC≠L←(1+N)↓L)ι1)-IIO)/DLP
[11] →DLP°L←N↓L
```

∇

NAMES IN GROUP 223:

A COM GPA SET SIG TER YAI YAO

A [4 by 11 numeric array; element size 2 byte(s)]

```
7 48 70 82
132 130 6 0
0 0 128 128
8 0 0 0
0 0 0 0
0 0 0 0
0 0 10 0
128 0 0 0
128 0 0 0
128 13 0 0
128 128 0 0
```

∇COMMENTS;Y

```
[1]  @      COMMENTS          JUNE 16/76
[2]  @THIS PROCEDURE IS FOR STSC 30 CPS ASCII HALF DUPLEX
[3]  @FOR A DIRECT LINE INTO STSC. TO ENTER STSC
[4]  @VIA TYMNET OR TELENET, OR AT A DIFFERENT SPEED, OR SIMULATING
[5]  @SELECTRIC, THIS PROCEDURE MUST BE CHANGED.
[6]  @      TO GENERATE ASCII TABLES YAI AND YAO EXECUTE
[7]  @THIS FUNCTION AFTER CONNECTING THE SCI1200 TO THE SYSTEM.
[8]  @SAVE THE VARIABLES YAI AND YAO ON TAPE.
[9]  °OU 1↑ IN YA 1 31
[10] °A YI[1]Y°A YO[1]Y←¯1+ι11°'A IS FROM GROUP 223'
[11] °¯2 108 YI[2]7 13
[12] °'I'YR'YAI'°'O'YR'YAO'
```

∇

GPA [vector of type char of length 29; element size 1 byte(s)]  
SCIENTIFIC SIGN-ON PROCEDURE.

∇SETUP T

```
[1]  @      SETUP T          JUNE 16/76
[2]  @SET UP COMMUNICATIONS INTERFACE
```

```

[3]  @USING TABLES YYI, YYO FOR CORRESPONDANCE
[4]  @YEI YEO FOR EBCDIC, AND YAI YAO FOR ASCII
[5]  @ACCORDING TO T (CEA).
[6]  @NOTE: PROMPT SWITCH MUST CORRESPOND TO TABLE SETTING
[7]  T←2 3ρ'Y',T,'IY',T,'O'◦□IN 0
[8]  →SUO[ι0≠1↑□IN □YA('I'□YW T[ι1;]),255-64
[9]  'NO SUCH INPUT DEVICE'
[10] →
[11]  SUO:→0×ι0≠1↑□OU □YA('O'□YW T[1+ι1;]),255-128+32
[12]  'NO SUCH OUTPUT DEVICE'
[13] →

```

▽

▽SIGNON;P;Q

```

[1]  @      SIGNON          JULY 06/76
[2]  @SCIENTIFIC TIME SHARING SIGN ON PROCEDURE
[3]  @FOR A DIRECT LINE, 300 BAUD, ASCII, HALF DUPLEX.
[4]  Q←□YI[ι1]0◦SETUP'A'◦□NC'XFER'
[5]  ◦□IN 1↑□OUι0◦P←13ι15□'ACCOUNT:LOCK ): '◦□IN 0
[6]  WAIT:'PHONE 1-914-428-8821'◦□PT←10
[7]  →(¬Λ/1 0=2↑,(5ρ2)T¬1↑□OUι0)/WAIT
[8]  XFER')'◦□DL 3◦□←'2'◦□DL 3◦□←'O'◦□DL 2
[9]  ,P←XFER P◦□PT←0
[10] Q □YI[ι1]0◦Q[1+□IO]←50

```

▽

▽TERMINAL;L;L1;N;BC

```

[1]  @      TERMINAL          MAY 03/76
[2]  @MCM/700 OPERATES AS A TERMINAL TO HOST COMPUTER
[3]  @NOTE:TRANSMISSION IS LIMITED TO 128 CHARACTERS AT A TIME.
[4]  @TO EXIT FROM THIS FUNCTION TYPE ω RETURN
[5]  L←'          '◦BC←□Y 108
[6]  IN:◦□IN 1↑□OUι0◦L1←(ρL)ι□L◦□IN 0
[7]  L←XFER L1◦→('ω'=(1|ρL1)↑L1)/0
[8]  DLP:→((¬1+ρL)≤N←(LιBC)-□IO)/IN
[9]  N↑L
[10] →(0=N←((BC≠L←(1+N)ιL)ι1)-□IO)/DLP
[11] →DLP◦L←NιL

```

▽

YAI [34 by 1 array of type char; element size 8 byte(s)]

