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WELL, NIAD MEMBERS, ITS HARD FOR ME TO BELIEVE BUT BY THE TIME YOU RECEIVE THIS LABOR DAY WILL BE ON US ! CONTINUING OUR STUDY IN EPHESIANS -  
 9 FOR HE HAS MADE KNOWN TO US IN ALL WISDOM AND INSIGHT THE MYSTERY OF HIS WILL, ACCORDING TO HIS PURPOSE WHICH HE SET FORTH IN CHRIST 10 AS A PLAN FOR THE FULLNESS OF TIME, TO UNITE ALL THINGS IN HIM, THINGS IN HEAVEN AND THINGS ON EARTH.  
 THESE TWO VERSES DEFINE THE MOST COMPREHENSIVE AND PERFECT PLAN EVER CONTRIVED TO REVERSE THE PROBLEM CAUSED BY THE DISOBEDIENCE OF ADAM AND EVE. YOU SEE, THIS ACT OF DISOBEDIENCE RESULTED IN A BREAKING OF THE RELATIONSHIP BETWEEN MAN AND GOD, WHICH IS REALLY SPIRITUAL DEATH FROM THE STANDPOINT THAT MAN'S SPIRITUAL UNION WITH GOD WAS BROKEN. I OCCASIONALLY TRY TO IMAGINE WHAT IT MUST HAVE BEEN LIKE IN THE GARDEN OF EDEN FOR ADAM AND EVE, WHAT A PERFECT AND BEAUTIFUL WORLD IT WAS BECAUSE THEY WERE IN SPIRITUAL UNION WITH GOD. THE EARTH ITSELF WAS AT PEACE, IT PRODUCED ALL THE FOOD THEY NEEDED AND THE ANIMALS WERE THERE FOR THEIR ENJOYMENT. GOD HIMSELF WALKED WITH THEM IN THE GARDEN - ADAM AND EVE WERE GOD'S CREATION AND THEY COULD LOOK UPON HIM AND BE WITH HIM BECAUSE THE BARRIER OF SIN WAS NOT PRESENT. REMEMBER WHEN MOSES ASKED GOD IF HE COULD SEE HIM AND GOD SAID NO BECAUSE MOSES WOULD DIE IF HE DID. THIS WAS BECAUSE MAN HAS BEEN TAINTED BY SIN AND GOD AND SIN CAN NOT CO-EXIST. JESUS WAS SENT TO RESTORE THIS RELATIONSHIP BETWEEN GOD AND MAN, WHICH WOULD RE-ESTABLISH THE SPIRITUAL UNITY THAT WAS LOST IN THE GARDEN. THIS IS GOD'S GREAT PLAN, THAT THROUGH JESUS THE SPIRITUAL REALM IN HEAVEN WOULD BE RE-UNITED WITH THE EARTH AND GOD'S CREATION - MAN.  
 AGAIN, THESE VERSES STATE THAT THIS PLAN IS ACCOMPLISHED THROUGH JESUS CHRIST, THE SON OF GOD. JESUS WAS GOD'S MEDIATOR TO MAN, THE METHOD MY BY WHICH THIS PLAN OF RE-UNIFICATION WAS TO BE ACCOMPLISHED. JESUS CAME TO THE EARTH TO BRING IT BACK IN UNITY WITH HEAVEN. HE HAD TO REMOVE THE SIN COVERING THAT HAD FALLEN ON MAN BECAUSE THIS WAS THE ONLY WAY THAT MAN AND GOD COULD BE RECONCILED. HENCE, HE BORE THE JUDGEMENT FOR SIN UPON HIMSELF TO PAY FOR OUR SINS THAT WE MIGHT BECOME SINLESS IN GOD'S EYES. THIS IS THE "MYSTERY" THAT IS SPOKEN OF IN VERSE 9, THAT GOD THROUGH HIS LOVE AND GRACE TO US HIS CHILDREN

WOULD DEVISE A PLAN THAT COULD RESULT IN THE TOTAL FORGIVENESS OF OUR SINS AND REUNITE US WITH OUR GOD IN SPIRITUAL UNITY IN ORDER FOR US TO RECEIVE ALL THE SPIRITUAL BLESSINGS WE ARE INTITLED TO (THAT ADAM AND EVE HAD ORIGINALLY).

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## NIAD NEWS

. THINGS ARE REALLY HOPPING AROUND HERE THESE DAYS. BASED ON THE RATE YOU ARE OBTAINING THE PD SOFTWARE LIBRARIES, IT IS OBVIOUS THERE IS A BIG HUNGER OUT THERE FOR ADAM SOFTWARE. WE HAVE ADDED THE SECOND BASIC VOLUME AND ARE UP TO SEVEN VOLUMES FOR CPM 2.2 PROGRAMS. WE'RE WORKING HARD TO GET THESE PROGRAMS OUT TO YOU - GETTING FROM 100K TO 150K OF PROGRAMS FOR \$6.00 IS A REAL BARGAIN. AS MANY OF YOU HAVE FOUND OUT, IT CAN COST YOU ALOT MORE MONEY TO OBTAIN THESE PROGRAMS OFF OF COMPU SERVE THEN TO GET THEM FROM THE PD LIBRARY. PLEASE CONTINUE TO SEND YOUR PROGRAMS IN TO EXPAND THE LIBRARY FOR EVERYONE'S BENEFIT. PLEASE NOTE THAT YOU NEED TO READ THE DOC FILES ON THE CPM PROGRAMS BEFORE YOU ATTEMPT TO RUN THEM. I WOULD SUGGEST YOU PRINT THEM OUT FOR FUTURE REFERENCE. ALSO NOTE THAT THE CPM 2.2, BASIC, LOGO, UTILITIES, CALC, ETC. PD DDP'S ONLY CONTAIN INDIVIDUAL PROGRAMS - YOU NEED TO LOAD THE SPECIFIC SOURCE PROGRAM (BASIC, SMARTLOGO, ETC) AND THEN "GET" THE INDIVIDUAL PROGRAMS OFF OF THE PD DDP.

. SEE OUR REVIEW OF THE TRACTOR FEED IN THIS ISSUE.

. WE HAVE STARTED TO CARRY A LINE OF BOOKS FOR THE ADAM AND CPM THAT WILL HELP YOU GET THE MOST OUT OF YOUR SYSTEM. THESE ARE AVAILABLE FOR ABOUT 20% OFF THE BOOKSTORE RETAIL PRICE.

. NIAD IS WORKING WITH EVE ELECTRONICS TO REVIEW CPM COMMERCIAL SOFTWARE FOR THE ADAM AND DETERMINE WHAT MODIFICATIONS MAY BE REQUIRED TO CONFIGURE THEM FOR THE ADAM.

. VERSIONS OF THE SW\_BAS PROGRAM THAT INTERFACE BETWEEN THE SP-1 RS232 INTERFACE AND SPECIFIC PRINTERS ARE NOW AVAILABLE FOR THE PANASONIC, STAR, OKIDATA, EPSON AND OTHER PRINTERS. THESE SPECIAL PROGRAMS WILL ALLOW THE IMBEDDING OF CONTROL CHARACTERS IN YOUR SMARTWRITER FILES THAT WILL DIRECT YOUR PRINTER TO PERFORM SUCH FUNCTIONS AS UNDERLINE, BOLD, COMPRESSED, EXPANDED PRINT, ETC.

. WE HAVE FOUND A SOURCE FOR THE ADAM MONITOR CABLE AND HAVE PLENTY IN STOCK (COLECO IS OUT OF STOCK OF THESE ITEMS AND WILL NOT PRODUCE ANY MORE).

. WITH THE INTRODUCTION OF THE 64K MEMORY EXPANDER FROM EVE ELECTRONICS FOR \$79.95, I HAVE REDUCED THE PRICE OF THE 64K FROM COLECO TO \$ 99.95.

. I'VE ALSO REDUCED THE PRICE OF THE COLECO DISK DRIVE TO \$ 185.00.

### NIAD BASICS

. NEW MEMBERS SUBSCRIPTIONS ARE STARTED WITH THE LAST ISSUE PUBLISHED.

. BACK ISSUES OF THE NIAD NEWSLETTER ARE AVAILABLE FOR \$3.00 EACH AND I WOULD RECOMMEND YOU PURCHASE THEM FOR THE REVIEWS AND WORKSHOP INFORMATION.

. TELEPHONE CALL INS ARE TAKEN SATURDAY AM'S FROM 8:00 TO 11:00, CHICAGO TIME.

. REGARDING PRODUCT ORDERING -

SEND A MONEY ORDER OR CHARGECARD NUMBER IF YOU WANT TO EXPEDITE YOUR ORDER ON ALL FIRST TIME ORDERS (NOTE: ESTABLISHED MEMBERS MAY PAY BY CHECK WITHOUT THE 10 DAY DELAY).

IF YOU ORDER ITEMS THAT ARE SHOWN AS NOT YET AVAILABLE AT THE SAME TIME YOU ORDER OTHER ITEMS, YOU WILL BE CHARGED TWO SHIPPING CHARGES UNLESS YOU SPECIFY THAT I SHOULD HOLD YOUR ORDER UNTIL ALL ITEMS ARE AVAILABLE.

. IF YOU WANT ME TO SHIP TO A POST OFFICE BOX, INCLUDE THE SHIPPING CHARGE FOR US MAIL SINCE UPS DOES NOT SHIP TO PO BOXES.

. ALL SHIPMENTS TO CANADA AND HAWAII ARE CHARGED THE US MAIL 1ST CLASS RATE.

. PLEASE CALL ME BEFORE RETURNING ANY MERCHANDISE.

. IF I AM BACKORDERED ON AN ITEM THAT IS NOT SHOWN AS "NOT YET AVAILABLE", I WILL FILL THE REST OF YOUR ORDER AND SEND THE BACKORDERED ITEM WHEN RECEIVED (WITH NO ADDITIONAL SHIPPING CHARGE).

. IF YOU ARE HAVING TROUBLE RECEIVING YOUR NEWSLETTER VIA THIRD CLASS MAIL, YOU MAY UPGRADE TO 1ST CLASS DELIVERY BY SENDING IN \$ .50 FOR EACH MONTH REMAINING IN YOUR SUBSCRIPTION (EXPIRATION MONTH IS THE FIRST 4 NUMBERS OF YOUR MEMBERSHIP NUMBER ON YOUR MAILING LABEL).

## ADAM'S FUTURE

THE NUMEROUS COLECO ADAM OWNERS THOUGHT THE DEATH KNELL HAD RUNG ON JANUARY 2, 1985 WHEN COLECO ELECTRONICS ANNOUNCED THEY WERE DROPPING THE WELL CONCEIVED BUT POORLY MARKETED ADAM COMPUTER.

I AM HAPPY TO INFORM ALL ADAM OWNERS THAT QUITE TO THE CONTRARY, EIGHT MONTHS LATER, THE ADAM IS ALIVE, WELL AND GROWING DUE TO IT'S EXCELLENT PRICE VS. PERFORMANCE CHARACTERISTICS AND A GROWING NUMBER OF "ADAM COMMITTED" USER GROUPS AND THIRD PARTY HARDWARE AND SOFTWARE VENDORS.

COLECO LIMITED THE AMOUNT OF THIRD PARTY SOFTWARE THAT COULD BE DEVELOPED FOR THE ADAM BY ONLY RELEASING THE ADAM'S TECHNICAL INFORMATION UNDER STRICT CONTRACTUAL TERMS. SINCE COLECO DROPPED THE ADAM, THIS INFORMATION HAS BECOME MORE READILY AVAILABLE AND THE THIRD PARTY SOFTWARE IS NOW BEING PRODUCED AT A STEADY PACE.

PERHAPS THE MOST SIGNIFICANT SOFTWARE INTRODUCTION FOR THE ADAM HAS BEEN CPM 2.2, WHICH COLECO RELEASED AT THE END OF 1984. CPM IS THE MOST POPULAR 8 BIT COMPUTER OPERATING SYSTEM AND THE AVAILABILITY FOR THE ADAM MEANS THAT A WEALTH OF PUBLIC DOMAIN AND COMMERCIALY DEVELOPED SOFTWARE CAN NOW BE RUN ON THE ADAM. MY PERSONAL OPINION IS THAT IF CPM 2.2 HAD BEEN RELEASED IN EARLY 1984, COLECO MAY NOT HAVE HAD TO DROP THE ADAM. OUR USER GROUP CURRENTLY HAS OVER 1 MEGABYTE (1,000,000 BYTES) OF CPM PUBLIC DOMAIN SOFTWARE AVAILABLE THROUGH OUR SOFTWARE LIBRARY PROGRAM WITH ADDITIONAL PROGRAMS BEING ADDED WEEKLY. POPULAR COMMERCIAL CPM PROGRAMS, SUCH AS WORDSTAR, DBASE II, MITE, NEVADA BASIC AND MANY OTHERS ARE BEING CONVERTED TO RUN ON THE ADAM ! THERE ARE OVER 15 COMPANIES ACTIVELY PRODUCING SOFTWARE FOR THE ADAM. SOFTWARE DEVELOPMENT IS WHAT KEEPS A COMPUTER ALIVE.

AND NEW ADAM SOFTWARE IS BEING PRODUCED AT AN EXCELLENT PACE.

THE MAJOR PROBLEM OF A LACK OF SOFTWARE FOR THE ADAM HAS FINALLY BEEN SOLVED !

ADDITIONALLY, EVE ELECTRONICS OF FRAMINGHAM, MASSACHUSETTS HAS COME TO THE RESCUE FROM A HARDWARE STANDPOINT WITH THE RELEASE OF A LINE OF PERIPHERALS FOR THE ADAM. THE EVE SP-1 IS A RS232/ PARALLEL INTERFACE WHICH ALLOWS THE ADAM TO USE ANY OF THE HIGH SPEED DOT MATRIX PRINTERS CURRENTLY ON THE MARKET. THE SLOWNESS OF ADAM'S LETTER QUALITY PRINTER HAS BEEN A PROBLEM WHICH HAS NOW BEEN CORRECTED BY THE SP-1. ADAM OWNERS CAN NOW HAVE THE ADVANTAGE OF BOTH A LETTER QUALITY PRINTER AND A HIGH SPEED DOT MATRIX PRINTER CONNECTED TO THEIR SYSTEMS. THE SP-1 INTERFACE CAN ALSO BE USED TO CONNECT THE ADAM TO ANY STANDARD RS232 DEVICE SUCH AS A MODEM, VOICE SYNTHESIZER, HOME MONITORING DEVICES, ETC.

EVE HAS ALSO DEVELOPED AN 80 COLUMN VIDEO CARD FOR THE ADAM WHICH WILL PROVIDE THE DISPLAY REQUIRED FOR SOME SOFTWARE PRODUCTS AND INCREASE THE UTILITY OF THE WORD PROCESSING PACKAGES.

THESE TWO PRODUCTS FOR THE ADAM (EVE IS ALSO WORKING ON A DISK CONTROLLER AND VOICE SYNTHESIZER) HAVE BROUGHT IT FROM A SPECIALIZED, STANDALONE SYSTEM TO AN INDUSTRY STANDARD COMPUTER THAT CAN UTILIZE READILY AVAILABLE SOFTWARE AND HARDWARE PERIPHERALS.

I STARTED THE NIAD USERS GROUP IN LATE 1984 BECAUSE I WAS COMMITTED TO THE ADAM DUE TO ITS CAPABILITIES AND VERSATILITY. I KNEW THAT MANY ADAM OWNERS WERE NOT USING THE ADAM TO ITS FULL POTENTIAL DUE TO A LACK OF INFORMATION AND INSTRUCTION. THERE ARE MANY GOOD ADAM USER GROUPS THAT ARE AIDING ADAM OWNERS TO FIND AND USE THE SOFTWARE AND HARDWARE PRODUCTS THAT ARE AVAILABLE.

## UPDATES

### HARDWARE

. EVE ELECTRONICS HAS JUST RELEASED A 64K MEMORY EXPANDER THAT IS IDENTICAL TO THE ONE MANUFACTURED BY COLECO, BUT SELLS FOR ONLY \$ 79.95 ! THIS IS A GREAT PRICE AND I WOULD RECOMMEND ANY SERIOUS ADAM USER GET ONE, ESPECIALLY IF YOU ARE INTO OR ARE PLANNING TO GET INTO CPM 2.2 WHERE I FIND IT ALMOST A NECESSITY. UNDER CPM IT IS A RAM DISK (DEVICE M:) AND I LOAD ALL MY UTILITY PROGRAMS OUT TO IT WHEN I BOOT UP SO I DON'T HAVE TO HAVE THEM ON THE DISKS I AM WORKING WITH.

