



MULTI-FUNCTION USER GROUP
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Happy Easter to you all.

Easter is a time of renewal, winter turns to spring through the miracle of the seasons. Trees, shrubs and plants that appeared dead suddenly blossom to life, just as Jesus, who everyone thought was dead, rose from the dead to fulfill his prediction. This was the birth of Christianity. The authenticity of Christ's resurrection is beyond doubt, being proved to be a historical fact. If this wasn't true and Jesus died on the cross, Christianity would have died with him. Please consider the fact that Jesus died for our sins and offers forgiveness and eternal life this Easter for YOU.

Continuing our study of Romans Chapter 2 -

¹²All who have sinned without the law will also perish without the law, and all who have sinned under the law will be judged by the law. ¹³For it is not the hearers of the law who are righteous before God, but the doers of the law who will be justified. ¹⁴When Gentiles who have not the law do by nature what the law requires, they are a law to themselves, even though they do not have the law. ¹⁵They show that what the law requires is written on their hearts, while their conscience also bears witness and their conflicting thoughts accuse or perhaps excuse them ¹⁶on that day when, according to my gospel, God judges the secrets of men by Christ Jesus. ¹⁷But if you call yourself a Jew and rely upon the law and boast of your relation to God ¹⁸and know his will and approve what is excellent, because you are instructed in the law, ¹⁹and if you are sure that you are a guide to the blind, a light to those who are in darkness, ²⁰a corrector of the foolish, a teacher of children, having in the law the embodiment of knowledge and truth - ²¹you then who teach others, will you not teach yourself? While you preach against stealing, do you steal? ²²You who say that one must not commit adultery, do you commit adultery? You who abhor idols, do you rob

temples? ²³You who boast in the law, do you dishonor God by breaking the law? ²⁴For, as it is written, "The name of God is blasphemed among the Gentiles because of you." Paul begins by addressing the question of whether only the hearers of the Jewish law (the Jewish nation) will be judged by the law. Paul says in verses 13/14 that it is the doers of "...by nature what the law requires..." that will be justified. He states that if a Gentile who hasn't heard and doesn't have the law follows the principal of the law, he can be justified. Verse 15 states that "They show what the law requires is written on their hearts...". This is a very important principal of Gods that is easy to lose sight of. God knows our hearts, not what we "appear" to be. We may be able to fool some of our friends but God knows us, deep down inside. On the other hand, we tend to judge people by outward actions and what they say, oftentimes with a critical spirit. Their are two errors in this, one that we require a certain behavior or adherence to a set of laws before we conclude that someone is a Christian and two, that if we see some behavior that is not "right" according to our standards we judge someone as not being a Christian. Both of these are wrong, God does not require perfect behavior to give someone eternal life, otherwise their wouldn't be anyone who qualifies! Also, just because someone acts and says things according to church rules does not mean that he is a Christian and destined for eternal life. Beginning in verse 17 Paul asks the Jewish leaders (and all of us who act as some of them did) if they boast in the law but judge others critically for doing the same things they do. We all need to ask ourselves this. It is far too easy to look critically on others and ignore our own faults. God teaches us to love others as He loves us, which is with a forgiving, merciful love. Won't you accept God's love for you today and ask him to forgive your sins so you can be assured of eternal life and salvation? God bless you all.

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NIAD NEWS/ UPDATES

Well, things are finally starting to slow down here at NIAD headquarters. February was something else - we processed 220 new members in addition to a ton of renewals and orders. March is getting back to almost normal, thank God.

We think you'll enjoy this issue, we have a good mixture of helpful information and some great programs. We have included an ADAM maintenance section to help you maintain your equipment and diagnose problems.

ANNOUNCEMENTS

- Chicago local chapter meetings are held the second Thursday of each month, 7:30 PM at the College of DuPage, Student Resource Center, which is the large glass building containing the cafeteria on the east side of Lambert road. The college is located at the intersection of Lambert and 22nd streets in Glen Ellyn, Il, just west of highway 53 on highway 56 (Butterfield Rd) and then north on Lambert; or take Rt 38 (Roosevelt Rd) west from 53 and go south on Lambert. Call the college at 858-2800 for more directions if required.

The next meeting will be held on April 9th in room 2020A. We'll be giving demos of new programs, instruction for Basic programming, answering questions and in general have a good time with fellow ADAMites. I'll have basic supplies for sale - tapes, ribbons and some of the new software. The March meeting was attended by about 30 people and 5 received door prizes. Plan to attend and learn more about your ADAM.

- We have had several inquiries regarding people who are looking for new/ used ADAMs to buy and those who want to sell used ADAMs. We will make these referrals as we can. NIAD will also buy any used WORKING ADAMs for \$150 - contact us for more information.

- We have found a source for NEW digital data drives which we are selling for \$29.95.

- Prices for new ADAM keyboards and hand controllers have been raised.

- We have purchased some of the best and hardest to find cartridges, including DAMBUSTERS, TAPPER, TARZAN, WARGAMES, HERO and BEAMRIDER - get them while they last !

- Sega has come out with some great new games for the Sega Game System (not compatible with the ADAM), see our updates in this issue.