```

8100000007304652 8482060000808008 00000000000A0080 80800D8080846C6C
6C896C6C82836C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C276458
2A2B2C2E5630312F 374B342842000102 0304050607080957 5551365C43295E47
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 506C522D356C0B0C
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6C6C6A84000000
026900FF00200079 80B902FF96FD06F5 82FD82FD02FD82FD 027D00FF86FD00FD
02FD00FD007D00FD 006900FF0040007D 0060007B8040007B 006900FF026D00F9
00F900FF82FF0279 86B800FD80FF82FD 86FF80FD00FC007D A6FD02FF00FD00FD
02FD00FD00FD007D 0000007900F90079

```

YAO [18 by 1 array of type char; element size 8 byte(s)]  
 4100000007304652 8482060000808008 00000000000A0080 80800D8080303132  
 3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
 797A484C202E4023 24255E262A282982 822D5F3D2B508244 534D824F5451822F  
 3F825955424E4549 2C528282825B3C5D 82823B273A224A82 4B3E474157435658  
 5A21828282827F7E 8282000000000000

NAMES IN GROUP 240:

COM DWR GET GPΔ PUT REA RUN SET SRE SWR TRA WRI  
 XFE XTY YYI YYO

▽COMMENTS

- [1] @ COMMENTS JUNE 02/76
- [2] @TO RUN THE DATA TRANSFER PACKAGE ONE COMPUTER
- [3] @ACTS AS MASTER, THE OTHER AS SLAVE.
- [4] @1. TURN ON BOTH COMPUTERS AND SELECT GROUP 240.
- [5] @2. CONNECT THE COUPLERS TO THE PHONE LINE. NOTE THAT ONE
- [6] @ OF THE COUPLERS MUST BE IN ANSWER MODE.
- [7] @3. RUN THE FUNCTION SETUP ON THE MASTER COMPUTER.
- [8] @4. EXECUTE THE FUNCTION RUN ON THE SLAVE COMPUTER.
- [9] @5. THE COMPUTERS ARE NOW READY TO SEND OF RECEIVE DATA.
- [10] @ BY EXECUTING THE FUNCTIONS READ, WRITE OR DWRITE FROM THE
- [11] @ MASTER COMPUTER.
- [12] @6. AVOID TRANSMITTING ITEMS WITH TWO CHARACTER NAMES
- [13] @ ENDING IN Δ SINCE LOCAL VARIABLES USE THESE NAMES.

▽

▽DΔ DWRITE XΔ;IΔ;JΔ;I0Δ

- [1] @ DΔ DWRITE XΔ JULY 07/76
- [2] @WRITE PREFORMATTED ALPHA DATA TO 360/APL
- [3] @DΔ IS DESIRED DIMENSIONS OF DATE
- [4] @XΔ IS TO BE THE DATA NAME IN THE 360
- [5] @VECTORS A00,A01,---,AXX CONTAIN THE ALPHA DATA
- [6] @NOTE: 128≥pAXX
- [7] IΔ←TRA(⌈2,DΔ),' SWRITE''',XΔ,''''
- [8] JΔ←I0←0×I0Δ←I0←(0=x/DΔ)/0
- [9] LPA:→(0=IΔ←'A',⌈2↑⌈100+JΔ)/ERA
- [10] →LPA←JΔ←JΔ+1←(0=IΔ←TRA⌈NΔ)/DNA
- [11] DNA:→0←I0←I0Δ
- [12] ERA:'NOT ENOUGH DATA'

▽

▽ZΔ←RΔ GET IΔ;EΔ

- [1] @ ZΔ←RΔ GET IΔ JUNE 02/76
- [2] @GET FROM RΔ(ANY SHAPE) THE ROW STARTING AT ELEMENT IΔ(I0←0)
- [3] ZΔ←⌈RΔ,(0≠p3↑EΔ)/EΔ←EΔ[( ' '=EΔ)/↑pEΔ←['',(⌈1↑(pRΔ)↑IΔ),';']←';'

▽

GPΔ [vector of type char of length 42; element size 1 byte(s)]  
 DATA TRANSFER PACKAGE - MCM/700 TO MCM/700

∇ZΔ←RΔ PUT IΔ;EΔ

- [1]    Ⓜ       ZΔ←RΔ PUT IΔ                    JUNE 02/76
  - [2]    ⓂPUT INTO RΔ(ANY SHAPE) THE ROW STARTING AT ELEMENT IΔ(□I0←0) FROM LΔ
  - [3]    ZΔ←RΔ◦⊕'RΔ', ((0≠ρ3↓EΔ)/EΔ◦EΔ[( ' '=EΔ)/↓ρEΔ←' [ ', (⊖<sup>-1</sup>↓(ρRΔ)↑IΔ), ' ; ]'←'; '),'←LΔ'
- ∇

∇READ XΔ;IΔ;JΔ;NΔ;MΔ;LΔ;RΔ;I0Δ;TΔ

- [1]    Ⓜ       READ XΔ                            JUNE 02/76
  - [2]    ⓂREAD DATA OR FUNCTION XΔ FROM ANOTHER MCM
  - [3]    MΔ←x/NΔ←1↓NΔ◦→(0>TΔ←1↑NΔ←TRA'SREAD ' ',XΔ,' ' ')/NVA
  - [4]    IΔ←□I0←0×I0Δ←□I0
  - [5]    →(0=x/ρRΔ←NΔρ((TΔ=20)/0), (TΔ=2)/' ')/DNA
  - [6]    LPΔ:LΔ←XTYP⊖IΔ
  - [7]    LDΔ:→LDΔ◦LΔ←LΔ,XTYP⊖ρLΔ◦→(v/(ρLΔ)=MΔ,<sup>-1</sup>↑NΔ)/ADΔ,NCA
  - [8]    ADΔ:→DNA◦RΔ←NΔρLΔ
  - [9]    NCA:→((IΔ←IΔ+' 'ρρLΔ)<MΔ)/LPΔ◦RΔ←RΔ PUT IΔ
  - [10]   DNA:→XTΔ◦⊕XΔ,'←RΔ'◦→(TΔ=3)/FNA
  - [11]   FNA:◦□FX RΔ
  - [12]   XTΔ:→0◦□I0←I0Δ◦□←'0'
  - [13]   NVA:'NO VALUE'
  - [14]   →
- ∇

∇RUN

- [1]    Ⓜ       RUN                                JUNE 01/76
  - [2]    ⓂEXECUTE STATEMENTS RECEIVED FROM ANOTHER SYSTEM
  - [3]    SETUP
  - [4]    RΔ:□←' '
  - [5]    →RΔ◦⊕□' '
- ∇

∇SETUP;A

- [1]    Ⓜ       SETUP                            JUNE 01/76
  - [2]    ⓂSET UP COMMUNICATIONS TABLES TO RECEIVE INPUT
  - [3]    ⓂAND SEND OUTPUT TO ANOTHER MCM/700.
  - [4]    ⓂNOTE: PROMPT SWITCH MUST BE OFF.
  - [5]    →OK[↓0≠1↑□OU A←□YA 1 31
  - [6]    'NO EIA INTERFACE CONNECTED'
  - [7]    →
  - [8]    OK:◦□IN A◦'I'□YW'YYI'◦'O'□YW'YYO'
- ∇

∇SREAD XΔ;IΔ;LΔ;I0Δ;RΔ;TΔ;R0Δ

- [1]    Ⓜ       SREAD XΔ                        JUNE 02/76
- [2]    ⓂSLAVE READ TO TRANSFER DATA OR FUNCTION XΔ
- [3]    →(0 2 3=TΔ←□NC XΔ)/NVA,DAA,FNA
- [4]    →0◦□←'2'◦'INVALID TYPE'
- [5]    NVA:→0◦□←'1'◦'NO VALUE'
- [6]    DAA:→OKΔ◦TΔ←TΔ+18×0=0\0ρRΔ←⊕XΔ
- [7]    FNA:RΔ←□CR XΔ
- [8]    OKΔ:IΔ←TRAN⊖TΔ,ρRΔ
- [9]    □I0←0×I0Δ←□I0◦→(0=x/ρRΔ)/0