. EVE IS COMPLETING THE 80 COLUMN VIDEO BOARD FOR AN OCTOBER / NOVEMBER AVAILABILITY. THIS BOARD WILL ALSO INCLUDE A INDEPENDENT POWER SUPPLY FOR THE ADAM (YOUR ADAM PRINTER CAN BE DETACHED IF YOU LIKE) AND A THREE SLOT MOTHER BOARD FOR THE ATTACHMENT OF OTHER EVE

PERIPHERALS SUCH AS THE SP-1, ETC. A LIGHT PEN PORT WILL ALSO BE INCLUDED. YOU WILL BE ABLE TO SWITCH BETWEEN THE NORMAL ADAM DISPLAY AND THE 80 COLUMN DISPLAY UNDER SOFTWARE CONTROL FROM BOTH SMARTBASIC AND CPM. THE 80 COLUMN WILL RETAIL FOR APPROXIMATELY \$ 250.00.

. THE ADAM VOICE SYNTHESIZER & REAL TIME CLOCK WILL BE READY FOR SHIPMENT IN EARLY SEPTEMBER FOR \$ 89.95. SMARTBASIC AND CPM SOFTWARE WILL BE INCLUDED TO OUTPUT PHONEMES FROM YOUR PROGRAMS. A "VOICE LIBRARY" WILL ALSO BE AVAILABLE THAT WILL RESIDE ON THE 64K EXPANDER. A CLOCK WITH BATTERY BACK UP WILL ALSO BE INCLUDED ON THE CIRCUIT BOARD WITH SOFTWARE THAT WILL PROVIDE TIME DISPLAY ON THE ADAM MONITOR AND THE ABILITY TO GET THE CURRENT TIME OR ELAPSED TIME FROM YOUR PROGRAMS.

NOTE: YOU WILL NEED A MULTI- UNIT ADAPTER CABLE TO CONNECT BOTH THE SP-1 AND VOICE SYNTHESIZER TO THE ADAM - THIS IS AVAILABLE FOR \$ 34.95.

### SOFTWARE

. COLECO NOW SAYS SEPTEMBER FOR JEOPARDY, 2010 AND BEST OF ELECTRONIC ARTS: PINBALL CONSTRUCTION SET AND HARD HAT MACK.

. NIAD IS STILL REVIEWING COMMERCIAL CPM SOFTWARE FOR THE ADAM (SEE REVIEWS).

. THE NIAD PUBLIC DOMAIN LIBRARY IS GROWING - SEE DETAILS THIS ISSUE.

. EVE IS DEVELOPING SOFTWARE TO TAILOR THE SW\_BAS PROGRAM THAT COMES WITH THE SP-1 TO SPECIFIC PRINTERS AND ALLOW THE USE OF THE SPECIAL FUNCTIONS OF THOSE PRINTERS. NIAD NOW HAS VERSIONS FOR PANASONIC, STAR, EPSON AND OKIDATA WITH MORE COMING - SEE PRODUCT LIST.

. WE NOW HAVE A BASIC INTERPRETER FOR CPM 2.2 - SEE OUR REVIEW OF NEVADA BASIC IN THIS ISSUE.

. E & T SOFTWARE HAS DEVELOPED AN ADDRESS MAINTENANCE AND PRINTING PROGRAM UNDER BASIC THAT PROVIDES ENVELOPE AND MAILING LABEL PRINTING EITHER INDIVIDUALLY OR CONTINUOUSLY - SEE REVIEW NEXT ISSUE.

. REEDY SOFTWARE IS A NEW ADAM DEVELOPER. SEE OUR REVIEW OF THEIR SMARTTYPE IN THIS ISSUE AND THEIR BASIC LIBRARY IN THE NEXT ISSUE.

. EVE IS LOOKING AT PROVIDING SP-1 ACCESS FROM SMARTFILER AND/OR ADAMCALC.

# UTILITIES WORKSHOP

## SPRITES PART 2 BY W. MOTEL

LAST MONTH, WE STARTED OUR EXPLANATION OF SPRITES AND MY SPRITE PROGRAM (EXCERPT FROM UTILDUMP). TO RECAP:

- WE HAVE 8X8 SPRITES (1 GROUP OF 8 BYTES TO DESCRIBE THE PATTERN) OR 16X16 SPRITES (4 GROUPS OF 8 BYTES).
- EACH SPRITE CAN BE DISPLAYED IN NORMAL OR DOUBLE MAGNIFICATION.
- BESIDES THE SPRITE DESCRIPTION, WE NEED 4 BYTES TO DESCRIBE THE ATTRIBUTES OF EACH SPRITE.
- THE ATTRIBUTE BYTES ARE UP/DOWN LOCATION, LEFT/RIGHT LOCATION, DISPLACEMENT (SPRITE INDICATOR), AND COLOR CODE.
- THE DISPLACEMENT IS THE NUMBER OF 8 BYTE GROUPS TO GO INTO THE SPRITE PATTERN TABLE. 8X8 SPRITES USE ONLY 1 GROUP OF 8 BYTES, THEREFORE THE DISPLACEMENT IS THE ACTUAL SPRITE NUMBER. THE 16X16 SPRITES USE 4 GROUPS OF 8 BYTES, THEREFORE THE DISPLACEMENT IS THE ACTUAL SPRITE NUMBER \* 4.
- SPRITE 0 IS THE FIRST (LOWEST) SPRITE NUMBER AND HAS THE HIGHEST PRIORITY. THE LOWER THE SPRITE NUMBER, THE HIGHER THE PRIORITY.
- ONLY 4 SPRITES CAN BE DISPLAYED AT ONE TIME ON THE SAME HORIZONTAL (LEFT TO RIGHT) PLANE. THE SPRITE NUMBERS DETERMINE THE PRIORITY AND THEREFORE WHICH ARE DISPLAYED. SPRITE 0, IF ON THE VIEWABLE PORTION OF THE SCREEN, WILL ALWAYS BE DISPLAYED.
- YOU CAN DESCRIBE A MAXIMUM OF 32 SPRITES.
- THE SPRITES CAN BE WITH TEXT, LORES, OR HIRES.

CONTINUING WITH THE PROGRAM, WE WILL REUSE THE NORMAL BASIC TAPE BUFFER/CATALOG AREA AS FOLLOWS:

- 55808-56063 (256 BYTES) SPRITE PATTERN TABLE  
8 SPRITES (# 0 TO 7), EACH 4 GROUPS OF 8 BYTES.
- 56064-56095 (32 BYTES) SPRITE ATTRIBUTE DATA  
8 SPRITES EACH 4 BYTES

### MACHINE LANGUAGE

```
56100 SETUP/WRITE TO SPRITE PATTERN TABLE
56123 WRITE TO SPRITE ATTRIBUTE TABLE
56139 RETURN
DETAIL OF MACHINE LANGUAGE
56100 14,226 LD C,226 (16X16 No MAGNIFICATION)
      227 FOR 16X16 WITH MAGNIFY
      224 FOR 8X8 No MAG, 225 FOR 8X8 WITH MAG.
56102 6,1 LD B,1 (VDP REG 1)
56104 205,32,253 CALL FD20 (WRITE VDP)
56107 58,24,252 LD A,(FC18) (FC18) HAS VALUE OF 1
      1 DENOTES TABLE 1 SPRITE PATTERN)
56110 253,33,32,0 LD IY,32 (# ENTRIES)
      8 SPRITES * 4 (4 FOR 16X16 SPRITE)
56114 33,0,218 LD HL,55808 (PATTERN BUFFER ADDR)
56117 17,0,0 LD DE,0 (STARTING ENTRY NUMBER)
56120 205,44,253 CALL FD2C (PUT VRAM)
```

```
56123 58,23,252 LD A,(FC17) (FC17) HAS VALUE OF 0
      0 DENOTES TABLE 0 SPRITE ATTRIBUTE)
56126 253,33,8,0 LD IY,8 (NUMBER OF ENTRIES)
56130 33,0,219 LD HL,56064 (ATTRIB BUFFER ADDR)
56133 17,0,0 LD DE,0 (START ENTRY NUMBER)
56136 205,44,253 CALL FD2C (PUT VRAM)
56139 201 RETURN
```

```
SP(0) POINTS TO START OF SPRITE PATTERN DATA
SP(1) POINTS TO START OF SPRITE ATTRIBUTE DATA
SP(2) POINTS TO START OF SPRITE PATTERN GENER ML
      AND GOES THRU THE SPRITE ATTRIB GENER ML)
SP(3) POINTS TO START OF SPRITE ATTRIB GENER ML
```

GIVEN THAT EACH PIECE OF SPRITE ATTRIBUTE DATA IS 4 BYTES, WE CAN ADDRESS THE START OF THESE 4 BYTES AS  $SP(1) + (X*4)$  WHERE X IS THE SPRITE NUMBER 0-7. THIS POINTS TO THE FIRST BYTE OF THE SPRITE ATTRIBUTE, WHICH IS THE UP/DOWN LOCATION. THE SECOND BYTE (LEFT/RIGHT) IS  $SP(1)+(X*4)+1$ . THE COLOR VALUE (FOURTH BYTE) IS  $SP(1)+(X*4)+3$ .

THIS WILL EXPLAIN HOW THE SAME ATTRIBUTE VALUES ARE CHANGED FOR EACH SPRITE BY THE FOR/NEXT LOOPS ALTERING X.

LINE 9130 - 9139 CAUSE SPRITES 0-3 (THE D-U-M-P) AT THE RIGHT TO DROP DOWN DIAGONALLY. THE UP/DOWN LOCATION IS INCREASED BY  $25*(4-X) +$  THE CURRENT POSITION.

LINE 9140 - 9150 CAUSE THE TWINKLING COLOR EFFECT.

I HOPE THIS SOMEWHAT EXPLAINS SPRITE AND GIVES YOU A STARTING POINT TO TRY THEM ON YOUR OWN.

### HELLO BY D. ZIMMERMAN

THIS IS AN ADAPTION OF BTCOLOR THAT I USE AS A HELLO TO SET THE COLORS AS SOON AS BASIC IS BOOTED. I ADDED AN OPTION THAT TELLS THE USER WHAT THE ACTUAL POKE STATEMENT IS FOR A PARTICULAR SCREEN.

```
100REM BY D.ZIMMERMAN BASED ON W.MOTEL'S BTCOLOR
(NIA D - MARCH 1985)
110 A=4: B=1: C=10: D=15: E=6:GOSUB 570
120HOME
130FLASH: ? SPC(31):NORMAL
140 ? TAB(10); :INVERSE: ? " COLORS ": ?
150NORMAL
160 ? " 0-TRANSPARENT 8-MED RED"
170 ? " 1-BLACK 9-LT RED"
180 ? " 2-MED GREEN 10-DK YELLOW"
190 ? " 3-LT GREEN 11-LT YELLOW"
200 ? " 4-DK BLUE 12-DK GREEN"
210 ? " 5-LT BLUE 13-MAGENTA"
220 ? " 6-DK RED 14-GRAY"
230 ? " 7-CYAN 15-WHITE": ?
240?: ?
```

```

250? "1) BACKDROP COLOR="; :INVERSE:? " "; A; "
":NORMA L
260? "2) SCREEN TEXT COLOR="; :INVERSE:? " "; B; "
":NO RMAL
270? "3) SCREEN BACKGND COLOR="; :INVERSE:? " "; C; "
":NORMAL
280? "4) INVERSE TEXT COLOR="; :INVERSE:? " "; D; "
":NORMAL
290? "5) INVERSE BKGROUND COLOR="; :INVERSE:? " "; E;
" ":NORMAL
300? "6) SHOW POKE #S FOR THIS SCREEN";
310? "7) RETURN TO SMARTBASIC COLORS"
320? "8) LEAVE COLORS LIKE THIS "
330VTAB 24:HTAB 9:FLASH:? " SELECT NUMBER "; :NORMAL
340GET z$:IF z$=CHR$(3) THEN END
350HTAB 1:? SPC(30);
360ONERR GOTO 740
370 z=VAL(z$)
380IF z<1 OR z>8 THEN GOTO 740
390ON z GOTO 410, 440, 470, 500, 530, 630, 600, 560
400GOTO 560
410HTAB (3):VTAB (13)
420FLASH:INPUT " SELECT BACKDROP COLOR="; A:NORMAL:?
430GOSUB 570:GOTO 120
440HTAB (3):VTAB (13)
450FLASH:INPUT " SELECT SCREENTEXT COLOR="; B:NORMAL:?
460GOSUB 570:GOTO 120
470HTAB (1):VTAB (13)
480FLASH:INPUT " SELECT SCREEN BACKGND COLOR=";
C:NORMAL:?
490GOSUB 570:GOTO 120
500HTAB (1):VTAB (13)
510FLASH:INPUT " SELECT INVERSE TEXT COLOR=";
D:NORMAL:?
520GOSUB 570:GOTO 120
530HTAB (1):VTAB (13)
540FLASH:INPUT " SELECT INVERSE BACKGRD COLOR=";
E:NORMAL:?
550GOSUB 570:GOTO 120
560HOME:NEW
570IF B=C THEN GOTO 780
580 T=INT(B*16)+C: V=INT(D*16)+E
590POKE 17059, A:POKE 17115, T:POKE 17126,
V:TEXT:RETURN
600REM SET COLORS TO BASIC COLORS
610POKE 17059, 0:POKE 17115, 241:POKE 17126, 31:TEXT
620NEW
630REM PRINT CURRENT POKE NUMBERS
640INVERSE:HOME:VTAB 2
650? " THE POKE STATMENT FOR THIS SCREEN IS THIS:
": SPC(14):?:?:NORMAL
660INVERSE:?:? " <LINE #>";
670NORMAL:? " POKE 17059,"; A; " : "; "POKE 17115,";
T;
680? " : "; " POKE 17126,"; V; " : "; "TEXT"
683 IF XY=1 THEN XY=0:PR#0
685 PRINT:PRINT:HTAB 2:INVERSE:PRINT " PRESS <PRINT>
FOR HARDCOPY ": NORMAL
690?:?:?
700INVERSE:? SPC(62):NORMAL
710VTAB 23:FLASH:? " PRESS <RETURN> TO CONTINUE ";
:NORMAL

```

```

720GET z$:IF z$=CHR$(3) THEN END
725 IF z$=CHR$(149) OR z$=CHR$(157) THEN XY=1:PR#1:
GOTO 670
730GOTO 120
740VTAB 24:HTAB 1
750FLASH:? " *** ERROR *** - ENTER AGAIN "; :NORMAL
760FOR I=1 TO 4000:NEXT
770RUN
780HOME:VTAB 12:? " TEXT AND SCREEN NUMBERS "
790? " MUST BE DIFFERENT OR THE"
800? " TEXT CAN NOT BE SEEN"
810FOR I=1 TO 4000:NEXT
820RUN

```

#### SAVING LO MEMORY BY W. MOTEL

BACKGROUND: THE ADAM COMPUTER HAS 64K (65,536) BYTES OF MEMORY THAT CAN BE USED BY PROGRAMS AND TO TEMPORARILY STORE DATA, UNTIL YOU TURN OFF THE COMPUTER. WHEN YOU LOAD THE SMARTBASIC TAPE, THE ACTUAL SMARTBASIC INTERPRETER PROGRAM (THIS IS THE ONE THAT ACCEPTS AND PROCESSES ALL YOUR COMMANDS) IS PLACED IN MEMORY BETWEEN ADDRESSES 256 AND 27407. THE AVAILABLE MEMORY ABOVE ADDRESS 27407 (KNOWN AS LOMEM) AND BELOW ADDRESS 53632 (HIMEM) IS AVAILABLE FOR STORING THE BASIC PROGRAM THAT YOU MAY WRITE OR LOAD. THE AREA ABOVE HIMEM IS PRIMARILY OCCUPIED BY THE ADAM'S OPERATING SYSTEM. SMARTBASIC ALLOWS YOU TO REDUCE THE HIMEM LIMIT AND/OR INCREASE THE LOMEM LIMIT. THESE CHANGES REDUCE THE AMOUNT OF MEMORY AVAILABLE FOR YOUR BASIC PROGRAMS AND HENCE THE SIZE OF THE PROGRAMS YOU CAN WRITE.

WHEN SOMEONE USES A MACHINE LANGUAGE ROUTINE, THEY USUALLY RESERVE A PORTION OF MEMORY. THIS CAN BE DONE BY THE FOLLOWING: LOMEM = 29000 THIS SETS LO MEMORY TO 29000 WHICH, IN ESSENCE, SETS ASIDE 27407 TO 28999 FOR YOU TO POKE YOUR MACHINE LANGUAGE OR WHATEVER. WHILE THIS WORKS, IT ALSO MEANS YOU NO LONGER HAVE THOSE 1593 BYTES FOR YOUR BASIC PROGRAM. FOR VERY LARGE PROGRAMS, THIS CAN BE CRITICAL. ANOTHER THING WE KNOW, LOCATIONS 54272 - 55295 (1024 BYTES) IS USED BY BASIC AS A CATALOG BUFFER AREA. LOCATIONS 55296 - 56319 (1024 BYTES) ARE USED BY BASIC AS AN INPUT/OUTPUT BUFFER AREA. AS LONG AS YOUR PROGRAM IS EXECUTING AND DOES NOT DO ANY FILE INPUT/OUTPUT, THESE AREAS ARE NOT USED. THESE AREAS ARE NOT AFFECTED BY NORMAL PRINTER OUTPUT OR SCREEN I/O, ONLY TAPE/DISK FILE I/O. ANOTHER THING WE KNOW, WE CANNOT POKE ABOVE LOCATION 54160. THEREFORE, EVEN IF WE WANTED TO USE THESE LOCATIONS WE CAN'T POKE INTO THEM, ONLY LOAD INTO THEM.

THERE IS A SOLUTION. LOCATIONS 16149 AND 16150 CONTAIN THE LIMIT FOR POKE ADDRESSES. NORMALLY THEY CONTAIN (IN HEX) 90 D3. IN DECIMAL, THIS IS 144 211. THIS CALCULATES TO ADDRESS  $(211 * 256) + 54 = 54160$ . YOU CAN CHANGE IT BY POKING 16149 & 16150 WITH NEW VALUES.

POKE 16149,255

POKE 16150,255

THIS SETS THE LIMIT TO  $(255 * 256) + 255 = 65535$ . THIS MEANS YOU CAN POKE INTO ANY ADDRESS. BE CAREFUL YOU DON'T POKE OVER AND DESTROY THE OPERATING SYSTEM OR YOU WILL HAVE TO REBOOT BASIC.

WHAT DOES THIS MEAN?

1. IF YOU HAVE A BASIC PROGRAM THAT HAS MACHINE LANGUAGE ROUTINES/AREAS AND THE TOTAL NUMBER OF BYTES IS LESS THAN 2049.

2. YOUR BASIC PROGRAM DOES NOT USE TAPE/DISK FILE I/O (BY WAY OF BASIC READ/PRINT COMMAND). YOU CAN ELIMINATE ANY LOMEM SETTING AND STORE THE MACHINE LANGUAGE IN LOCATIONS 54272 - 56319. THIS WILL GIVE YOU 2048 BYTES THAT DO NOT HAVE TO BE TAKEN FROM YOUR BASIC PROGRAM AREA. IF YOUR PROGRAM DOES UTILIZE TAPE/DISK I/O, THEN YOU WILL HAVE TO UTILIZE THE LOMEM METHOD OF RESERVING STORAGE. UTILDUMP USES THIS METHOD AND WORKS FINE. ALTHOUGH I HAVE TAPE/DISK I/O, I DO IT VIA MACHINE LANGUAGE ROUTINES THAT ACCESS MY OWN BUFFER AREAS.

## SMARTBASIC WORKSHOP

### THE ADAM PROGRAMMER'S TOOLBOX

BY BOB LENNES

THIS MONTH: SOME MORE INTERESTING SMARTBASIC TRICKS, SOME COMMANDS IN SMARTBASIC WITH NO KNOWN FUNCTION, AND A MENU PROGRAM THAT ALLOWS YOU TO SELECT AND RUN THE PROGRAM YOU WANT.

### COPYING SMARTBASIC TO DISK

IN LAST MONTH'S ISSUE, I TALKED ABOUT USING THE SMARTBASIC MODIFIER PROGRAM TO CHANGE THE INITIAL DEFAULT DRIVE OF SMARTBASIC WHEN IT FIRSTS LOADS SO THAT IF YOU HAVE SMARTBASIC ON DISK, IT WILL LOOK FOR THE HELLO FILE ON THE DISK, INSTEAD OF THE TAPE DRIVE. SOME OF YOU PROBABLY TRIED CHANGING THE LOCATION 16821. THAT IS THE CURRENT DRIVE, HOWEVER, AND NOT THE STARTING DRIVE. THE ADDRESS OF THE STARTING DRIVE, WHICH I INADVERTENTLY FORGOT TO INCLUDE, IS 16641, AND IT'S ORIGINALLY SET FOR TAPE ONE (8), BUT IT CAN BE CHANGED TO 4 (FOR DISK 1).

### ONE MORE NOTE ABOUT THE BASIC MODIFIER PROGRAM

SOME OF THE ADDRESSES AND THEIR VALUES GIVEN IN THIS COLUMN HAVE BEEN DESCRIBED AS CURRENT VALUES (SUCH AS SCREEN DIMENSIONS, DRIVE, ETC.). SOME PEOPLE MAY HAVE TRIED TO CHANGE THE VALUES OF THESE CURRENT VALUE LOCATIONS WITH THE BASIC MODIFIER PROGRAM. YOU WOULD GET ALL DIFFERENT KINDS OF DEFAULT VALUES FOR THESE ADDRESSES SINCE THESE LOCATIONS SERVE ONLY AS A 'STORAGE PLACE' FOR THE CURRENT VALUES WHICH ARE CONSTANTLY RECALLED BY SMARTBASIC. WHEN SMARTBASIC IS FIRST LOADED OR CERTAIN COMMANDS OR CALLS ARE USED, ADAM STORES THE STARTING VALUES FROM OTHER LOCATIONS IN SMARTBASIC WHICH CONTAIN THE ACTUAL 'DEFAULT' OR STARTING VALUES INTO THE RESPECTIVE CURRENT VALUE ADDRESSES. AN EXAMPLE OF THIS IS THE DEFAULT VALUES FOR THE SCREEN MARGINS. THESE ARE LOADED INTO THE APPROPRIATE CURRENT VALUE ADDRESSES FROM THE STARTING VALUE ADDRESSES AS SHOWN:

MEANING OF ADDRESSES	STARTING VAL.	CURRENT VAL.
LEFT MARGIN	17202	16956
NO. OF COLUMNS	17199	
RIGHT MARGIN		16957
TOP MARGIN	17201	16958
NO. OF LINES	17198	
BOTTOM MARGIN		16959

NOTES: THESE STARTING VALUE LOCATIONS ARE FOR THE TEXT MODE ONLY. THERE ARE DIFFERENT STARTING VALUES FOR THE GRAPHIC MODES. TO DETERMINE THE VALUE FOR THE CURRENT RIGHT MARGIN LOCATION, ADAM ADDS THE STARTING VALUE FOR THE NO. OF COLUMNS TO THE STARTING VALUE FOR THE LEFT MARGIN. TO DETERMINE THE VALUE FOR THE CURRENT BOTTOM MARGIN LOCATION, ADAM ADDS THE STARTING VALUE FOR THE NO. OF LINES TO THE STARTING VALUE FOR THE TOP MARGIN.

IF YOU HAVE THE PROBLEM ON YOUR T.V. WITH YOUR FIRST VERTICAL COLUMN BEING CUT OFF (A NOT UNCOMMON PROBLEM WITH OLDER SETS), YOU CAN USE THE BASIC MODIFIER PROGRAM TO CHANGE THE VALUE OF THE ADDRESS 17202 FROM 1 TO 2, AND ALSO CHANGE THE VALUE OF LOCATION 17199 FROM 30 TO 29.

### THE REM PROBLEM

IF YOU HAVE DATA OR REM STATEMENTS IN YOUR BASIC PROGRAMS, THEN EVERY TIME YOU LOAD AND RESAVE THE PROGRAM, SMARTBASIC ADDS AN EXTRA SPACE AFTER THESE COMMANDS. THIS USES EXTRA MEMORY AND SCREEN SPACE AND CAN REALLY AGGRAVATE YOU. AS FAR AS I KNOW, THERE IS NO WAY TO SOLVE THIS PROBLEM. IF ANYONE DOES HAVE A SOLUTION, PLEASE TELL US! YOU CAN SAVE A LITTLE SPACE IN A REM STATEMENT BY:

INSTEAD OF TYPING: 10 REM THIS IS A REMARK

YOU CAN ONLY TYPE: 10 &THIS IS A REMARK

YOU THEN USE UP THREE LESS SPACES OF YOUR MEMORY AND YOUR SCREEN!

## THE SMARTBASIC PROMPT

EVERYTIME SMARTBASIC IS READY TO ACCEPT A COMMAND, YOU SEE THE BRACKET ('J') PROMPT. YOU CAN CHANGE IT TO A GREATER SIGN ('>') BY TYPING THE COMMAND 'INT' AND CHANGE IT BACK TO A BRACKET BY TYPING THE COMMAND 'FP'. THESE COMMANDS SEEM TO DO NOTHING EXCEPT CHANGE THE PROMPT AND ARE PROBABLY MEANT ONLY FOR COMPATIBILITY WITH APPLE BASIC.

YOU CAN ALSO CHANGE IT TO ANY CHARACTER BY POKING THE CHARACTER'S ASCII VALUE INTO THE LOCATION 1146. (IT'S DEFAULT VALUE IS 93 AND IT WILL CHANGE BACK TO 93 WHENEVER THE FP COMMAND IS USED.

## THE UNDOCUMENTED SMARTBASIC RESERVED WORDS

A RESERVED WORD IS A WORD THAT CANNOT BE USED AS VARIABLE NAME BECAUSE IT IS A COMMAND. THERE ARE SOME COMMANDS IN SMARTBASIC THAT DON'T SEEM TO DO ANYTHING.

SHLOAD- THIS COMMAND IS AN APPLE BASIC COMMAND USED TO LOAD A SHAPE TABLE FROM TAPE. IT DOESN'T SEEM TO HAVE ANY FUNCTION IN SMARTBASIC, THOUGH.

RECALL N- WHERE 'N' CAN BE ANY LEGAL VARIABLE NAME, NOT JUST 'N'. THIS ALSO IS AN APPLE BASIC COMMAND. IT IS SUPPOSED TO READ THE PREVIOUS DATA JUST READ BY THE READ COMMAND (WHICH READS DATA FOLLOWING THE DATA COMMAND). TRYING TO USE IT IN SMARTBASIC, YOU GET AN OUT OF DATA ERROR MESSAGE.

STORE N- 'N' CAN ALSO BE ANY LEGAL VARIABLE, JUST AS IN THE RECALL COMMAND. THIS ALSO IS AN APPLE BASIC COMMAND AND IT ALSO HAS NO FUNCTION IN SMARTBASIC.

BREAK, NOBREAK- THESE TWO COMMANDS ARE NOT FOUND IN APPLE BASIC AND I CANNOT FIGURE OUT WHAT THEY DO OR WHAT THEY WERE MEANT TO DO.

IF ANYONE FINDS ANY FUNCTION OF ANY OF THE ABOVE COMMANDS, PLEASE TELL US. I THINK, HOWEVER, THAT THESE ARE COMMANDS THAT EITHER THE MAKERS, LAZER MICROSYSTEMS, NEVER DEBUGGED AND JUST GAVE UP ON, OR THEY WERE JUST 'PUT THERE' FOR COMPATIBILITY WITH APPLE BASIC.

## THE MENU-SELECT PROGRAM

YOU CAN USE THIS PROGRAM AS AN OPTION IN YOUR HELLO PROGRAM. IT PRINTS OUT ALL SMARTBASIC FILES AND ALLOWS YOU TO SELECT THEM WITH THE ARROW KEYS, SIMILAR TO THE WAY YOU SELECT A FILE IN SMARTWRITER.

```
10& MENU-SELECT
20& BY BOB LENNES
30LOMEM :30025
40FOR A=28900 TO 28920:READ V:POKE A, V:NEXT
45DATA
205,138,252,62,8,33,72,113,1,0,0,17,1,0,205,243,252,50,
71,113,201
```

```
50POKE 16150, 255:POKE 16953, 0: D%=PEEK(16821)
60POKE 17115, 241:POKE 17126, 20:TEXT:POKE 17126, 15
70INVERSE:HTAB 5:? " MENU BY BOB LENNES ":NORMAL
100CLEAR:DIM FL$(35)
110 BK$=CHR$(8)
120 S%=2: O$(1)="DRIVE A (TAPE)": O$(2)="DRIVE C
(DISK)":GOSUB 900: P=P-48
130IF P=1 THEN D%=8
140IF P=2 THEN D%=4
150VTAB 2:? CHR$(24); " ONE MOMENT.. CATALOGING ": :IF
D%=8 THEN ? "TAPE"
170IF D%=4 THEN ? "DISK"
180POKE 28904, D%:POKE 28999, 0:CALL 28900
190IF PEEK(28999)=22 THEN ? CHR$(7); " DRIVE ERROR...
PLEASE RETRY.":FOR T=1 TO 1400:NEXT:RUN
200HOME:INVERSE:HTAB 2:? " MENU SELECT - USE ARROW
KEYS":NORMAL
210VTAB 2:HTAB 6:? "DIRECTORY":; :HTAB 17
220FOR N=29000 TO 29011
230IF PEEK(N)=3 THEN N=55307:GOTO 250
240? CHR$(PEEK(N));
250NEXT:VTAB 5:HTAB 2:? "ONE MOMENT..":VTAB 5
260FOR I=29000 TO 30000 STEP 26
2
280FOR T=0 TO 10:IF PEEK(T+I)=3 THEN T=10:GOTO 300
290 LT=PEEK(T+I): FL$(NUM)=FL$(NUM)+CHR$(LT)
300NEXT T: NUM=NUM+1
310NEXT I
315?:VTAB 4
320FOR I=0 TO NUM-1 STEP 2
325HTAB 4:? LEFT$(FL$(I), LEN(FL$(I))-1); :HTAB 19
330 F$=FL$(I+1):IF F$<>" " THEN ? LEFT$(F$, LEN(F$)-1)
335NEXT
340 S%=2: O$(1)="RUN FILE": O$(2)="SELECT DRIVE":
NO=1:GOSUB 900: NO=0
345 H=3: V=4:VTAB V:HTAB H:? CHR$(27);
350 P=PEEK(64885):IF P=0 THEN 350
360POKE 64885, 0
370IF P>159 THEN 400
375GOSUB 972
380IF P=49 THEN 600
390IF P=50 THEN VTAB V:HTAB H:? " ": :GOTO 100
400IF P=162 AND V<3+NUM/2 THEN HTAB H:? " ": BK$: :
V=V+1:VTAB V:? CHR$(27);
410IF P=160 AND V>4 THEN HTAB H:? " ": BK$: :
V=V-1:VTAB V:? CHR$(27);
420IF P=163 AND H=18 THEN HTAB H:? " ": : H=3:HTAB H:?
CHR$(27);
430IF P=161 AND H=3 THEN HTAB H:? " ": : H=18:HTAB H:?
CHR$(27);
490GOTO 350
600REM RUN FILE
610 X=H/18: Y=(V-4)*2:VTAB 22:? CHR$(24);
620IF FL$(X+Y)="" THEN ? CHR$(7); " CANNOT ACCESS
THIS.":GOTO 680
630IF RIGHT$(FL$(X+Y), 1)<>"A" THEN ? CHR$(7); " THIS
IS AN " : RIGHT$(FL$(X+Y), 1); " FILE.":GOTO 680
640ONERR GOTO 700
650POKE 16821, D%:? CHR$(4); "RUN ": LEFT$(FL$(X+Y),
LEN(FL$(X+Y))-1)
660END
680? " PLEASE SELECT ANOTHER.":FOR T=1 TO
1200:NEXT:VTAB 22:? CHR$(24)
```

```

690VTAB v:HTAB H:? " "; :GOTO 340
700 E=ERRNUM(O):CLRERR
710IF E=8 THEN ? " READ ERROR. RE-INSERT
MEDIA.":CLRERR:FOR T=1 TO 1400:NEXT:RUN
720TEXT:? "ERROR#"; E
790POKE 16953, 95:END
900REM OPTIONS
910VTAB 18:HTAB 2:? CHR$(24); :POKE 64885, 0
920VTAB 23-s%
930INVERSE:? " SELECT OPTION: "; :NORMAL
940 O$(S%+1)="ESCAPE"
950FOR N=1 TO S%+1
960HTAB 34:? " "; N; ")"; :HTAB 6:? O$(N); :NEXT:IF NO
THEN RETURN
970 P=PEEK(64885):IF P=0 THEN 970
972IF P=33 THEN P=49
973IF P=64 THEN P=50
974IF P>34 AND P<38 THEN P=P+16
975IF P=95 THEN P=54
980FOR N=1 TO S%:IF P=ASC(STR$(N)) THEN VTAB 18:?
CHR$(24):RETURN
985NEXT
990IF P<>ASC(STR$(S%+1)) AND P<>27 THEN POKE 64885,
0:GOTO 970
1000POKE 16953, 95:TEXT:END