```

[10]  RΔ←,RΔ◦→(255<x/ρRΔ)/LPA
[11]  LPA:LΔ←RΔ GET IΔ
[12]  EDΔ:IΔ←TRAN(R0Δ←((TΔ=2 20)/128 10)|ρLΔ)↑LΔ
[13]  →(0≠ρLΔ←R0Δ↓LΔ)/EDΔ
[14]  □I0←I0Δ◦→(0<IΔ)/LPA

```

▽

▽DΔ SWRITE XΔ;IΔ;MΔ;LΔ;RΔ;I0Δ;TΔ;JΔ

```

[1]  @ DΔ SWRITE XΔ JUNE 01/76
[2]  @SLAVE WRITE TO RECEIVE DATA OR
[3]  @FUNCTION XΔ FROM ANOTHER SYSTEM
[4]  IΔ←□I0←0×I0Δ←□I0
[5]  MΔ←x/DΔ←1↓DΔ◦TΔ←1↑DΔ
[6]  →DΔ×ι0=x/ρRΔ←DΔρ((TΔ=20)/0),(TΔ=2)/' '
[7]  LPA:LΔ←' '
[8]  LDA:→(((ρLΔ←LΔ,XTYP ρLΔ)=MΔ,¯1↑DΔ)/ADΔ,NCΔ),LDA
[9]  ADA:→DΔ◦RΔ←DΔρLΔ
[10]  NCA:→((IΔ←IΔ+' 'ρρLΔ)<MΔ)/LPA◦RΔ←RΔ PUT IΔ
[11]  DNA:→XTΔ◦⊕XΔ,'←RΔ'◦→(TΔ=3)/FND◦□←'0'
[12]  FND:◦□FX RΔ
[13]  XTΔ:□I0←I0Δ .

```

▽

▽RΔ←TRANSFER XΔ

```

[1]  @ RΔ←TRANSFER XΔ JULY 07/76
[2]  @TRANSFER DATA FOR READ AND WRITE
[3]  @RECEIVED DATA IS CHECKED FOR NUMERIC AND EXECUTED
[4]  S1:→0◦RΔ←⊕RΔ◦→((RΔ←□' '◦□←XΔ)□ZZ CHK)/ERA
[5]  ERA:'ERROR IN TRANSMITTING'
[6]  RΔ
[7]  FΔ:RΔ←('AR'=1↑17↓(17+ι1)□'ABORT OR RETRY? :R')/AB,S1◦□IN 0
[8]  →RΔ,FΔ◦□IN 1↑□OUι0
[9]  AB:→

```

▽

▽WRITE XΔ;IΔ;LΔ;I0Δ;RΔ;TΔ;R0Δ

```

[1]  @ WRITE XΔ JUNE 02/76
[2]  @WRITE DATA OR FUNCTION XΔ TO ANOTHER MCM
[3]  →(0 2 3=TΔ←□NC XΔ)/NVA,DAΔ,FND
[4]  'INVALID TYPE'
[5]  →
[6]  NVA:'NO VALUE'
[7]  →
[8]  DAΔ:→0KΔ◦TΔ←TΔ+18×0=0\0ρRΔ←⊕XΔ
[9]  FND:RΔ←□CR XΔ
[10]  OKΔ:IΔ←TRAN(⊕TΔ,ρRΔ),' SWRITE''',XΔ,'''
[11]  □I0←0×I0Δ←□I0◦→(0=x/ρRΔ)/0
[12]  RΔ←,RΔ◦→(255<x/ρRΔ)/LPA
[13]  LPA:LΔ←RΔ GET IΔ
[14]  EDΔ:IΔ←TRAN(R0Δ←((TΔ=2 20)/128 10)|ρLΔ)↑LΔ
[15]  →(0≠ρLΔ←R0Δ↓LΔ)/EDΔ
[16]  □I0←I0Δ◦→(0<IΔ)/LPA

```

▽

∇RA←XFER XΔ

- [1]   Ⓜ       RA←XFER XΔ                    JUNE 02/76
- [2]   Ⓜ TRANSFER DATA BETWEEN SYSTEMS
- [3]   RA←□' ' ◦□←XΔ

∇

∇ZA←XTYPE XΔ

- [1]   Ⓜ       ZA←TYPE XΔ                    JUNE 01/76
- [2]   Ⓜ TRANSMITT XΔ, FIX TYPE (GLOBAL VARIABLE TΔ) OF RESULT
- [3]   Ⓜ EXECUTE IF NUMERIC, RETURN IF CHARACTER
- [4]   →0◦ZA←□' ' ◦→(TΔ=20)/NUM◦□←XΔ
- [5]   NUM:ZA←□' ' ◦

∇

YYI [34 by 1 array of type char; element size 8 byte(s)]

8100000003304652 84820600080D0A08 00000000000A0080 8000070000846C6C  
6C896C6C6C836C6C 6C6C826C6C6C6C6C 6C6C6C6C6C6C6C6C 6C6C6C6C6C276458  
2A2B2C2E5630312F 374B342842000102 0304050607080957 5551365C43295E47  
603A490A5D254A59 5B263C483E38404C 3B3F46615F624563 506C522D356C0B0C  
0D0E0F1011121314 15161718191A1B1C 1D1E1F2021222324 6C6C6C6A84000000  
026900FF00200079 80B902FF96FD06F5 82FD82FD02FD82FD 027D00FF86FD00FD  
02FD00FD007D00FD 006900FF0040007D 0060007B8040007B 006900FF026D00F9  
00F900FF82FF0279 86B800FD80FF82FD 86FF80FD00FC007D A6FD02FF00FD00FD  
02FD00FD00FD007D 0000007900F90079

YY0 [18 by 1 array of type char; element size 8 byte(s)]

4100000003304652 84820600080D0A08 00000000000A0080 8000070000303132  
3334353637383946 6162636465666768 696A6B6C6D6E6F70 7172737475767778  
797A484C202E4023 24255E262A282982 822D5F3D2B508244 534D824F5451822F  
3F825955424E4549 2C528282825B3C5D 82823B273A224A82 4B3E474157435658  
5A21828282827F7E 8282000000000000

NAMES IN GROUP 241:

COM DWR GET GPΔ OUT PUT REA RTY SEN SIG SRE SWR  
TER TRA WRI XTY ΔPU

∇COMMENTS

- [1]   Ⓜ       COMMENTS                    JULY 13/76
- [2]   Ⓜ DATA TRANSFER PACKAGE TO APLSV AT U OF T                    E
- [3]   Ⓜ TO RUN THIS SYSTEM:
- [4]   Ⓜ 1. SELECT GROUP 241 (□XS 241) T
- [5]   Ⓜ 2. EXECUTE THE FUNCTION SIGNON.
- [6]   Ⓜ 3. EXECUTE THE FUNCTION SEND (SEND' ') TO MOVE THE
- [7]   Ⓜ     APPROPRIATE FUNCTIONS TO THE U OF T SYSTEM.
- [8]   Ⓜ 4. TO READ DATA FROM APLSV, EXECUTE READ FUNCTION.
- [9]   Ⓜ     (READ'NAME') WHERE NAME IS THE DATA NAME IN THE APLSV SYSTEM.
- [10]  Ⓜ 5. TO WRITE DATA TO THE APLSV SYSTEM, EXECUTE THE FUNCTION WRITE
- [11]  Ⓜ     (WRITE'NAME') WHERE NAME IS THE DATA NAME IN THE MCM SYSTEM.