```

## SMARTFILER WORKSHOP

SMARTFILER "Good Stuff"  
BY W. MOTEL

HERE'S THE START OF THE GOOD STUFF LYLE PROMISED LAST MONTH. USING THE WONDERFUL UTILDUMP PROGRAM, A COUPLE OF DIFFERENT SMARTFILER DATABASES, AND SOME INVESTIGATION AND FILE MANIPULATING, I'VE FIGURED OUT THE LAYOUT AND STRUCTURE OF A SMARTFILER DATABASE. I'VE ALSO BEEN ABLE TO MAKE SOME DEDUCTIONS AND ASSUMPTIONS ABOUT SMARTFILER AND IT'S CAPABILITIES. I HAVEN'T SEEN ANY OF THIS INFORMATION SHOWN BEFORE, (IF ANYONE HAS, LET ME KNOW) SO THIS INFORMATION WILL HOPEFULLY HELP US TO WRITE PROGRAMS TO ACCESS SMARTFILER DATABASES IN A MORE PRODUCTIVE, HELPFUL FASHION.

### SOME INFORMATION (BOTH KNOWN AND DEDUCED)

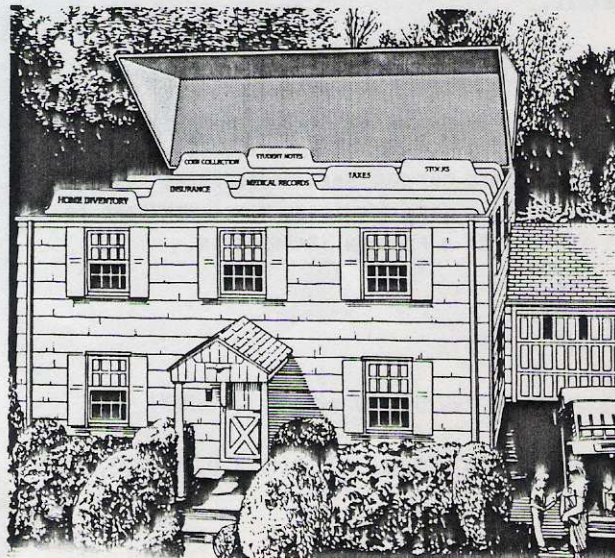
1. 1 DATABASE PER TAPE/DISK. USING TAPE DOES NOT ALLOW YOU MORE RECORDS PER FILE. THE CALCULATION ASSUMES 160 BLOCKS (DISK). ONE BLOCK(SECTOR) CAN HOLD 1024 CHARACTERS OF INFORMATION (TAPE OR DISK).
2. THE RECORD CAN BE A MAXIMUM OF 255 CHARACTERS. THE MINIMUM IS 6 CHARACTERS.
3. THE RECORD CAN CONSIST OF A MAXIMUM OF 32 DIFFERENT FIELDS (INCLUDING A MAX OF 4 SEARCH FIELDS, THE TEXT FIELD, AND NON-SEARCHABLE FIELDS).

4. THE FIELD NAMES CAN CONSIST OF 1 - 12 CHARACTERS. WE ALSO DEFINE THE LENGTH OF THE FIELD, WHETHER IT IS NUMERIC/CHARACTER, AND THE TYPE (SEARCH, NON-SEARCH, OR TEXT).
5. THE SEARCH FIELDS CAN BE A MAXIMUM OF 24 CHARACTERS EACH.
6. THE TEXT FIELD ONLY TAKES UP 2 POSITIONS IN THE ACTUAL RECORD. THESE 2 POSITIONS INDICATE THE EXISTENCE OR NON-EXISTENCE OF ACTUAL TEXT. THE ACTUAL TEXT, HOWEVER, IS STORED IN A DIFFERENT AREA OF THE DATABASE. EACH RECORDS TEXT AREA CAN CONTAIN A MAXIMUM OF 1024 CHARACTERS OF TEXT VALUE (1 BLOCK). THIS TEXT DATA (PER RECORD) IS EACH STORED IN ITS OWN BLOCK.
7. THE THEORETICAL MAXIMUM NUMBER OF RECORDS (PER DATABASE) IS 1024 RECORDS, ALTHOUGH THE MOST I'VE SEEN IS 1000 RECORDS. USING THE TEXT DRASTICALLY CUTS DOWN ON THE MAXIMUM NUMBER OF RECORDS. USING A RECORD OF 4 SEARCH FIELDS (EACH 1 POSITION), AND THE TEXT FIELD (TOTAL RECORD LENGTH OF 6 CHARACTERS - THE MINIMUM), GIVES YOU ONLY 148 RECORDS. THE LARGER THE RECORD, THE SMALLER THE NUMBER OF MAXIMUM RECORDS. USING A RECORD OF 4 SEARCH FIELDS (EACH 24 POSITIONS) AND ANY NUMBER OF NON-SEARCH FIELDS GIVING A TOTAL RECORD LENGTH OF 255 CHARACTERS WITH NO TEXT, YOUR DATABASE SHOULD GIVE YOU A MAX OF 440 RECORDS.
8. THE RECORDS AND ASSOCIATED SEARCH KEYS ARE STORED IN THE ORDER THEY WERE ENTERED ONTO THE FILE. THE EXCEPTION IS WHERE DATABASE RECORDS EXIST, WERE DELETED, AND ARE REPLACED. A SEPERATE RECORD NUMBER LOCATION IS MAINTAINED INDICATING WHERE THE ACTUAL RECORD SHOULD EXIST IN THE PRIMARY SEARCH KEY FIELD SEQUENCE. THIS ENABLES THE PROGRAM TO SORT ONLY THE SEARCH KEY VALUES AND ASSOCIATED RECORD NUMBER POINTERS, NOT THE ENTIRE RECORD. THIS ALSO MEANS THE ACTUAL RECORD DOES NOT HAVE TO BE REWRITTEN, ONLY THE RESQUENCED RECORD POINTER AREA.
9. THE SEARCH KEYS ARE STORED IN A SEPERATE AREA (IN ADDITION TO THE ACTUAL RECORDS). THIS ENABLES THE PROGRAM TO SEARCH THRU THE KEY VALUES ONLY LOOKING FOR CRITERIA MATCHES. ONLY WHEN A MATCH IS FOUND, DOES THE CORRESPONDING ACTUAL RECORD HAVE TO BE READ. I.E. 5TH SEARCH KEY MATCHES, READ THE 5TH ACTUAL RECORD.

# Smart FILER™

Item No. 781

ORGANIZE YOUR HOME WITH EASY ELECTRONIC FILING!





THE GENERAL LAYOUT OF THE FILE:

BLOCKS

0/1 BOOT & DIRECTORY (DATABASE STARTS AT BLOCK 2)  
 2 POSITIONS 32 - 479  
 SLOTS FOR 32 RECORD NAMES, IDS, AND LENGTH DESCRIPTORS  
 POSITION 480 - 481  
 MAX # RECORDS ALLOWED (481) \* 256 + (480)  
 POSITION 482 - 483  
 MAX # TEXT RECORDS (483) \* 256 + (482)  
 3 POSITION 4 - 131 (128 BYTES)  
 DENOTES WHICH OF THE MAXIMUM 1024 RECORDS SLOTS, ACTUALLY HAVE RECORDS IN THEM.  
 POSITION 132 - 643 (256 PAIRS OF BYTES)  
 USED TO DENOTE THE PRESENCE OR NOT OF TEXT WITHIN THE TEXT BLOCK AREA. IF BLOCK CONTAINS TEXT, THIS DENOTES WHICH ACTUAL RECORD THE TEXT IS FOR (LO-HI NOTATION).  
 POSITION 648 - 1023  
 WORK AREA. SEEMS TO DENOTE RESULT OF LAST INDEX SORT.  
 4/5 POSITION 0 - 1023 (512 PAIRS OF BYTES EACH)  
 EACH PAIR DENOTES WHERE THIS ACTUAL RECORD IS IN THE PRIMARY SEQUENCE. I.E. THE FIRST PAIR IS FOR THE 1ST ACTUAL RECORD, THE SECOND PAIR FOR THE 2ND, AND SO-ON. THE VALUE IN THE PAIR OF BYTES DENOTES WHERE THAT ACTUAL RECORD IS IN THE PRIMARY SEQ. I.E. BYTE 0-1 CONTAIN 05 00, THIS DENOTES THE 1ST RECORD IS 6TH IN THE FILE BY PRIMARY KEY SEQUENCE (REMEMBER, WE START WITH 0, THE 1ST RECORD SEQUENCE WOULD BE 00 00, THEREFORE 05 00 (ADD 1) IS REALLY 6. STARTING IN POSITION 0  
 6-X THE ACTUAL PRIMARY SEARCH KEY VALUES ONLY ARE STORED HERE. THEY ARE IN THE SAME ORDER AS THE ACTUAL RECORDS ARE STORED. BY LOOKING AT THE VALUES IN THE CORRESPONDING BLOCK 4 - 5 BYTE PAIRS, YOU CAN SEE WHERE THIS KEY IS IN THE SEQUENCE. THE NUMBER OF BLOCKS RESERVED IS DETERMINED BY THE LENGTH OF THE KEY FIELD & THE MAX NUMBER OF RECORDS ALLOWED. I.E. THE KEY FIELD IS 4 BYTES LONG AND MAX # RECORDS IS 500, WE NEED 4 \* 500 = 2000 BYTES.  
 2000 / 1024 (BYTES PER BLOCK) = 2 BLOCKS.  
 AFTER ABOVE AREA  
 SAME AS ABOVE, BUT FOR SEQUENCE KEY 2 (IF IT EXISTS). THIS IS USED FOR QUICK SORTS ON THIS KEY OR CRITERIA MATCHES, AFTER WHICH THE ACTUAL RECORDS CAN BE ACCESSED IN THE ACTUAL ORDER NEEDED. BLOCKS ARE CALCULATED SAME AS ABOVE.  
 AFTER ABOVE  
 SAME, BUT FOR SEQ. KEY 3 (IF IT EXISTS)  
 AFTER ABOVE  
 SAME, BUT FOR SEQ. KEY 4 (IF IT EXISTS)  
 AFTER LAST ONE OF ABOVE THAT WAS USED (THIS WILL START IN BLOCK 7 OR HIGHER)  
 THIS IS WHERE THE ACTUAL RECORDS ARE STORED THEY ARE STORED IN THE ORDER THEY WERE ENTERED (OR REPLACED A DELETED RECORD).

THEY ARE NOT NECESSARILY IN ANY KEY FIELD SEQUENCE. THE BLOCKS NEEDED IS BASED ON RECORD LENGTH \* MAX # RECORDS. REMEMBER, THE TEXT FIELD ONLY OCCUPIES 2 BYTES IN THE ACTUAL RECORD. THESE 2 BYTES ARE AN INDICATOR OF WHETHER TEXT EXIST OR NOT AFTER ACTUAL RECORD AREA (IF TEXT FIELD EXISTS)

HERE IS WHERE THE ACTUAL TEXT (BLOCKS) EXIST. 1 BLOCK OF TEXT PER RECORD INDICATED AS HAVING TEXT. THE TEXT BLOCKS ARE NOT IN SAME ORDER AS THE ACTUAL RECORDS, SINCE NOT ALL OF THE ACTUAL RECORDS HAVE TEXT. THE AREA NEEDED IS 1 BLOCK \* MAX # OF TEXT RECORDS ALLOWED. POSITIONS 132 - 643 OF BLOCK 3 ARE USED IN DETERMINING WHAT TEXT BELONGS TO WHAT ACTUAL RECORDS.

TO HELP YOU SEE THIS, DO THE FOLLOWING EXERCISE FOR NEXT MONTH. YOU WILL NEED SMARTFILER AND UTILDUMP. IF YOU DON'T HAVE UTILDUMP, FDUMP2 FROM THE APRIL ISSUE. FOLLOW THE STEPS EXACTLY. YOU WILL INITIALLY CREATE A DATABASE, DUMP OUT VARIOUS BLOCKS, DELETE 2 RECORDS FROM DATABASE AND DUMP OUT, AND FINALLY ADD 1 RECORD TO DATABASE AND DUMP OUT. THE ADDRESSES WILL BE RELATIVE TO THE START OF THE BLOCK. THE FIRST BYTE IS 0. AFTER YOU READ IN THE BLOCK, DUMP OUT THE MEMORY SHOWN. I.E., FDUMP2 READS THE BLOCK INTO 28000, UTILDUMP INTO 54500. IF THE INSTRUCTIONS SAY DUMP ADDRESS 640 - 655 OF BLOCK 6, READ BLOCK 6, AND DUMP 28000+640 = 28640 THRU 28655 WITH FDUMP2. OR 54500+640 = 55140 THRU 55155 WITH UTILDUMP. IF YOU USE UTILDUMP, CHANGE THE PRINT ADDRESS TO BE THE SAME AS THE STARTING RELATIVE ADDRESS. I.E., 640 IN THE ABOVE EXAMPLE. ALSO, DON'T FORGET TO MARK THE BLOCK # ON THE PRINTOUT, SO YOU DON'T FORGET WHICH IS WHICH.

1. (A) CREATE DATABASE WITH FOLLOWING DEFINITION

```

S1C   3 POST. CHARACTER SEARCH
S2N   3 POST. NUMERIC SEARCH
ENTC  2 POST. CHARACTER NON-SEARCH
ORDN  2 POST. NUMERIC NON-SEARCH
TEXTFLD (2) TEXT
    
```

THE RECORD LENGTH IS 12 AND YOU SHOULD GET MESSAGE SAYING 142 RECORDS ALLOWED.

(B) ADD THE FOLLOWING 4 RECORDS IN AS SHOWN,

```

S1C S2N ENTC ORDN TEXTFLD
--- --- -- -- -----
CCC 222 R1 04 TEXT CCC
BBB 111 R2 03
ABC 444 R3 02
AAA 333 R4 01 TEXT AAA
    
```

CLOSE DATABASE AND QUIT (EXIT)

2. LOAD BASIC & UTILDUMP OR FDUMP2

LOAD AND DUMP OUT THE FOLLOWING BLOCKS FROM YOUR DATABASE.