```

[4] IΔ←I0←0×I0Δ←I0
[5] →(0=x/ρRΔ←NΔρ((TΔ=20)/0),(TΔ≠20)/' ')/DNA
[6] LPΔ:LΔ←''
[7] LDΔ:→((MΔ=ρLΔ←LΔ,XTYP IΔ+ρLΔ)/ADΔ,NCA),LDA
[8] ADΔ:→DNA◦RΔ←NΔρLΔ
[9] NCA:→((IΔ←IΔ+' 'ρρLΔ)<MΔ)/LPΔ◦'RΔ'PUT IΔ
[10] DNA:→XTΔ◦XΔ,'←RΔ'◦→(TΔ=3)/FNA
[11] FNA:◦FX RΔ
[12] XTΔ:→0◦' '◦←0×I0←I0Δ
[13] NVA:'NO VALUE'
[14] →

```

▽

▽YΔ←RTYPE XΔ

```

[1] @ YΔ←RTYPE XΔ JULY 07/76
[2] @TRANSMITT XΔ, FIX TYPE (GLOBAL VARIABLE ZΔ) OF RESULT
[3] @EXECUTE IF NUMERIC, RETURN IF CHARACTER
[4] @THIS FUNCTION MUST RESIDE IN APLSV SYSTEM
[5] →(ZΔ=20)/NUΔ,0ρ←XΔ
[6] →0,0ρYΔ←[]
[7] NUΔ:YΔ←XΔ

```

▽

▽SEND XΔ;YΔ;IΔ

```

[1] @ SEND XΔ JULY 07/76
[2] @SEND FUNCTIONS XΔ TO APLSV.(0=4|ρ,XΔ)
[3] @IF XΔ IS EMPTY SEND GENERATES REQUIRED NAME LIST
[4] @THE RESPONSE FROM APLSV IS DISPLAYED BRIEFLY FOR EACH FUNCTION Y
[5] @LINE TRANSMITTED. NO CHECKING IS PERFORMED ON THIS RESPONSE
[6] XΔ←'SREASWRIRTYPGET ΔPUT'◦→(0≠ρ,XΔ)/OKΔ
[7] OKΔ:[]PT←10◦→(0≠4|ρ,XΔ)/LEΔ
[8] NXΔ:YΔ←[]CR 4↑XΔ◦IΔ←[]I0
[9] S1Δ:[]' '◦←YΔ[IΔ;]
[10] →((IΔ←IΔ+1)<[]I0+1↑ρYΔ)/S1Δ
[11] []' '◦←'▽'
[12] →[]PT←0◦→(0≠ρXΔ←4↓XΔ)/NXΔ)
[13] LEΔ:'LENGTH ERROR'
[14] →

```

▽

▽SIGNON;P

```

[1] @ SIGNON JULY 06/76
[2] @SIGN ON PROCEDURE TO APLSV AT U OF T
[3] @300 BAUD - CORRESPONDENCE
[4] SETUP'C'
[5] P←13↓(14+1)[]'ACCOUNT:LOCK ) : '◦[]IN 0
[6] WAIT:'PHONE 1-416-978-7447'◦[]PT←10
[7] →WAIT[12>4]1↑[]IN 1↑[]OU10
[8] ◦[]DL 1◦[]BO 52◦[]DL 1
[9] P←[]' '◦←P◦[]PT←0◦[]' '◦←' ) '
[10] P

```

▽

VSREAD XΔ; IΔ; LΔ; IOΔ; RΔ; ZΔ; ROΔ