BLOCK 2 - POSITIONS 0 - 495  
 3 - 0 - 159 AND 640 - 671  
 4 - 0 - 31  
 6 - 0 - 31  
 7 - 0 - 31  
 8 - 0 - 63  
 10 - 0 - 47  
 11 - 0 - 47

MARK AND SAVE LIST

3. LOAD SMARTFILER AND THE DATABASE
  - DO INDEX SORT ON S1C AND LIST
  - DELETE THE ABC AND CCC RECORD
  - CLOSE DATABASE AND QUIT (EXIT)
4. LOAD BASIC & DUMP UTILITY. DUMP OUT SAME POSITIONS AS IN STEP 2, EXCEPT FOR BLOCK 2, ONLY DO POSITIONS 0 - 127 AND 480 - 495.
5. LOAD SMARTFILER AND THE DATABASE
  - ADD THE FOLLOWING RECORD  
 BBA 221 R5 35 TEXTADD
  - DO INDEX SORT ON 2ND SEARCH FIELD S2N
  - CLOSE DATABASE AND QUIT (EXIT).
6. REPEAT STEP 4

TRY TO LOOK AT EACH OF THE 3 DUMPS AND SEE IF YOU CAN FIGURE OUT THE CODING AS DEFINED IN THE GENERAL LAYOUT. REMEMBER WHAT WAS JUST DONE/CHANGED PRIOR TO THE DUMP IN SMARTFILER AND LOOK AT THE AREAS YOU THINK WOULD BE EFFECTED. SEE IF YOU CAN FIGURE THE CHANGES OUT. MORE NEXT MONTH.

## CPM 2.2 WORKSHOP

### CLINIC

SOME OF YOU HAVE HAS SOME PROBLEMS WITH CPM IN GENERAL AND SOME OF THE NIAD PD SOFTWARE. WE'LL TRY TO OFFER SOME BASIC INFORMATION IN THIS CPM 2.2 CLINIC. HOWEVER, THOSE OF YOU WHO ARE NOT FAMILIAR WITH CPM MUST GET YOURSELVES A GOOD BASIC CPM BOOK. I PREVIOUSLY RECOMMENDED THE CPM PRIMER WHICH IS PUT OUT BY H. SAM'S. THE CPM USER'S GUIDE (3RD EDITION) IS ALSO AN EXCELLENT CPM STARTER. THERE ARE MANY GOOD CPM BOOKS ON THE MARKET - GET ONE AND READ IT IN CONJUNCTION WITH STUDYING YOUR ADAM CPM 2.2 MANUAL. PLEASE PUT IN THIS EFFORT FIRST, IF YOU WANT TO REALLY USE CPM. I CAN'T SUPPLY ENOUGH INFORMATION IN THIS COLUMN TO GIVE YOU ALL THE CPM BASICS - YOU WILL HAVE TO INVEST SOME OF YOUR TIME TO GET THE BASICS.

CPM HAS SOME BASIC PRINCIPLES WHICH YOU CAN NOT VIOLATE:

. THE CPM SYSTEM MUST BE ON THE DISK OR DDP THAT IS RECOGNIZED AS DRIVE "A:". DRIVE A: IS WHAT EVER DRIVE YOU ORIGINALLY BOOTED CPM FROM. IF YOU BOOTED FROM DATA PACK DRIVE 1 THEN IT IS DRIVE A:, THE SECOND DDP DRIVE IS B:, DISK DRIVE 1 IS C: AND DRIVE 2 IS D:.

IF YOU BOOTED FROM DISK DRIVE 1 THEN IT IS RECOGNIZED BY CPM AS DRIVE A:, DISK DRIVE 2 IS B: AND THE DDP DRIVES ARE C: AND D:.

AFTER YOU HAVE BOOTED CPM, IF YOU PUT ANOTHER DDP OR DISKETTE IN DRIVE A:, IT MUST HAVE THE CPM SYSTEM ON IT (THIS IS DONE WITH THE SYSGEN FUNCTION AS EXPLAINED IN YOUR ADAM CPM 2.2 MANUAL); ADDITIONALLY, IF YOU CHANGE DISKETTES YOU MUST ALWAYS HIT A "CONTROL-C" WHICH IS WARM BOOT AND IS REQUIRED BY CPM TO RECOGNIZE THAT YOU HAVE CHANGED DISKETTES. IF YOU PUT A DISKETTE IN DRIVE A: THAT DOES NOT HAVE THE CPM SYSTEM ON IT YOU WILL CRASH THE SYSTEM AND HAVE TO REBOOT. SYSGEN CAN BE DONE TO A DISK OR DDP THAT ALREADY HAS FILES ON IT WITHOUT DESTROYING THE FILES, THUS MAKING IT A BOOTABLE DDP/DISKETTE.

NOW, IF YOU ONLY HAVE A SINGLE DDP DRIVE THERE IS NO WAY THAT YOU CAN USE CPM 2.2 TO COPY FILES AND PERFORM THE OTHER FUNCTIONS REQUIRED. I ASSUME MOST OF YOU CPM'RS HAVE AT LEAST A DISK DRIVE OR SECOND DDP DRIVE. IF YOU RECEIVE A DDP OR DISKETTE THAT YOU WANT TO USE, THE FIRST THING I WOULD DO IS SYSGEN IT TO PLACE THE CPM OPERATING SYSTEM ON IT. I FIND THIS MUCH EASIER THEN TRYING TO REMEMBER WHICH DISKETTE I HAVE THE SYSTEM ON AND WHICH I DON'T.

HERE IS THE PROCEDURE I WOULD RECOMMEND FOR WORKING WITH THE NIAD PD CPM DATA PACKS:

1. IF YOU HAVE AT LEAST ONE DISK DRIVE, YOU WILL MOST LIKELY WANT TO TRANSFER THESE PROGRAMS TO A DISKETTE FOR REVEIW AND USE AND SAVE THE DDP AS YOUR BACK UP COPY OF THE FILES (ALWAYS KEEP A BACKUP). PREPARE A BLANK DISKETTE BY DOING THE CPM FORMAT AND THEN THE SYSGEN FUNCTIONS. YOU CAN DO THIS JUST BY USING YOUR SINGLE DISK DRIVE I.E. YOU DON'T HAVE TO BOOT WITH THE DDP.
2. COPY PIP AND ANY OTHER REQUIRED FILES THAT YOU NORMALLY USE TO THE DISKETTE. YOU WILL NEED TO COPY THESE FROM YOUR SECOND DISK DRIVE OR YOUR DDP DRIVE. ONE IDEA THAT WOULD SAVE SOME TIME IS TO PREPARE A MASTER WORKING DISK WITH THE CPM SYSTEM AND YOUR REQUIRED UTILITIES AND USE THE BACKUP FUNCTION TO "CLONE" IT TO A NUMBER OF OTHER DISKETTES THAT WOULD BE READY TO RECIEVE NEW FILES.
3. USE PIP TO COPY THE PROGRAMS FROM THE PD DDP TO YOUR TARGET DISK.
4. YOU CAN NOT USE BACKUP TO COPY THE ENTIRE DDP TO A DISK - HENCE, YOU MUST USE PIP.
5. SINCE OUR PD DDP'S HAVE A FULL DISK FULL OF DATA (143K) AND SOME OF THE FILES MAY BE "SQUEEZED" OR BE IN LIBRARIES, I WOULD SUGGEST YOU PIP THEM ONTO TWO DISKETTES. THIS WILL ALSO ALLOW YOU SOME EXTRA ROOM TO WORK WITH ON EACH DISKETTE.
6. IF THERE ARE ANY "SQUEEZED" FILES (THESE WILL HAVE A "Q" AS THE SECOND LETTER OF THE FILE NAME EXTENSION I.E. DISPLAY.DQC) YOU WILL HAVE TO "UNSQUEEZE" THEM BY RUNNING THE "USQ" PROGRAM.
7. THE CONVENTION USED BY MANY CPM PROGRAMS THAT WORK OR DO THINGS WITH OTHER PROGRAMS IS ENTER THE PROGRAM NAME YOU ARE RUNNING (WITHOUT THE EXTENSION OF COURSE) FOLLOWED BY THE NAME OF THE PROGRAM THAT YOU WANT THE

FIRST PROGRAM TO DO SOMETHING WITH. THIS IS THE CONVENTION USED BY PIP. AS AN EXAMPLE TO "UNSCQUEEZE" A FILE NAMED DISPLAY.DQC YOU WOULD ENTER "USQ DISPLAY.DQC". THIS WAS COVERED IN THE "READ ME" FILE ON THE CNDVI PD DDP, BUT THE INSTRUCTION WAS CUT OFF.

3. IF ANY OF THE PROGRAMS HAVE AN EXTENSION NAME OF "LBR", THEY ARE A LIBRARY FILE AND YOU MUST USE THE LU310.COM PROGRAM TO EXTRACT AND WORK WITH THE FILES IN THE "LIBRARY".

#### CPM NEWS

THERE IS ALOT HAPPENING IN THE CPM AREA, I FIND IT HARD TO KEEP UP. WE NOW HAVE 7 PD LIBRARY DDP'S AVAILABLE WITH MORE TO BE CATALOGUED AND COPIED. I HAVE BEEN SPENDING ALOT OF TIME ON REVIEWING AND OUTLINING MODIFICATIONS FOR NEVADA BASIC (SEE REVIEW THIS ISSUE). THIS IS A VERY POWERFUL BASIC INTERPRETER, EQUIVALENT, AND IN SOME CASES BETTER THEN THE POPULAR MICROSOFT BASIC. NEVADA BASIC, CONFIGURED FOR THE ADAM FURTHER ENHANCES THE ADAM BY GIVING US ACCESS TO NUMEROUS CPM BASIC PROGRAMS -BOTH PUBLIC DOMAIN AND COMMERCIAL, NOT TO MENTION GIVING YOU BASIC BUFFS A MORE POWERFUL TOOL FOR YOUR PROGRAM DEVELOPMENT.

I HAVE BEGUN THE REVIEW OF WORDSTAR FOR THE ADAM, BUT IT IS SO COMPREHENSIVE I WILL SPLIT IT INTO TWO REVIEWS OVER AUGUST AND SEPTEMBER. WORDSTAR IS A GREAT WORD PROCESSING PROGRAM FOR THOSE WHO USE THE ADAM HEAVILY IN THIS MODE AND NEED ADDITIONAL FUNCTIONS THAT SMARTWRITER DOESN'T HAVE. THERE ARE SO MANY CPM PROGRAMS OUT THERE - PLEASE LET ME KNOW WHAT YOU ARE INTERESTED IN SO WE CAN CONCENTRATE ON THEM.

#### NIAD PUBLIC DOMAIN UPDATES

THERE IS AN UPDATED VERSION OF THE LIBRARY UTILITY PROGRAM (LU310.COM) WHICH HAS MANY ADDED FUNCTIONS AND DOES NOT REQUIRE THE USE OF THE DE-LBR PROGRAM I DISCUSSED LAST MONTH. THIS PROGRAM AND AN EXTENSIVE DQC FILE ARE ON NIAD'S PD LIBRARY # CNDV2.

THERE IS ALSO AN UPDATED VERSION OF THE SQZ AND USQ UTILITIES - LIBRARY # CNDV3. LIBRARY # CNDV6 CONTAINS THE ORIGINAL ADVENTURE GAME (TEXT) FOR CPM.

I AM WORKING ON CONVERTING DIMS (DAN'S INFORMATION MANAGEMENT SYSTEM) WHICH IS GENERAL PURPOSE DATA BASE PROGRAM TO RUN UNDER NEVADA BASIC. I'M NOT SURE IT WILL MAKE IT USING ONLY THE 30 CHARACTERS HORIZONTAL ADAM PROVIDES.

ADDITIONAL NOTE: I NOW HAVE THE BOOK CPM USER'S GUIDE IN STOCK FOR YOU HUNGRY CPM NOVICES - I RECOMMEND YOU GET IT TO LEARN CPM IF YOU ARE GOING TO SERIOUSLY GET IN IT. IT RETAILS FOR \$18.95, NIAD MEMBERS CAN PURCHASE IT FOR \$15.95.

HERE'S A GREAT LITTLE PROGRAM THAT WE ALL NEED TO EFFECTIVELY USE CPM 2.2. IT SETS THE NUMBER OF CHARACTERS PRINTED HORIZONTALLY ON THE SCREEN BEFORE A CARRIAGE RETURN AND LINE FEED ARE ISSUED. AS MANY OF YOU KNOW, MOST OF THE PD CPM PROGRAMS ARE WRITTEN FOR A 80 COLUMN VIDEO DISPLAY AND OUR ADAM ONLY ALLOWS 30

IN CPM MODE. ALTHOUGH, THE ADAM WILL SCROLL ACROSS THE SCREEN FOR YOU TO VIEW ALL 80 COLUMNS, IT IS DIFFICULT TO WORK WITH. HERE'S THE PROGRAM (SUBMITTED BY BARRY WALLIS AND OBTAINED FROM THE CRE SIG ON COMPUSERVE:

```
ORG 100H
LXI H,0EA68H
MVI A,30 ; OR ANY LENGTH YOU WANT
MOV M,A
JMP 00
END
```

WHAT I WOULD SUGGEST IS THAT YOU CREATE TWO VERSIONS OF THIS PROGRAM - ONE FOR 30 CHARACTERS AND THE OTHER FOR 80 CHARACTERS SO YOU CAN SWITCH BACK AND FORTH AS YOU NEED TO.

YOU NEED TO ASSEMBLE THIS PROGRAM IF YOU WANT IT WRITE AWAY OR IT WILL BE ON OUR PD VOLUME #3.

## REVIEWS

### NEVADA BASIC (FOR CPM) PART 1 BY L. MARSCHAND

WHAT THE HECK IS "NEVADA BASIC" ? A GAME INVENTED TO WIN AT BLACKJACK ? No, NEVADA BASIC IS A CPM BASED BASIC INTERPRETER PROGRAM (LIKE SMARTBASIC). AS MOST OF YOU CPM'RS KNOW, WE DON'T HAVE A BASIC FOR THE ADAM UNDER CPM (UNTIL NOW THAT IS). MICROSOFT BASIC IS AVAILABLE FOR ONLY \$ 350.00 SO I ASSUME MANY OF YOU HAVE BOUGHT IT !! US ADAMITES ARE USED TO REASONABLY PRICED SOFTWARE AND I THINK WE HAVE IT IN NEVADA BASIC.

NEVADA BASIC WAS DEVELOPED BY ELLIS COMPUTING OF CALIFORNIA FOR CPM 8 BIT SYSTEMS. ELLIS ALSO MARKETS PILOT, COBOL AND FORTRAN WHICH WE WILL BE LOOKING AT SOON AS WELL !

THIS IS A VERY POWERFUL VERSION OF BASIC - MUCH MORE POWERFUL THEN SMARTBASIC AND I BELIEVE ON A PAR WITH MICROSOFT. JUST AS AN EXAMPLE, I RAN THE FOLLOWING PROGRAM TO SEE HOW EACH BASIC PROGRAM PERFORMED:

```
10 FOR X=1 TO 1000
20 LET Y=X*3
30 PRINT Y;
40 NEXT X
50 END
```

SMARTBASIC	MICROSOFT	NEVADA
20.1 SEC	16.1 SEC	15.5 SEC

NOW, IN ADDITION TO SPEED NEVADA BASIC HAS A VERY POWERFUL COMMAND SET - SOME HIGHLIGHTS:

- . 8 OR 12 PLACE PRECISION VERSIONS
- . FULL MATRIX OPERATIONS
- . UP TO 64 CHARACTER VARIABLE NAMES
- . FULL OUTPUT FORMATTING (PRINT FORMAT STATEMENTS)
- . BUILT IN RENUMBER FUNCTION
- . BUILT IN FULL SCREEN EDITOR
- . COMPREHENSIVE STRING HANDLING
- . DIRECT CALLS TO MACHINE LANGUAGE SUB-ROUTINES
- . CONTROLLED INPUT
- . ERROR CONTROL (ON ERROR, ETC)
- . USER DEFINED FUNCTIONS
- . SERIAL AND RANDOM FILE OPERATIONS

THIS IS A FULL FUNCTION VERSION OF BASIC AT A REASONABLE PRICE - WHAT MORE COULD WE ASK ? NIAD IS WORKING ON SOME TAILORING THAT NEEDS TO BE DONE FOR THE ADAM AND BY THE TIME YOU RECEIVE THIS ISSUE ADAM NEVADA BASIC SHOULD BE READY TO SHIP !

A COMPLETE MANUAL WITH SAMPLE ROUTINES IS INCLUDED TO AID THE USER. WE WILL PREPARING A PD VOLUME OF CPM BASIC PROGRAMS THAT WILL RUN UNDER NEVADA BASIC AS WELL.

I'M EXCITED ABOUT OUR ABILITY TO NOW GET AT CPM BASIC PROGRAMS WITH THE ADAM !  
MORE ON THIS NEXT MONTH.

CPM WORDSTAR FOR THE ADAM (PART I) BY L.  
MARSCHAND

YES, THE MOST POPULAR WORD PROCESSING SOFTWARE PRODUCT IS AVAILABLE FOR THE ADAM, UNDER CPM 2.2.

WORDSTAR WAS DEVELOPED BY MICROPRO AND HAS MADE THEM RICH ! IT'S HARD TO ESTIMATE HOW MANY MILLIONS OF COPIES OF THIS SOFTWARE HAVE BEEN SOLD. IT HAS BEEN ADAPTED TO MANY COMPUTERS AND OPERATING SYSTEMS AND HAS UNDERGONE THREE MAJOR UPGRADES OVER THE YEARS. WORDSTAR COMES WITH A DETAILED REFERENCE AND TRAINING MANUAL AND THERE ARE MANY BOOKS OUT ON THE MARKET THAT SUPPLEMENT THOSE SUPPLIED.

LET ME MAKE IT CLEAR AT THE OUTSET THAT I ONLY RECOMMEND WORDSTAR OR ANY COMPREHENSIVE WORD PROCESSING PACKAGE TO THE FREQUENT WORD PROCESSING USER WHO HAS NEED OF SPECIAL FORMATING FUNCTIONS THAT SMARTWRITER CAN'T SUPPLY. WORDSTAR (WS) WILL BE VERY FRUSTRATING AND IS OVERKILL FOR THE OCCASIONAL USER. ON THE OTHER HAND, IF YOU ARE A HEAVEY WP USER, WORDSTAR FITS THE BILL.

WS IS A GENERAL PURPOSE PROGRAM, THAT IS INTENDED FOR USE ON MANY DIFFERENT COMPUTERS. HENCE, THERE ARE OPTIONS BUILT IN TO SUPPORT DIFFERENT TERMINAL TYPES AND PRINTERS. THE VERSION I HAVE TO REVIEW WAS SET UP FOR THE ADAM RELATIVE TO THE KEY COMMANDS AND TO OUTPUT TO THE ADAM PRINTER. WS CAN BE CONFIGURED FOR ANY OTHER PRINTER (VIA THE SP-1 INTERFACE) AND FOR THE 80 COLUMN VIDEO WHEN IT IS RELEASED.

WS HAS TWO BASIC MODES -

- . DOCUMENT MODE FOR NORMAL WP AND

. NON-DOCUMENT MODE WHICH IS A GENERAL PURPOSE MEANS OF CREATING TEXT FILES OR WRITING PROGRAMS, THAT CAN BE USED BY CPM, BASIC, ETC. THE NON-DOCUMENT MODE IS BASICALLY A FULL SCREEN EDITOR. THIS MAKES WS A NICE DUAL PURPOSE PROGRAM UNDER CPM. ANY OF YOU THAT HAVE USED ED WILL LIKE THIS !

WS USES 1 AND 2 CHARACTER ENTRIES AS ITS CONTROL KEYS FOR ALL COMMANDS. AS AN EXAMPLE "CONTROL QR" IS THE COMMAND TO SET THE CURSOR BACK TO THE START OF THE DOCUMENT; "CONTROL Y" DELETES AN ENTIRE LINE; "CONTROL PS" WILL UNDERLINE ALL CHARACTERS FOLLOWING IT, ETC. NOW, SOME PEOPLE HAVE CRITICIZED WS FOR THESE FEATURES - THE FACT THAT THESE KEYS MUST BE REMEMBERED TO PERFORM ALL FUNCTIONS. ONE OF THE ADVANTAGES OF THE ADAM SOFTWARE IS THE FUNCTION KEY DISPLAYS THAT "WALK" A PERSON THROUGH ALL ACTIVITIES. FUNCTION KEYS DON'T INSURE LESS KEY ENTRIES, IN FACT THERE ARE MANY TIMES MORE. HOWEVER, AT LEAST THE KEYS ARE LABELED FOR THE USER TO READ. WS WAS MODIFIED TO ANSWER THESE CRITIQUES AND NUMEROUS ONLINE "HELP" SCREEN MENUS WERE ADDED THAT DEFINED THE MEANING OR FUNCTION OF EACH OF THE KEYS. ADDITIONALLY, A FEATURE WAS ADDED THAT ALLOWS THE USER TO SELECT 4 LEVELS OF HELP, FROM NONE TO ALOT, WHICH ALLOWS THE USER TO REDUCE THE AMOUNT OF HELP GIVEN ON THE SCREEN AS THE FUNCTIONS OF WS ARE LEARNED THROUGH USE. MY PERSONAL OPINION (BACKED BY YEARS OF WORK DESIGNING SYSTEMS FOR USERS) IS THAT THE HELP SCREEN FEATURE IS ONLY HELPFUL TO THE USER DURING THE INITIAL TRAINING PERIOD OR FOR THE OCCASIONAL USER. ONCE A PERSON LEARNS A SYSTEM, THEY WANT TO OPERATE IT IN THE MOST EFFICIENT MANNER POSSIBLE. WS IS DESIGNED FOR BOTH THE UNTRAINED AND THE TRAINED USER WITH ITS MULTIPLE LEVELS OF HELP. NOW, USING THE LIMITED 37 CHARACTER DISPLAY PROVIDED BY THE ADAM MAKES IT ALMOST IMPOSSIBLE TO USE THE ON SCREEN HELP FEATURES - YOU NEED TO SCROLL ACROSS TO SEE ALL THE ENTRIES WHICH IS MORE TROUBLE THEN IT IS WORTH. HENCE, I FOUND THAT I NEEDED TO SET WS TO THE "NO HELP" LEVEL WHICH JUST LEAVES THE RULER ACROSS THE TOP OF THE SCREEN. I THEN THOUGHT I HAD IT MADE ! WRONGO, THE ADAM CPM 2.2 DECIDES TO SCROLL WHEN IT WANTS AND MAKES THE ENTRY OF TEXT VERY DIFFICULT. I TRIED WORKING WITH IT FOR AWHILE AND GAVE UP ON IT. ALTHOUGH I THINK WE CAN WORK SOME OF THESE PROBLEMS OUT VIA SOFTWARE CHANGES AND SOME SPECIAL CONFIGURING OF WS, I'M NOT SURE HOW MANY ADAM USERS WOULD BE IN THE MARKET FOR A VERSION TAILORED IN THIS FASHION. IT SEEMS TO ME THAT THE REAL HEAVEY USER OF WORD PROCESSING ON THE ADAM MIGHT BE MORE LIKELY TO SPEND THE MONEY AND GET THE 80 COLUMN VIDEO CARD FROM EVE TO REALLY TAKE ADVANTAGE OF THE POWER OF PROGRAMS LIKE WS. I NEED YOUR FEEDBACK ON THIS TO DECIDE IF WE SHOULD PURSUE MODIFYING WS FOR THE ADAM !

THE LONG AWAITED TRACTOR FEED FOR THE ADAM HAS FINALLY ARRIVED FROM A COMPANY CALLED DATA BACKUP. DATA BACKUP ALSO MANUFACTURES THE PRINTER SWITCH AND STAND, WHICH I WILL REVIEW HERE ALSO.

THE TRACTOR FEED IS A MECHANISM USED ON MANY PRINTERS TO AID IN PASSING PAPER THROUGH THE PRINTER AND KEEPING IT ALIGNED PROPERLY. THIS IS ACCOMPLISHED BY A MOVING "TRACTOR" WHICH HAS COGS IN IT WHICH FIT THE HOLES PROVIDED ON "PIN FEED" PAPER. I'M SURE MOST OF YOU HAVE SEEN THIS PAPER -IT HAS HOLES RUNNING VERTICALLY ON BOTH SIDES OF THE PAPER WITH A PERFORATION CUT THAT ALLOWS THE SECTION OF THE PAPER WITH THE HOLES TO BE REMOVED AFTER PRINTING. ONE MAY ASK, WHY WOULD I WANT THIS THING! AS SOME OF YOU ARE PAINFULLY AWARE, THE FRICTION FEED MECHANISM THAT ADAM USES TO ADVANCE THE PAPER OCCASIONALLY MIS-ALIGNS THE PAPER AND REQUIRES ADJUSTMENT. THE TRACTOR FEED CORRECTS THIS PROBLEM BY PROVIDING A PULLING MECHANISM (TRACTORS) ON TWO SIDES OF THE PAPER. YOU OBVIOUSLY NEED TO USE PAPER ESPECIALLY DESIGNED FOR TRACTOR FEEDS WHICH IS KNOWN AS CONTINUOUS FORM PIN FEED PAPER. THE STACK OF PAPER IS FED INTO THE TRACTOR FEED MECHANISM AND YOU TEAR OFF THE SHEETS AS YOU PRINT THEM. THIS MECHANISM IS REQUIRED IF YOU DO A LOT OF LONG DOCUMENT PRINTING THAT REQUIRES CONSISTENT ALIGNMENT OR IF YOU USE SPECIAL FORMS (LABELS, ETC) THAT COME ON CONTINUOUS FORM PAPER.

THE TRACTOR FEED IS EASY TO INSTALL ON THE ADAM PRINTER SINCE IT WAS ORIGINALLY DESIGNED TO ACCEPT A TRACTOR FEED. THE TRACTOR FEED IS OF HIGH QUALITY, THE FRAME AND BARS ARE METAL AND THE TRACTOR FEEDS ARE PLASTIC. THIS IS A FULLY ADJUSTABLE TRACTOR TO ACCOMMODATE ALL FORM SIZES UP TO 8 1/2 INCHES. THE TRACTOR FEED IS ADVANCED BY THE SAME ADAM GEARING THAT DRIVES THE FRICTION ROLLER SO THE TWO WORK IN CONCERT.

I RECOMMEND THIS TRACTOR FEED FOR ANYONE WHO IS GOING TO USE THE ADAM PRINTER TO DO A LOT OF HIGH VOLUME PRINTING OR USE SPECIAL FORMS. HOWEVER, IF YOU PLAN ON PURCHASING THE SP-1 AND ANOTHER PRINTER TO UTILIZE THE HIGHER SPEED AND SPECIAL PRINTING I WOULD RECOMMEND YOU NOT PURCHASE THE TRACTOR FEED (MOST OF THE DOT MATRIX PRINTERS HAVE A TRACTOR FEED AS A STANDARD FEATURE) BUT PUT THIS MONEY TOWARDS YOUR PRINTER.

RATING - A

#### ON/OFF SWITCH & PRINTER LEGS

DATA BACKUP ALSO MAKES A FRONT SWITCH TO HOOK ON THE ADAM PRINTER WHICH MAKES IT EASIER TO TURN THE SYSTEM ON AND OFF. THE MECHANISM IS RATHER SIMPLE, CONSISTING OF A METAL BAR THAT ATTACHES UNDER THE PRINTER AND HOOKS ONTO THE SWITCH IN THE BACK. YOU THEN SLIDE A HANDLE ON THE FRONT OF THE METAL BAR WHICH ACTIVATES THE SWITCH IN THE BACK. A SET OF PRINTER LEGS ARE ALSO INCLUDED IN THIS

PACKAGE WHICH ELEVATE THE PRINTER ABOUT THREE INCHES. THIS SPACE UNDER THE PRINTER CAN BE USED AS STORAGE OR FOR PLACING THE CONTINUOUS FORM PAPER WHICH CAN THEN BE FED INTO THE PRINTER FROM THE BACK.

THE SWITCH AND LEGS ARE A NICE PACKAGE THAT MAKE THE PRINTER EASIER TO USE. PERSONALLY, THE BACK SWITCH DOES NOT BOTHER ME AND I HAVE A SHELF FOR MY PRINTER.

RATING - B

#### SMART TYPE (WORD PROCESSOR) BY W. MOTEL

THIS IS A WORDPROCESSOR PROGRAM FOR THE ADAM FROM REEDY SOFTWARE. IT IS WRITTEN IN BASIC, WHICH MEANS YOU CAN CHANGE THE PROGRAM BUT IT IS SOMEWHAT SLOWER PROCESSING. THE MAIN ADVANTAGE IS THE ABILITY TO SPREAD OUT A SENTENCE (LEFT/RIGHT JUSTIFY). THIS, IN ESSENCE, ADDS EXTRA SPACES BETWEEN WORDS SO THAT THE FIRST WORD STARTS IN THE LEFT MARGIN, AND THE LAST WORD ENDS IN THE RIGHT COLUMN. THIS IS SIMILAR TO NEWSPAPERS. YOU ALSO CAN DO TWO-COLUMN PER PAGE PRINTING WITH EACH COLUMN BEING 38 CHARACTERS. THE MAIN ENTRY SCREEN HAS INDICATORS AT THE TOP SHOWING WHICH ROW AND WHICH COLUMN IN THE ROW YOU ARE AT. THE SMARTKEYS GIVE YOU THE OPTIONS OF CENTER THE LINE, LEFT JUSTIFY, RIGHT JUSTIFY OR LEFT/RIGHT JUSTIFY. THE PRINT FUNCTION KEY BRINGS YOU TO THE PRINT OPTION SCREEN. THE STORE/GET BRINGS YOU TO THE PRINT OPTION SCREEN. THE STORE/GET BRINGS UP THE SAVE/LOAD OPTION SCREEN. YOU CAN ALSO INSERT/DELETE ROWS. MOVE ALLOWS YOU TO GO DIRECTLY TO THE FIRST, LAST OR TO YOUR SPECIFIED ROW.

THINGS YOU CAN'T DO OR ARE LIMITED TO:

1. MOVE/COPY BLOCKS OF DATA.
2. HALF-LINE SPACING, ONLY ALLOWS ONE, TWO, THREE, ETC.
3. MAXIMUM OF SIXTY ROWS OF EIGHTY-COLUMN DATA. YOU CAN CHANGE THE PROGRAM OR (AS THEY SUGGEST) SAVE EACH PAGE INDIVIDUALLY.
4. DO SUBSCRIPT, SUPERSCRIPIT OR UNDERLING.
5. THERE IS NO AUTOMATIC WORD WRAPAROUND AS IN SMARTWRITER. YOU DO YOUR OWN END OF LINE HYPHENATION.
6. YOU CANNOT SMARTTYPE PRINT A SMARTWRITER CREATED H FILE. THE SMARTTYPE FILE IS ACTUALLY AN A TYPE FILE WITH ADDITIONAL INFORMATION. THEY GIVE INSTRUCTIONS ON HOW TO PRINT THE SMARTTYPE FILE UNDER NORMAL SMARTWRITER.
7. I DID EXPERIENCE A PROBLEM WHEN I INSERTED/DELETED ROWS. SOME OF MY EXISTING ROWS WERE CHANGED AND GARBAGE CHARACTERS PUT IN. THEY EXPLAIN THIS AWAY AS AN APPARENT "WEAKNESS" OF SMARTBASIC WHICH YOU SIMPLY RE-ENTER THE INFORMATION TO CORRECT. THAT'S FINE IF YOU NOTICE THE PROBLEM.

OVERALL, THE PRESENTATION OF THE DIFFERENT SCREENS IS WELL DONE. YOU DO HAVE TO GET USED TO ENTERING DATA WITHOUT THE AUTOMATIC SMARTWRITER WRAPAROUND. YOU ALSO HAVE TO JUDGE FOR YOURSELF IF THE TWO COLUMNS AND LEFT/RIGHT JUSTIFY OPTION MAKE UP FOR THE LIMITATION. I DON'T THINK THIS IS A REPLACEMENT TO SMARTWRITER BUT MORE OF AN ALTERNATE TO HAVE AVAILABLE FOR CERTAIN

SITUATIONS WHERE THE ADDITIONAL FUNCTIONS PROVIDED ARE REQUIRED. MY RATING IS BASED ON THE ASSUMPTION THAT YOU WOULD NEED THE FUNCTIONS PROVIDED BY SMARTTYPE.