```
[1]  @ SREAD XΔ          JULY 07/76
[2]  @SLAVE READ TO TRANSFER DATA OR FUNCTION XΔ
[3]  @THIS FUNCTION MUST RESIDE IN APLSV SYSTEM
[4]  →(0 2 3=ZΔ←□NC XΔ)/NVΔ, DΔ, FΔ
[5]  →0×□←-2
[6]  NVΔ:→0×□←-1
[7]  DΔ:→0KΔ, ZΔ←ZΔ+18×0=0\0ρRΔ←ΔXΔ
[8]  FΔ:RΔ←□CR XΔ
[9]  OKΔ: IΔ←Δ□, 0ρ□←ZΔ, ρRΔ
[10] →(0=x/ρRΔ)/0
[11] □IO←0×IOΔ←□IO
[12] →(255<x/ρRΔ)/LPA
[13] →EDΔ, 0ρLΔ←, RΔ
[14] LPA: LΔ←'RΔ'GET IΔ
[15] EDΔ:→(ZΔ=20)/NUΔ
[16] →GTA, 0ρ□←((ROΔ←128|ρLΔ)↑LΔ), ' . '
[17] NUΔ:□←(ROΔ←10|ρLΔ)↑LΔ
[18] GTA: IΔ←Δ□
[19] →(0≠ρLΔ←ROΔ↓LΔ)/EDΔ
[20] →(0<IΔ)/LPA
[21] □IO←IOΔ
```

▽

VDA SWRITE XΔ; IΔ; MΔ; LΔ; RΔ; IOΔ; ZΔ; JA

```
[1]  @ DΔ SWRITE XΔ      JULY 07/76
[2]  @SLAVE WRITE TO RECEIVE DATA OR FUNCTION XΔ
[3]  @THIS FUNCTION MUST RESIDE IN APLSV SYSTEM
[4]  IΔ←□IO←0×IOΔ←□IO
[5]  MΔ←(2|ρMΔ)↑MΔ←φDΔ, x/DΔ←1↓DΔ, 0ρZΔ←1↑DΔ
[6]  →DNΔ×10=x/ρRΔ←DΔρ((ZΔ=20)/0), (ZΔ≠20)/' '
[7]  LPA: LΔ←' '
[8]  LDA:→((MΔ=ρLΔ←LΔ, RTYPE IΔ+ρLΔ)/ADΔ, NCA), LDA
[9]  ADA:→DNΔ, 0ρRΔ←DΔρLΔ
[10] NCA: 'RΔ'ΔPUT IΔ
[11] →((IΔ←IΔ+' 'ρρLΔ)<MΔ)/LPA
[12] DNΔ:→(ZΔ=3)/FΔ, □←0
[13] ΔXΔ, '←RΔ'
[14] →XTΔ
[15] FΔ: IΔ←□FX RΔ
[16] XTΔ: □IO←IOΔ
```

▽

VTERMINAL; L; L1; N; BC

```
[1]  @ TERMINAL          MAY 04/76
[2]  @MCM/700 OPERATES AS A TERMINAL TO HOST COMPUTER
[3]  @NOTE: TRANSMISSION IS LIMITED TO 128 CHARACTERS AT A TIME.
[4]  @TO EXIT FROM THIS FUNCTION TYPE ω RETURN
[5]  L←' '°BC←□Y 108
[6]  IN: °□IN 1↑□OU10°L1←(ρL)↓□L°□IN 0
[7]  L←□' '°□←L1°→('ω'=(1|ρL1)↑L1)/0
[8]  DLP:→((-1+ρL)≤N←(L1BC)-□IO)/IN
[9]  N↑L
```

```
[10] →(0=N←((BC≠L←(1+N)↓L)↑1)-□IO)/DLP
[11] →DLP◦L←N↓L
▽
```

▽RD←TRANSFER XΔ

```
[1] ④ RD←TRANSFER XΔ JULY 07/76
[2] ④TRANSFER DATA FOR READ AND WRITE
[3] ④RECEIVED DATA IS CHECKED FOR NUMERIC AND EXECUTED
[4] S1:→0◦RD←⊕RD◦→((RD←¯1↓□' '◦□←XΔ)□ZZ CHK)/ERΔ
[5] ERΔ:→RD←0◦→('0'≠1↑RD)/E1Δ
[6] E1Δ:'ERROR IN TRANSMITTING'
[7] RD
[8] FΔ:RD←('AR'=1↑17↓(17+↑1)□'ABORT OR RETRY? :R')/AB,S1◦□IN 0
[9] →RD,FΔ◦□IN 1↑□OU↑0
[10] AB:→
▽
```

▽WRITE XΔ;IΔ;LΔ;IOΔ;RΔ;TΔ;ROΔ

```
[1] ④ WRITE XΔ JULY 12/76 T
[2] ④WRITE DATA OR FUNCTION XΔ TO APLAV
[3] →(0 2 3=TΔ←□NC XΔ)/NVΔ,DΔ,FΔ
[4] 'INVALID TYPE'
[5] →
[6] NVΔ:'NO VALUE'
[7] →
[8] DΔ:→0KΔ◦TΔ←TΔ+18×0=0\0pRD←⊕XΔ
[9] FΔ:RD←□CR XΔ
[10] OKΔ:(2,1↓□Y0[↑1]0)□Y0[↑1]0
[11] IΔ←TRAN(⊕TΔ,ρRD), ' SWRITE''',XΔ, ''''
[12] □IO←0×IOΔ←□IO◦→(0=x/ρRD)/0
[13] →EDΔ◦LΔ←,RD◦→(255<x/ρRD)/LPΔ
[14] LPΔ:LΔ←'RD'GET IΔ
[15] EDΔ:IΔ←TRAN(ROΔ←((TΔ=2 3 20)/128 128 10)↓ρLΔ)↑LΔ
[16] →(0≠ρLΔ←ROΔ↓LΔ)/EDΔ
[17] □IO←IOΔ◦→(0<IΔ)/LPΔ
[18] (7,1↓□Y0[↑1]0)□Y0[↑1]0
▽
```

▽ZΔ←XTYPE XΔ

```
[1] ④ ZΔ←TYPE XΔ JULY 07/76
[2] ④TRANSMITT XΔ, FIX TYPE (GLOBAL VARIABLE TΔ) OF RESULT
[3] ④EXECUTE IF NUMERIC, RETURN IF CHARACTER
[4] →0◦ZΔ←¯2↓□' '◦→(TΔ=20)/NUM◦□←XΔ
[5] NUM:ZΔ←⊕¯1↓□' '
▽
```

▽ZΔ ΔPUT IΔ;EΔ

```
[1] ④ ZΔ ΔPUT IΔ JULY 07/76
[2] ④PUT INTO ZΔ(ANY SHAPE) THE ROW STARTING AT ELEMENT IΔ(□IO←0) FROM LΔ
[3] ④THIS FUNCTION MUST RESIDE IN APLSV SYSTEM
[4] →(0=ρEΔ←¯1↓(ρ⊕ZΔ)↑IΔ)/P1Δ
```

```
[5]  EΔ([' '=EΔ)/ιρEΔ←[' ',EΔ,' ' ]]←';'
[6]  P1Δ:⊘ZΔ,EΔ,'←LΔ'
  ▽
```

NAMES IN GROUP 242:

```
AN  COM  DWR  GET  GPΔ  OUT  PUT  REA  SEN  SIG  SRE  SWR
TER  TRA  TYP  WRI  XFE  XFR  ΔBU  ΔGE  ΔPU
```

▽Z←AN X

```
[1]  @      Z←AN X          MAY 04/76
[2]  @CHECK TYPE - EXECUTE IF NUMERIC
[3]  @THIS FUNCTION MUST RESIDE IN THE 360
[4]  →(T=20)/NUM
[5]  Z←X
[6]  →0
[7]  NUM:Z←⊘X
  ▽
```

▽COMMENTS

```
[1]  @      COMMENTS          APR 15/77
[2]  @DATA TRANSFER PACKAGE TO 360 APL AT I.P. SHARPE
[3]  @TO RUN THIS SYSTEM:
[4]  @  1. SELECT GROUP 242 (□XS 242)
[5]  @  2. EXECUTE THE FUNCTION SIGNON.
[6]  @  3. EXECUTE THE FUNCTION SEND (SEND'' ) TO MOVE THE
[7]  @      APPROPRIATE FUNCTIONS TO THE OTHER SYSTEM.
[8]  @  4. TO READ DATA FROM APL/360, EXECUTE READ FUNCTION.
[9]  @      (READ'NAME') WHERE NAME IS THE DATA NAME IN THE APL/360 SYSTEM.
[10] @  5. TO WRITE DATA TO THE APL/360 SYSTEM, EXECUTE THE FUNCTION WRITE
[11] @      (WRITE'NAME') WHERE NAME IS THE DATA NAME IN THE MCM SYSTEM.
[12] @  6. A FUNCTION DWRITE IS SUPPLIED TO WRITE LARGER DATA ITEMS.
[13] @NOTE: DATA AND FUNCTIONS READ FROM APL/360 MUST CONFORM TO MCM
[14] @      SIZE RESTRICTIONS. DO NOT USE NAMES ENDING IN DEL 'Δ'.
  ▽
```

▽D DWRITE X;I;J;I0;Y0

```
[1]  @      D DWRITE X          JUNE 01/76
[2]  @WRITE PREFORMATTED DATA TO 360/APL
[3]  @D IS DESIRED DIMENSIONS OF DATE
[4]  @X IS TO BE THE DATA NAME IN THE 360
[5]  @VECTORS A00,A01,--- ,AXX CONTAIN THE ALPHA DATA
[6]  @NOTE:      60≥ρAXX
[7]  (3,1↓Y0←□Y0[ι1]0)□Y0[ι1]0
[8]  °TRA↑2,D°TRA' SWRITE''',X, ''''
[9]  I←□I0←0×I0←□I0°→(0=x/D)/0
[10] J←0
[11] LPA:→(0=□NC N←'A', ↑2↑↑100+J)/ERR
[12] →(0=I←⊘TRA⊘N)/DONE
[13] →LPA°J←J+1
[14] DONE:□I0←I0°TRA 0
[15] →0°Y0 □Y0[ι1]0
```

```
[16] ERR: 'NOT ENOUGH DATA'
[17] OUT
▽
```

▽Z←R GET I;E

```
[1] @ Z←R GET I MAY 04/76
[2] @GET FROM R(ANY SHAPE) THE ROW STARTING AT ELEMENT I(⊖I0←0)
[3] E[( ' '=E)/⊖E←'[', (⊖1↓(ρR)TI), ';']←';'
[4] Z←⊖'R', (0≠ρ3↓E)/E
▽
```

GPA [vector of type char of length 37; element size 1 byte(s)]  
TRANSFER PACKAGE - MCM/700 TO 360/APL

▽OUT;0;BS

```
[1] @ OUT APR 05/76
[2] @ISSUE 0 BACKSPACE U BACKSPACE T TO 360/APL
[3] →(128=BS←⊖Y0[11]3)/0
[4] 0←⊖Y0[2+11]'OUT'
[5] ⊖BO 1↑0⊖BO BS⊖BO 1↑1↓0⊖BO BS⊖BO 1↑0⊖BO 95 B0
▽
```

▽Z←R PUT I;E

```
[1] @ Z←R PUT I MAY 04/76
[2] @PUT INTO R(ANY SHAPE) THE ROW STARTING AT
[3] @ELEMENT I(⊖I0←0) FROM GLOBAL VARIABLE L E
[4] E[( ' '=E)/⊖E←'[', (⊖1↓(ρR)TI), ';']←';'
[5] ⊖⊖'R', ((0≠ρ3↓E)/E), '←L'
[6] Z←R
▽
```

▽READ X;I;J;N;M;L;R;I0;T

```
[1] @ READ X MAY 06/76
[2] @READ DATA X FROM 360/APL
[3] N←1↓N⊖→(0>T←1↑N←⊖TRA' SREAD ''',X, ''')/NVA
[4] I←⊖I0←0×I0←⊖I0
[5] →DNA×⊖0=M←x/ρR←Nρ((T=20)/0), (T=2)/' '
[6] LPA:L←TYP⊖I
[7] LDA:→LDA⊖L←L, TYP⊖ρL⊖→((ρL)=M, 1↑N)/ADA, NXA
[8] NXA:→(M>I←I+ρL)/LPA⊖R←R PUT ''ρI
[9] DNA:→0×⊖I0←I0⊖⊖X, '←R'⊖TRA'0'
[10] ADA:→DNA⊖R←NρL
[11] NVA:'NO VALUE'
[12] →
▽
```

▽SEND X;Y;I