RATING - B

REEDY SOFTWARE  
10085 - 60TH STREET S.E.  
ALTO, MI 49302  
\$ 24.95 ON DDP OR DISK

## MEMBER COMMENTS/

## QUESTIONS & ANSWERS

. I BOUGHT MY SECOND ADAM AND HAVE SOME "EXTRA" ITEMS FOR SALE:

ADAMLINK MODEM - \$ 50.00  
SUPERACTION CONTROLLERS WITH BASEBALL, FOOTBALL, DONKEY KONG JR., ROC N ROPE, MOUSE TRAP, MR. DO, FRENZY.....\$ 75.00 (WILL SEPARATE)  
CONTACT RAY McALPIN, 1005 S. HAMLIN, PARK RIDGE, IL 60068; 312-823-5301

. DAMBUSTERS HINTS - HAVE YOU CHECKED THE ALTIMETER ? THE LARGE HAND MOVES IN 5 FOOT INCREMENTS NOT TEN AS STATED IN THE MANUAL. FIG. 2 IS WRONG, 1000 FT. IS NOT AT THE 3 O'CLOCK POSITION BUT BETWEEN 1 AND 2 O'CLOCK. IT IS IMPOSSIBLE TO GET TO WHERE THE HANDS ARE POINTED IN FIG. 2. BEFORE YOU GET THERE THE PLANE SPINS OUT. (COURTESY OF THE FIRST CANADIAN ADAM USER'S GROUP, MONTREAL). VERA BISHOP  
- THANK YOU VERA FOR THE HINTS. I WOULD LIKE TO START A "GAME HINTS" SECTION IF YOU FOLKS WOULD SEND YOURS IN.

. THOUGHT NOW WAS A GOOD TIME TO LET YOU KNOW HOW MUCH I APPRECIATE THE ASSISTANCE YOU PROVIDE A FLEDGLING WITH THE ADAM. YOUR NEWSLETTERS HAVE BEEN VERY VALUABLE IN ALL RESPECTS THAT I CAN ADDRESS. ADDITIONALLY, YOUR TESTIMONY AND OPENNESS FOR THOSE YOU DEAL WITH ARE A REAL BOON FOR CHRIST. YOU ARE INDEED FILLING A NEED THROUGH THE SIG GROUP AND BUSINESS  
YOUR WRITE UP ON THE TUTORIAL (RIB I AND RIB II) HAVE BEEN A BIG HELP. SO FAR I HAVE BEEN ABLE TO GET ABOUT 1/2 WAY THROUGH IT AND AM HAVING A MIND STRETCHING GOOD TIME.  
KEEP UP THE GOOD WORK !  
J. GOODRICH  
- THANKS JIM FOR THE COMMENTS AND SUPPORT. JESUS IS THE ONE WHO HELPS ME DIRECT NIAD TO HELP ALL OF YOU !

. THE FOLLOWING ROUTINE WILL ALIGN FIGURES TO PRINT IN A COLUMN AS SHOWN:

```
5 HOME
10 INPUT "NUMBER ";N
15 AMT = N: PRINT TAB(20); : GOSUB 100: REM ** SET TAB
FOR THE 1ST FIGURE IN A FIVE FIGURE NUMBER (TAB 20-
DECIMAL AT 27(
20 GOTO 10
100 AMT = (INT(100*(AMT+5E-03)))/100: REM ROUND TO
CENTS
110 X$ = STR$(INT(AMT)): AMT$ = STR$(AMT): REM
CONVERTS TO STRINGS
112 L = LEN(X$): REM MEASURES LENGTH OF DOLLARS
113 LL = LEN(AMT$): REM MEASURES LENGTH OF AMOUNT
114 IF X$ = "0" THEN LL = LL+1
130 IF X$ = AMT$ THEN CENT$ = ".00"
133 IF LL-1 = 2 THEN CENT$ = RIGHT$(AMT$,2)+"0"
136 IF LL-1 = 3 THEN CENT$ = RIGHT$(AMT$,3)
189 IF L >=0 AND L <4 THEN PRINT SPC(7-1);X$;CENT$
194 IF L >3 AND L <7 THEN X$ = LEFT$(X$,
1-3)+"."+MID$(X$, 1-2, 3): PRINT SPC(6-1); X$; CENT$
300 RETURN
```

NUMBER	10.00
NUMBER	100.00
NUMBER	1.00
NUMBER	10.77
NUMBER	100,000.00
NUMBER	.20

REV. GLENN D. PREWITT

- THANKS VERY MUCH REVEREND PREWITT FOR THE GREAT ROUTINE - A NUMBER OF PEOPLE HAVE ASKED ABOUT HOW TO LINE UP DOLLARS AND CENTS.

. AS A NEW MEMBER OF NIAD, I WANT TO EXPRESS MY APPRECIATION FOR YOUR EFFORTS. IT IS REFRESHING TO FIND SOMEONE WHO IS WILLING TO MAKE HIS CHRISTIANITY A PART OF HIS BUSINESS INSTEAD OF REMAINING SILENT AS MOST CHRISTIAN BUSINESSMEN DO.  
E. GOODWILLIE

- ED, I THANK GOD FOR YOUR COMMENTS. I TRULY WANT TO MAKE GOD THE CENTER OF NIAD, AS HE IS OF MY LIFE.

. I WOULD LIKE TO ANNOUNCE AN ADAM BBS IN TORONTO. IT IS ADAM NET, #594-2841.  
LORNE SHUMAK

. I JUST WANT TO SAY HOW MUCH I LOVE YOUR NEWSLETTER. I AM ALSO GLAD THAT YOU PUBLISH IT EVERY MONTH. I HAVE A QUESTION ABOUT FDUMP2. SAY I READ BLOCK 34 WHICH I HAD A FILE STORED THERE. HOW WOULD I DUMP IT SO I COULD LOOK AT THE FILE ? AND ANOTHER THING, ABOUT ADAMLINK II, I SENT IN THE CARD TO GET IT IN THE MIDDLE OF MAY AND STILL HAVEN'T GOT IT YET. WHAT SHALL I DO ?

M. VARGO

- THANKS MIKE. IN FDUMP2, AFTER YOU READ A BLOCK FROM

TAPE/DISK I BELIEVE YOUR A GIVEN THE OPTION TO PRINT IT OUT - NOT SURE WHAT YOUR PROBLEM IS, GIVE ME A CALL IF YOU STILL HAVE A PROBLEM. I MIGHT SUGGEST YOU USE UTTLDUMP, WHICH IS AN UPDATED VERSION OF FDUMP2. I SUGGEST YOU CALL COLECO'S HOTLINE AND INQUIRE ABOUT YOUR ADAMLINK II SOFTWARE - THEY ARE USUALLY HELPFUL. IF NO LUCK, LET ME KNOW.

. LYLE, I THINK DALE DECKER MAY HAVE A POINT (ISSUE #7) IN THAT SOME OF THE NIAD MATERIAL IS "ABOVE" NEWCOMERS' HEADS. HOW ABOUT A "BEGINNERS" COLUMN FOR YOUR WORKSHOPS ? THIS COULD BE A SMALL SECTION IN EACH ISSUE TO HELP BEGINNERS LIKE MYSELF IN AREAS LIKE LOGO, CP/M, SMARTFILER AND ADAMCALC. I THINK IT WOULD BE VERY BAD IF "BEGINNERS" AND NONPROGRAMMERS WOULD GET TURNED OFF TO NIAD BECAUSE SOME OF THE MATERIAL IS TECHNICAL IN NATURE.

D. ZIMMERMAN

- DON, THANKS FOR THE ADVICE. IN NO WAY DO I WANT TO DIS-SERVE ANY NIAD MEMBERS. MY GOAL IS TO PROVIDE SOMETHNKJG FOR ALL LEVELS OF ADAM USERS, FROM BEGINNER TO ADVANCED. ONE OF THE PROBLEMS IS THAT WE COVERED SOME BASIC INFORMATION ON ALL OF THE MAJOR SOFTWARE PRODUCTS YOU MENTION IN THE EARLY 1985 ISSUES AND I'M NOT SURE I SHOULD REPEAT IT EACH MONTH. I URGE ALL NEW MEMBERS TO OBTAIN THE BACK ISSUES FOR THIS BASIC INFORMATION. SEE MY CLINIC SECTION IN THE CPM 2.2 WORKSHOP THIS MONTH - DOES THIS HELP ?

## SOFTWARE EXCHANGE

NIAD SUPPORTS A SOFTWARE EXCHANGE FOR ALL MEMBERS IN ORDER TO SUPPLY PUBLIC DOMAIN AND NON-COPYRIGHTED PROGRAMS. "LIBRARIES" WILL BE MAINTAINED FOR EACH OF THE MAJOR SOFTWARE PRODUCTS BY A NIAD MEMBER. CURRENT LIBRARIANS ARE:

SMARTBASIC >>>>>>>> B. LENNES  
14637 ATLANTIC  
DOLTON, IL 60419

SMARTLOGO >>>>>>>> BARRY WALLIS  
2140 BESSANT ST  
SAN BERNADINO, CA 92404

ADAMCALC >>>>>>>> GREG VAN VALKENBURG  
701 POND VIEW DR  
AUDUBON, PA 19403

UTTLITTIES >>>>>>>> L. MARSCHAND

CPM 2.2 >>>>>>>> C. KOLANDER  
1295 A PEARL AVE  
GLENDALE HTS, IL 60139

## SOFTWARE EXCHANGE RULES:

NOTE: WE ARE CHANGING AND WILL ONLY PROVIDE LIBRARIES ON DDP, NOT DISK.

ADDITIONALLY, YOU HAVE THE OPTION TO PURCHASE A SPECIFIC LIBRARY FOR ONLY \$ 6.00 FROM THE NIAD PRODUCT LIST IF YOU DO NOT HAVE A PROGRAM TO EXCHANGE.

IN ORDER TO RECEIVE ALL THE LIBRARY PROGRAMS IN A SPECIFIC LIBRARY SEND A \*\* DDP ONLY \*\* WITH ONE PROGRAM FOR THE LIBRARY ( ALL PROGRAMS SHOULD BE TESTED AND WELL DOCUMENTED VIA A SEPARATE "README" FILE ) TO THE LIBRARIAN. INCLUDE A SELF ADDRESSED AND STAMPED RETURN MAILER. THE LIBRARIAN WILL COPY THE ENTIRE LIBRARY ON YOUR DDP AND RETURN IT TO YOU.

NOTE: I HAVE HAD SOME COMPLAINTS ABOUT THE REQUIREMENT OF SUBMITTING ONE PROGRAM TO GET THE SOFTWARE LIBRARY. PLEASE BE ADVISED THAT THESE PROGRAMS DON'T HAVE TO BE WRITTEN BY YOURSELF. THEY CAN BE ANY NON-COPYRIGHTED PROGRAM THAT YOU MAY GET FROM A BOOK OR MAGAZINE. YOU NON-PROGRAMMERS CAN DO US ALL A GREAT SERVICE BY TYPING IN THESE PROGRAMS, RUNNING THEM TO MAKE SURE THEY WORK AND SENDING THEM IN. I DON'T THINK THIS IS TOO MUCH TO ASK FOR WHAT YOU WILL RECEIVE. EVERYONE, PLEASE SUBMIT YOUR PROGRAMS TO CREATE AN EXPANSIVE LIBRARY FOR NIAD.

LIBRARY INDEX AS OF 8/21/85:

### SMARTLOGO VOLUME I # LNDVI:

- . COMPILER - A SET OF PROCEDURES TO TRANSFORM ALL PROCEDURES IN MEMORY INTO A DISK FILE WHICH WHEN LOADED WILL NOT DISPLAY THE DEFINING... SYSTEM MESSAGE.
- . MENU - A SET OF PROCEDURES TO DISPLAY MENUS AND ACCEPT ANSWERS.
- . ROCKET - A GAME (THE OPENING SCREEN IS A GOOD EXAMPLE OF LOGO ANIMATION).
- . BOMB - A NIFTY SOUND EFFECTS PROGRAM.
- . KEYBOARD -A PROGRAM TO PLAY MUSIC ON YOUR KEYBOARD.
- . LOGOTITLES - A SAMPLE OF SOME FANCY TITLING USING LOGO.
- . TURTLEHOP - A GAME LIKE FROGGER
- . ONE ARMED BANDIT - SLOT MACHINE GAME
- . EGGTIMER - GRAPHIC TIMER
- . ALPHABET - ALL THE LETTERS AND NUMBERS W/ DEMO PROGRAM

### ADAMCALC VOLUME I # ANDVI:

- . MONTHLY BUDGET
- . MONTHLY CHECKBOOK
- . CIS LOG - KEEPS TRACK OF YOUR TIME ON COMPUSERVE
- . INVENTORY - SMALL BUSINESS INVENTORY

UTILITIES VOLUME 1 # UNDAVI

- . UTILDUMP-SOPHISTICATED BLOCK READ (FROM DDP OR DISK), MEMORY DUMP ON PRINTER/SCREEN, EXPANDED DIRECTORY LIST
- . UTILCOPY - DISK/TAPE COPY PROGRAM
- . FONTEDIT - CREATE YOUR OWN FONTS FOR PRINTER, FATFONT INCLUDED
- . BKCOLOR - SET COLOR OF SCREEN, CHARACTERS
- . TOOLKIT - READ/WRITE, VIEW, SCAN/POKE IN MEMORY
- . KBEXAMPLE - SCANS FOR KEYS PRESSED, LOWRES DRAWING PGM INCLUDED

BASIC VOLUME 1

JBASIC VOLUME 2

VOLUME: FIRST DIR

VOLUME: NIADBASIC

A 2 BLOCKS  
 A 3 CANON3  
 A 3 DRUMDEMO  
 A 4 FONTEDITOR  
 H 3 FATFONT  
 A 3 ICECREAM  
 A 2 CONVERT  
 A 3 LIBERTY  
 A 5 CONCENTRAT  
 A 2 BARGRAPH  
 A 6 CRAYONS  
 A 2 NOISEMAKER  
 A 10 SPRITEDIT  
 A 6 MATH  
 A 6 TICTACTOE  
 A 4 HANGMAN  
 A 4 ZODIAC  
 A 2 3D  
 A 2 HELIX  
 A 3 DISPLAY  
 A 2 SPIRAL  
 A 6 MUSDEPART  
 A 4 BANNER  
 A 10 TICTACADAM  
 H 2 README

\*A 1 BACKGROUND  
 A 5 CRAYONS  
 A 2 KRYPTO  
 H 2 README  
 A 4 SAYINGS  
 A 3 HELLO  
 A 2 GRAPHIC1  
 A 4 MENUSELECT  
 A 2 SOLIDCIR  
 A 9 DRAWIT  
 A 2 CIRGEN  
 \*A 2 PATTERNS  
 \*A 2 SCHEDULE  
 A 1 RMADNESS  
 A 3 CANNONS  
 A 6 PICMAKER  
 A 8 TRUCKER  
 A 18 TK  
 \*A 3 SORT  
 \*A 1 DICE  
 \*A 2 SPHERE  
 \*A 1 3-DPLOTTER  
 \*A 4 3DROTATE  
 \*A 4 METRICCONV  
 \*A 1 PLANETS  
 A 9 SHOPPING

59 BLOCKS FREE

57 BLOCKS FREE

CP/M VOLUME 1

R: / COM 1k : / DOC 1k : ADAMFIL COM 1k  
 B: ADMBOOT AQM 6k : ADMBOOT COM 2k : BACKUP COM 3k  
 B: CREATE3 AQM 6k : CREATE3 COM 1k : CREATE3 DOC 4k  
 B: DISPLAY COM 3k : DISPLAY DOC 3k : HALLEY BQS 4k  
 B: HALLEY DQC 2k : HALLEYS BQS 4k : INVENTY COM 33k  
 B: MARKET COM 17k : MODEM7 DQC 9k : MODEM7MM COM 10k  
 B: MODEM7MM DQC 2k : README DOC 1k : SD COM 2k  
 B: SD DOC 1k : SDDU AQM 7k : SDDU COM 1k  
 B: SQZ COM 6k : UNERA19 COM 2k : USQ COM 10k  
 B: TOTAL OF 142K IN 27 FILES WITH 3K SPACE REMAINING.  
 A>