```
[1] @ SEND X MAY 04/76
[2] @SEND FUNCTIONS X TO 360/APL. 0=4|ρ,X
[3] @IF X IS EMPTY SEND GENERATES REQUIRED NAME LIST
[4] X←'SREASWRIAN XFR ΔGETΔPUTΔBUI'⊖→(0≠ρ,X)/XOK
```



```

[5] XOK:→(0≠4|ρ,X)/LEΔ
[6] NEXT:Y←□CR 4↑X○I←□IO
[7] S1:○TRA Y[I;]
[8] →((I←I+1)←□IO+1↑ρY)/S1
[9] ○TRA'▽'
[10] →((0≠ρX←4↓X)/NEXT),0
[11] LEΔ:'LENGTH ERROR'
[12] →

```

▽

▽SIGNON;P

```

[1] ④ SIGNON JULY 06/76
[2] ④SIGN ON PROCEDURE TO 360/APL WITH 3705 FRONT END PROCESSOR
[3] ④300 BAUD - CORRESPONDENCE
[4] SETUP'C'○□NC'XFER'
[5] P←13↓(14+↑1)□'ACCOUNT:LOCK ) :'○□IN 0
[6] WAIT:'PHONE 1-416-360-1200'○□PT←10
[7] →WAIT[↑2>4]↑1↑□IN 1↑□OU↑0
[8] ○□DL 1○□BO 52○□DL 1
[9] ,P←XFER P○□PT←0

```

▽

▽SREAD X;I;L;IO;R;T;RO

```

[1] ④ SREAD X MAY 04/76
[2] ④SLAVE READ TO TRANSFER DATA X FROM 360 TO MCM/700.
[3] ④THIS FUNCTION MUST BE RESIDENT IN THE 360
[4] T←2+18×0=0\0ρR←↓X
[5] ④NOTE LINE EDΔ
[6] ④1. Z STOPS TRAILING BLANK SUPPRESSION FOR CHARACTER DATA
[7] ④2. MAX OF 10 NUMBERS ARE TRANSMITTED PER LINE. THIS
[8] ④ MAY BE INCREASED IF 120>ρ↑10↑L.
[9] I←↓XFR T,ρR
[10] →(0=x/ρR)/0
[11] I←□IO←0×IO←□IO
[12] →(255<x/ρR)/LPAΔ
[13] R←,R
[14] LPAΔ:L←R ΔGET I
[15] EDΔ:I←↓XFR((RO←((T=2 20)/120 10)|ρL)↑L),(T=2)↑'Z'
[16] →(0≠ρL←RO↓L)/EDΔ
[17] →(0≠I)/LPAΔ
[18] □IO←IO

```

▽

▽SWRITE X;I;N;M;L;R;IO;T;J

```

[1] ④ SWRITE X JUNE 01/76
[2] ④SLAVE WRITE TO RECEIVE DATA X FROM MCM/700
[3] ④THIS FUNCTION MUST RESIDE IN THE 360
[4] I←□IO←0×IO←□IO
[5] T←1↑N←↓XFR 0ρ'GET TYPE AND RHO'
[6] N←1↓N
[7] →DNA×↑0=M←x/ρR←Np((T=20)/0),(T=2)/' '
[8] LPAΔ:L←AN XFR I
[9] LDAΔ:→((ρ,L)=M,↑1↑N)/ADA,NXAΔ

```

```

[10] →LDA,θρL←L,AN XFR ρ,L
[11] NXΔ:R←R ΔPUT' 'ρI
[12] →(M>I←I+ρL)/LPA
[13] DNΔ:⊕X,'←R' J
[14] →0×□IO←IO
[15] ADΔ:R←NρL
[16] →DNΔ

```

▽

▽TERMINAL;L;L1;N;BC

```

[1]  @      TERMINAL          MAY 04/76
[2]  @MCM/700 OPERATES AS A TERMINAL TO HOST COMPUTER
[3]  @NOTE:TRANSMISSION IS LIMITED TO 128 CHARACTERS AT A TIME.
[4]  @TO EXIT FROM THIS FUNCTION TYPE ω RETURN
[5]  L←'      '°BC←□Y 108
[6]  IN:°□IN 1↑□OUι0°L1←(ρL)↓□L°□IN 0
[7]  L←XFER L1°→('ω'=(1|ρL1)↑L1)/0
[8]  DLP:→((¬1+ρL)≤N←(LιBC)-□IO)/IN
[9]  N↑L
[10] →(0=N←((BC≠L←(1+N)↓L)ι1)-□IO)/DLP
[11] →DLP°L←N↓L

```

▽

▽R←TRANSFER X

```

[1]  @      R←TRANSFER X      JUNE 01/76
[2]  @TRANSFER DATA FOR READ AND WRITE
[3]  @RECEIVED DATA IS CHECKED FOR NUMERIC
[4]  S1:→(Λ/(R←¬1↓□' '°□←X)∈' 0123456789[]')/0
[5]  ERR:'ERROR IN TRANSMITTING'
[6]  R
[7]  R←('AR'=1↑17↓□'ABORT OR RETRY? :')/AB,S1°□IN 0
[8]  →R,ERR°□IN 1↑□OUι0
[9]  AB:OUT
[10] →

```

▽

▽Z←TYPE X

```

[1]  @      Z←TYPE X          MAY 06/76
[2]  @TRANSMITT X, FIX TYPE (GLOBAL VARIABLE T) OF RESULT
[3]  @EXECUTE IF NUMERIC, DROP LAST BYTE IF CHARACTER
[4]  →0°Z←¬2↓□' '°→(T=20)/NUM°□←X
[5]  NUM:Z←⊕¬1↓□' '

```

▽

▽WRITE X;I;L;IO;R;T;RO;YO

```

[1]  @      WRITE X          JUNE 01/76
[2]  @WRITE DATA X TO 360/APL
[3]  →(0 2 3=T←□NC X)/NVΔ,DAΔ,FNΔ
[4]  'INVALID TYPE'
[5]  →
[6]  FNΔ:→0°SEND 4↑X,' '
[7]  NVΔ:'NO VALUE'

```

```

[8] →
[9] DAD: (3, 1↓Y0←□Y0[11]0)□Y0[11]0
[10] T←T+18×0=0\0ρR←X
[11] °TRA←T, ρR←TRA' SWRITE''', X, ''''
[12] I←□I0←0×I0←□I0←(0=x/ρR)/0
[13] R←, R←(255<x/ρR)/LPA
[14] LPA: L←R GET I
[15] EDA: I←XTRA(R0←((T=2 20)/60 10) |ρL)↑L
[16] °NOTE: TRANSMISSION IS LIMITED TO 60 CHAR. PER LINE
[17] →(0≠ρL←R0↓L)/EDA
[18] □I0←I0←(0<I)/LPA
[19] Y0 □Y0[11]0

```

▽

▽R←XFER X

```

[1] ° Z←XFER X MAY 04/76
[2] °TRANSFER DATA TO AND FROM SYSTEM
[3] R←□' '°□←X
[4] °'IN CASE ATTN'

```

▽

▽Z←XFR X

```

[1] ° Z←XFR X MAY 04/76
[2] °TRANSFER DATA BETWEEN 360 AND MCM
[3] °THIS FUNCTION MUST RESIDE IN 360
[4] Z←□, 0ρ□←X

```

▽

▽Z←ΔBUILD

```

[1] ° Z←BUILD MAY 04/76
[2] °BUILD INDEX FOR R (ANY SHAPE)
[3] °SPECIAL VERSION FOR 360 WITH ΔFMT
[4] Z←'R'
[5] →(0=ρ, 1↓ρR)/0
[6] Z←'R[', (, ('I3'ΔFMT 1↓(ρR)TI), ';'), ']'

```

▽

▽Z←R ΔGET I

```

[1] ° Z←R ΔGET I MAY 04/76
[2] °GET FROM R(ANY SHAPE) THE ROW STARTING AT ELEMENT I(□I0←0)
[3] Z←XΔBUILD

```

▽

▽Z←R ΔPUT I

```

[1] ° Z←R ΔPUT I MAY 04/76
[2] °PUT INTO R(ANY SHAPE) THE ROW STARTING AT
[3] °ELEMENT I(□I0←0) FROM GLOBAL VARIABLE L M
[4] XΔBUILD, '←L'
[5] Z←R

```

▽

NAMES IN GROUP 255:  
ANA DEA WHI

∇ANA CLM;ER;T;N;T0;XCL;S;MU;TOT;CNT;INC;SIG

```
[1] @ANALYSE CLAIM
[2] ER←(ρM)↓M←'REQ''D EXPER-RATING LIMITS : '
[3] □←3 0ρ''○□OU □YA 66
[4] □←''○□←'GROUP : ',GN[GRP[1;1];]
[5] □←''○□←'GROUP SIZE: ',(¯250×DATA[1]),' LIVES'
[6] □←'NUMBER OF SIMULATION YEARS: ',¯DATA[2]
[7] T0←' TO '○N←5000×DATA[1]○T←1
[8] OUT:□←2 0ρ''
[9] XCL←(DATA[2])ρ0
[10] XCL[1]←((COU[1]=0),COUNT[1]≠0)/0,+/ER[T][CLM[ιCOU[1]]×S←1
[11] XT0:XCL[S+1]←((COU[S+1]=0),COU[S+1]≠0)/0,+/ER[T][CLM[(+/COU[ιS])+ιCOU[S+1]]
[12] →(DATA[2]>S←S+1)/XT0
[13] □←''○□←'EXPERIENCE-RATING LIMIT: ',¯ER[T]
[14] □←''○□←'OBSERVED MEAN CLAIMS: ',¯MU←(+/XCL)÷DATA[2]
[15] □←''○□←'OBSERVED STANDARD DEVIATION: ',¯SIG←(+/(XCL-MU)*2)÷DATA[2]*0.5
[16] □←2 0ρ''○□←'RATIO OF SAMPLE STANDARD DEVIATION TO MEAN: ',8 6 0¯SIG÷MU
[17] CNT←1÷INC←0○TOT←ι0
[18] IN:INC←+/(XCL≥N×CNT-1)∧XCL<N×CNT
[19] □←(8 0¯N×CNT-1),T0,(8 0¯1+N×CNT),(15 0¯INC),15 0¯+/TOTCLM←TOTCLM,INC
[20] CNT←CNT+1
[21] →((ρXCL)>+/TOT)/IN
[22] →((ρER)≥T←T+1)/OUT
```

∇

∇DEA DATA;GRP;COU;EMP;K;G;J;MOV

```
[1] @GRP DEATHYEARS DATA
[2] GRP←((250×DATA[1]),4)ρGRP○GRP←(ρM)↓M←'GROUP: '
[3] EMP←0○COU←(DATA[2])ρ0○K←ι0
[4] OUT:EMP←EMP+1
[5] R←0○→(EMP>250×DATA[1])/END
[6] IN:R←R+[(¯0.00001×1?100000)÷¯1-A6QUIN[0.2×GRP[EMP;3]-13]
[7] →(R>DATA[2])/OUT
[8] →(R=0)/IN
[9] K←((+/COUNT[ιR])↑K),GRP[EMP;4],(+/COUNT[ιR])↓K
[10] COUNT[R]←COUNT[R]+1
[11] →IN
[12] END:→ANAL×ιN=G←(ρM)↓M←'SUMMARY OF CLAIMS ? '
[13] □←'SUMMARY OF CLAIMS BY SIMULATION YEAR: '
[14] □←''
[15] MOVEAVE←(ρCOUNT)ρ0
[16] J←0
[17] FIN:MOVEAVE[J+10]←+/(10↑J↓COUNT)
[18] J←J+1
[19] →(J≤(ρCOUNT)-10)/FIN
[20] □←(3,DATA[2])ρ(ιDATA[2]),COUNT,MOVEAVE
[21] ANAL:ANALYSE K
```

∇

WHI [4 by 250 numeric array; element size 3 byte(s)]  
1 1 18 8000  
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1 1 18 10000  
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