CP/M VOLUME 2

R: -CNPVOL 002 1k : ADAMTE ASM 3k : BACKUP COM 3k  
 R: BASEBALL COM 25k : CATPAGE COM 4k : COMMON COM 1k  
 R: FIND COM 1k : FMAP COM 4k : IOMAP COM 1k  
 B: LRUN20 COM 2k : LU300 DOC 35k : LU310 COM 20k  
 B: M7ADAM-1 ASM 10k : M7FNK COM 3k : M7FNK DOC 2k  
 B: M7LIB COM 2k : M7LIB DOC 3k : MDM740 COM 19k  
 B: READ ME 1k : SECURE COM 1k : SPLIT COM 1k  
 B: UCAT COM 2k  
 R: TOTAL OF 144K IN 22 FILES WITH 3K SPACE REMAINING.  
 A>



# CP/M2.2

## CP/M VOLUME 3

B: -CNPDVOL 003 1k : CPMUTIL COM 2k : DDTX3A COM 1k  
B: DIRR COM 3k : DIRR DOC 5k : EBASIC LBR 32k  
B: EDIT COM 2k : EDIT11 DOC 13k : LASM LBR 9k  
B: MAKESUB2 COM 1k : MULTCOPY COM 2k : NSWP COM 11k  
B: NSWP DOC 11k : NU11LU COM 15k : PRINTSQ COM 9k  
B: PRINTSQ DOC 1k : SLOAD COM 3k : SORT COM 9k  
B: SQ110 COM 6k : SQ111 DOC 4k : USQ120 COM 2k  
B: TOTAL OF 142k IN 21 FILES WITH 3k SPACE REMAINING.  
A>

## CP/M VOLUME 4

B: -CNPDVOL 004 0k : CATLBR LBR 33k : MCAT-41 LBR 66k  
B: NU11LU COM 15k : ZASM LBR 30k  
B: TOTAL OF 144k IN 5 FILES WITH 3k SPACE REMAINING.  
A>

## CP/M VOLUME 5

B: -CNPDVOL 005 0k : DUU COM 7k : SDCPY COM 2k  
B: VDD25 COM 7k : XMODEM8 AQM 6k : XMODEM8 COM 2k  
B: Z80 LBR 116k  
B: TOTAL OF 140k IN 7 FILES WITH 3k SPACE REMAINING.  
A>

## CP/M VOLUME 6

B: -CATALOG 001 1k : ABSTRACT 001 2k : AD COM 39k  
B: ADAMDOC HLP 2k : ADVENTUR MSG 63k : ATAB DAT 2k  
B: BACKUP COM 3k : COMMON DAT 4k : KTAB DAT 1k  
B: LTEXT DAT 1k : READ ME 2k : RTEXT DAT 1k  
B: SCNCHOP COM 2k : STEXT DAT 1k : TRAVEL DAT 5k  
B: TOTAL OF 129k IN 15 FILES WITH 3k SPACE REMAINING.  
A>

## CP/M VOLUME 7

B: ADAMTE ASM 3k : DIRR COM 3k : DIRR DOC 5k  
B: NSWP COM 11k : NSWP DOC 11k : PIP COM 8k  
B: SINGCPY LBR 13k  
B: TOTAL OF 54k IN 7 FILES WITH 3k SPACE REMAINING.  
A>

CONTINUED FROM FRONT PAGE>>>

THE MAIN POINT HERE IS THAT THE ONLY WAY TO RECEIVE THIS GIFT IS BY CONFESSING OUR SINS AND ASKING THAT THEY BE FORGIVEN THROUGH THE SACRIFICE OF JESUS ON THE CROSS.

I URGE YOU TO ASK JESUS TO COME INTO YOUR LIFE AND CLEANSE YOU FROM THESE SINS THAT YOU MAY BE RE-UNITED WITH GOD. I CAN PERSONALLY TESTIFY THAT THE BLESSINGS WILL FLOW OUT LIKE A RIVER, YOUR LIFE WILL BE CHANGED DRAMATICALLY AND YOU WILL BE ASSURED OF A PLACE IN HEAVEN WITH GOD FOR ETERNITY.

GOD BLESS YOU ALL.

*Steve M. ...*

**PRODUCT LIST**  
 \*\*\*\* NIAD BUYING SERVICE PRODUCT LIST \*\*\*\*

HARDWARE/ ACC'S                      PRICE                      NEW ADAM PERIPHERALS                      NIAD PUBLIC DOMAIN SOFTWARE

\*\* COST IS \$6.00 FOR EACH VOLUME \*

ADAM DISK DRIVE 7817            \$185.00  
 ADD'L DATA DRIVE 2409        \$135.00  
 MODEM 7818                        \$ 69.95  
 COMPUERVE STARTER KIT         \$ 25.95  
 ADDRESS BOOK/AUTO  
 DIALER 7815                        \$ 31.95  
 64k EXPANDER 2562                \$ 99.95  
 COLECO DATA PACKS 2564        \$ 4.75n  
 COLECO DATA PACKS (10)        \$ 39.95  
 FAST FORWARD DDPS                \$ 3.55n  
 FAST FORWARD DDPS (10)        \$ 29.95  
 RIBBONS 7806                        \$ 4.95  
 PRINTER WHEELS (Qume)         \$ 5.55  
 SPECIFY FONT DESIRED  
 MONITOR CABLE 7830                \$ 9.95  
 TDK DISKETTES (Box of 10)       \$ 17.95  
NEW DUST COVERS -3 PIECES        \$ 18.95  
NEW TRACTOR FEED FOR ADAM        \$ 79.95  
NEW PRINTER STAND/FRONT ON/OFF \$ 18.95

EVE SP-1 RS232/PARALLEL  
 INTERFACE CARD                    \$139.95  
 SP-1 PARALLEL CABLE            \$ 17.95  
 PANASONIC 1090 PRINTER \$239.95  
 PANASONIC 1091 PRINTER \$299.95  
 PANASONIC 1092 PRINTER \$399.95  
 STAR SG10 PRINTER                \$279.95

SMARTBASIC  
 VOLUMES I-2 #BNDVI-2  
 SMARTLogo  
 VOLUME I #LNDVI  
 ADAMCALC  
 VOLUME I #ANDVI  
 BASIC UTILITIES  
 VOLUME I #UNDVI  
 CPM 2.2  
 VOLUMES I-7 #CNDVI-7

MONITORS:

AMDEK300 COLOR MONITOR \$259.95  
 AMDEK TILT/SWIV STAND \$ 39.95  
 PANASONIC COLOR MON \$219.95

PRINTER ACC'S:

PANASONIC RIBBONS P110 \$ 9.95  
 PANASONIC 4K BUFFER EXP \$ 69.95  
 STAR RIBBONS                        \$ 2.95  
 STAR 4K BUFFER EXP                \$109.95

SOFTWARE (DDP UNLESS NOTED)

SMART LOGO 7600                    \$ 51.95  
 EXPERTYPE 7602;9610 DSK        \$ 31.95  
 SMART FILER 7813;9656 DSK       \$ 15.95  
 RECIPE FILE 7814;9657 DSK       \$ 15.95  
 SMART LTRS/FORMS  
 7805;9613 DSK                        \$ 20.95  
 FLASHCARD MAKER 7662             \$ 20.95  
 FLASHFACTS (TRIVIA 2902,  
 HISTORY 2901,VOCAB 2900)        \$ 11.95n  
 ADAMCALC 7831                        \$ 31.95  
 R. SCARRY'S WORDBOOK 7658       \$ 20.95  
 DRAGONS LAIR 2683                  \$ 24.95  
 WACKY WORD GAME 7834              \$ 15.95  
 CPM 2.2 & ASSEMBLER  
 7832                                    \$ 49.95  
 SUPER ZAXXON 2623                  \$ 24.95  
 BEST OF BRODERBUND: AE &  
 CHOPLIFTER 7850                    \$ 24.95  
NEW HOME SOFTWARE LIBRARY 7826 \$ 54.95  
 \*2010: TEXT ADVENTURE  
 GAME BY MGM/UA 7849                \$ 20.95  
NEW FAMILY FEUD 7710                \$ 20.95  
 \*JEOPARDY 7716                        \$ 20.95  
 \*BEST OF ELECTRONIC ARTS:  
 HARD HAT MACK & PINBALL  
 CONSTRUCTION SET 7852              \$ 20.95

EVE ME-64 64K MEMORY EXPANDER \$ 79.95  
 EVE SS-CC SPEECH SYNTHESIZER/  
 CLOCK CALENDAR                    \$ 89.95  
 \* EVE VD-MB 80 COLUMN VIDEO/  
 MOTHER BOARD/ POWER SUPPLY    \$ CALL  
 EVE MULTI UNIT ADAPTER  
 (REQ'D TO USE SP-1 WITH SS-CC)    \$ 44.95

OTHER SOFTWARE - SPECIFY DDP OR DISK

BOUNTY HUNTER VS4048 \$19.95  
 ADVENTURE PK I VS4011 \$19.95  
 ADVENTURE PK II VS4015 \$19.95  
 TREK VS5004                        \$19.95  
 SAVINGS & LOAN VS5051 \$19.95  
 VIDEOTUNES (DDP ONLY) \$26.95  
 (FUTUREVISION)  
 RIB I/ II (DDP ONLY) \$26.95  
 EXT BASIC UTILITIES                \$18.95  
NEW FANTASY GAMER (DDP)            \$29.95  
 BASIC BONANZA                        \$29.95  
 DIABLO                                 \$19.95  
 STRATEGY PACK I                      \$16.95  
 GAMES PACK I                         \$16.95  
NEW SOFTPACK I                        \$18.95

CARTRIDGE SOFTWARE

DAMBUSTERS 2686                    \$18.95  
 ILLUSIONS 2621                      \$18.95  
 BC II: GROG'S  
 REVENGE 2620                        \$18.95  
 SPYHUNTER 2617                       \$18.95  
 TAPPER 2616                         \$18.95

PRICES VALID 8/22 TO 9/22/85

\*ITEMS NOT YET AVAILABLE

BOOKS

CP/M USER'S GUIDE BY                \$ 15.95  
 FIRST BOOK OF ADAM - BASIC  
 BY P. ROTH                            \$ 10.95  
 2ND BOOK OF ADAM - SMARTWRITER \$ 7.95  
 PROGRAMMING ADAM: HOME APPLI-  
 CATIONS IN THE BASIC LANGUAGE  
 BY E. CLAFIN AND J. HEIL            \$ 5.95

This is an example of Gothic 12 # 89750, a Qume Superstrike print wheel.

This is an example of WP Script 12 # 82181. Note these special characters:    © ¶ ™

This is an example of Elite 12 # 89753, a Qume Superstrike print wheel.

THIS IS AN EXAMPLE OF ORATOR 90 # 89757, A QUME SUPERSTRIKE PRINT WHEEL.

This is an example of Courier 72 # 89761, a Qume Superstrike print wheel.

NIAD PRODUCT CATALOG

PERIPHERAL'S DESCRIPTION

\*\*\* PRINTERS \*\*\*

PANASONIC KX-1090

- . TYPE: 9x9 DOT MATRIX
- . SPEED: DRAFT MODE -80CPS (PICA); 96 CPS ELITE
- . PRINT CHAR:BI-DIRECTIONAL; 96 CHAR W/ASCII DEC'S  
NORMAL, ELONGATED,CONDENSED,SOME GRAPHICS
- . MEDIA HNDL:ADJ TRACTOR FEED, FRICTION FEED  
4" to 10" PAPER
- . INTERFACE: CENTRONICS 8 BIT PARALLEL
- . BUFFER: 1K STANDARD - 4K ADD'L OPTIONAL
- . SIZE: 4.5"x15.9"x11.3"; WEIGHT 15.5 LBS
- . FEATURES: 2 YEAR LIMITED WARRANTY

PANASONIC KX-1091

- . TYPE: 9x9 DOT MATRIX
- . SPEED: DRAFT MODE -120 CPS (PICA & ELITE);  
NEAR LTR QUAL - 22 CPS; PROPRTIONL -75
- . PRINT CHAR:BI-DIRECTIONAL; 96 CHAR W/ASCII DEC'S  
NORMAL, ELONGATED,CONDENSED,IBM GRAPHICS  
ITALICS, IBM SPECIAL CHAR'S
- . MEDIA HNDL:ADJ TRACTOR FEED, FRICTION FEED  
4" to 10" PAPER
- . INTERFACE: CENTRONICS 8 BIT PARALLEL
- . BUFFER: 1K STANDARD - 4K ADD'L OPTIONAL
- . SIZE: 4.5"x15.9"x11.3"; WEIGHT 14.6 LBS
- . FEATURES: 2 YEAR LIMITED WARRANTY

PANASONIC KX-1092

- . TYPE: 9x9 DOT MATRIX
- . SPEED: DRAFT MODE -180 CPS (PICA & ELITE);  
NEAR LTR QUAL - 33 CPS; PROPRTIONL -112
- . PRINT CHAR:BI-DIRECTIONAL; 96 CHAR W/ASCII DEC'S  
NORMAL, ELONGATED,CONDENSED,IBM GRAPHICS  
ITALICS, IBM SPECIAL CHAR'S
- . MEDIA HNDL:ADJ TRACTOR FEED, FRICTION FEED  
4" to 10" PAPER
- . INTERFACE: CENTRONICS 8 BIT PARALLEL
- . BUFFER: 7K STANDARD - 4K ADD'L OPTIONAL
- . SIZE: 5.4"x16.3"x13.8"; WEIGHT 19.6 LBS
- . FEATURES: 2 YEAR LIMITED WARRANTY

STAR 10G

- . TYPE: 9x9 DOT MATRIX
- . SPEED: DRAFT MODE - 120 CPS; NLQ -30 CPS
- . PRINT CHAR:BI-DIRECTIONAL, NORMAL,ELONGATED, CONDSD  
ITALICS, IBM GRAPHICS/ SPECIAL CHAR"S
- . MEDIA HNDL:ADJ TRACTOR FEED,FRICTION FEED  
4" TO 8 1/2 "
- . INTERFACE :CENTRONICS 8 BIT PARALLEL
- . BUFFER: 2K STANDARD
- . FEATURES: 140 DOWNLOADABLE CUSTOM CHARACTERS

SP-1 RS232/ PARALLEL INTERFACE

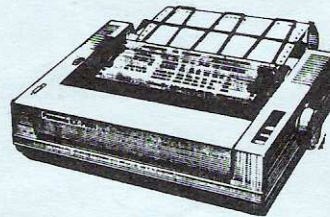
- . ALLOWS CONNECTION TO OTHER PRINTERS
- . SOFTWARE INCLUDED FOR PRINTING FROM CPM AND BASIC
- . PLUGS INTO THE ADAM EXPANSION SLOT

VD-MB 80 COLUMN VIDEO BOARD

- . INCLUDES POWER SUPPLY AND MOTHER BOARD SLOTS
- . OUTPUTS 80 COLUMNS TO MONITORS
- . EMULATES POPULAR VT 52/ H-19 SCREEN HANDLING
- . EXPANDS ADAM FOR USE WITH MANY 80 COLUMN SCREEN  
ORIENTED PROGRAMS
- . INCLUDES LIGHT PEN PORT CONNECTION

SS-CC SPEECH SYNTHESIZER & REAL TIME CLOCK

- . OUTPUT A VOICE FROM CPM AND BASIC
- . SOFTWARE INCLUDED FOR PHONEMES AND CLOCK
- . REQUIRES USE OF 64K EXPANDER FOR VOICE LIBRARY



\*\* MONITORS \*\*

AMDEK COLOR 300 COMPOSITE

- . CRT TYPE: 13" 90 DEG INLINE DARK; P22
- . DOT PITCH: .63 MM
- . RESOLUTION: 260 HOR x 300 VERTICAL
- . SIZE: 14.3 x 12.4 x 15.7 "
- . AUDIO: YES
- . OPTIONS: TILT SWIVEL STAND

PANASONIC S101 COMPOSITE

- . CRT TYPE: 10" 90 DEG INLINE DARK; P22
- . DOT PITCH: .63 MM
- . RESOLUTION: 250 HOR x 300 VERTICAL
- . SIZE: 10.3 x 11.2 x 13.4 "
- . AUDIO: YES
- . FEATURES: TILT SWIVEL STAND; BLK & WHITE DISPLAY

" For God so loved the world that he gave his one and only SON, that whoever believes in him shall not perish but have eternal life. For God did not send his SON into the world to condemn the world, but to save the world through Him. Whoever believes in Him is not condemned, but whoever does not believe stands condemned already because he has not believed in the name of God's one and only SON.".....John 3:16-18

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