- SASE's are required for all requests for information and correspondence. Please help us by addressing and stamping a return envelope. Also, if you are requesting multiple pieces of information include extra postage.

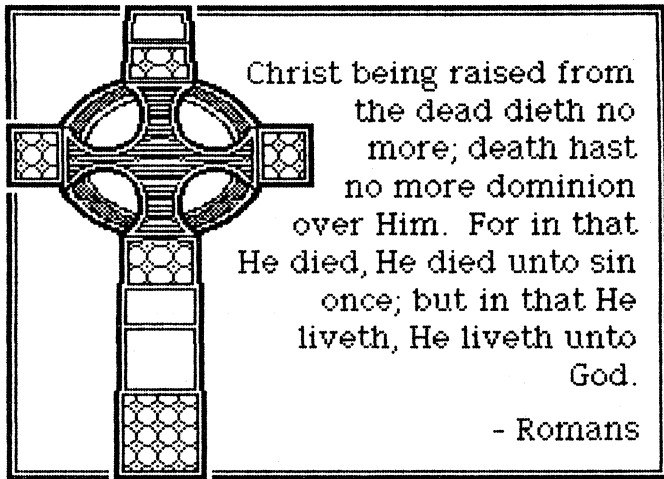
- Your renewal is due if the first 4 digits of your member number as displayed on your envelope are 0487.

. Mike Keith has created a nice collection of SIGNSHOP pictures and has volunteered to become our SIGNSHOP librarian. Send one SIGNSHOP picture to Mike on a tape/ disk with return postage and a mailer and he will send you the PD pictures back. Mike Keith, United Methodist Church
P.O. Box 368
Fredicktown, MO 63645
We're offering a special of both the SIGNSHOP program and either SIGNS Vol's 1 or 2 for \$27.95. SIGNSHOP is one of the most popular programs for he ADAM

. There is evidently some confusion as to the functions of GRAPHIXPAINTER and GRAPHIXPIX I. GRAPHIXPAINTER was reviewed in the November/ 86 issue and is a graphics printing program for dot matrix printers.

GRAPHIXPIX I was reviewed in the Dec/ Jan issue and is a graphics display program for which a dot matrix printer is NOT required. Both programs contain several high resolution graphics pictures.

We're offering a special of both GRAPHIXPIX I and one of the three PAINTINGS volumes (1,2,3) for only \$19.95 since GRAPHIXPIX I can display pictures created by the PAINTMASTER drawing program. You will be very impressed by these pictures !



. NEW SOFTWARE

More new products are coming out for the ADAM. We have reviews this month on -

- MICROWORKS, a fully integrated set of five productivity programs for home/ small business. See the March issue for the first part of the review.

- HOME FILE MANAGER, a simple data base program with mailing label print options that allow the managing of large numbers of names/ addresses.
- PERSONAL CHECKBOOK, an easy to use program for managing and balancing you check book.

. Next month we will have reviews on the following new programs -

- BASICAID from MR T. software, containing some great utilities for the Basic programmer including 40 column text and fast loading of Basic programs.

- BASIC MANAGER from Practical programs, a comprehensive set of Basic enhancements and utilities (this is a greatly enhanced version of an earlier program release).

- LAB MOUSE from Reedy Software, a "first person" game where you are the mouse, running a maze.

. We'll also have reviews of some more of the Parallel Software products - STATES & CAPITALS and GREAT INVENTIONS from Parallel Software.

. Strategic Software is working on PROOFREADER, which is a spelling checker for SMARTWRITER files. Boy do we need this one !!

. Walter's Software is working on a new release of MEDIA AID, which will include even more great utilities.

. Reedy Software is working on an improved version of their SMARTTYPE printing program.

. Digital Express is near completion of SHOWOFF 2, which provides some corrections and improvements to the SMARTWRITER word processor.

. HARDWARE

- No good news on disk drives. The new Coleco drives are gone I'm afraid. We mentioned that Don Pearlman is working on a compatible double sided drive for the ADAM. These units have NOT been produced yet. We do not recommend sending any money for these drives until we verify that they are available and are in fact ADAM compatible. We have not been able to verify this information as of this writing. Based on some information from others we stress that you should not pre-pay any orders ! A couple of other developers are also considering building ADAM compatible drives, so don't give up hope.

- Other hardware is readily available - modems, data drives, etc.

- See the February issue for where to buy complete new ADAMS, consoles and printers.

- We will have a review next month a of a hardware/ software device that will allow the formatting of drilled audio tapes directly on the ADAM.

. ITEMS OF INTEREST

- New Bulletin Board Systems up are -

.. Eve Electronic systems (24 hours) (617) 376-5161

.. Brigadoon BBS (7 days, 8PM to 8AM Pacific time) (206) 723-5631. When you call let the Sysop know you are an ADAM user. The ADAM section is Cabbage patch !

- Alan Neely's BBS has a new number: (801) 484 5114 (Utah) 7PM to 7AM

- The Cobra BBS is off the air to a lack of use (this was a combination Atari/ ADAM board). Many people are putting alot of work into bringing up these BBS' so let's support them.

- Bob Wright of Maine is very knowledgeable in setting up a BBS on the ADAM, contact him at (207) 929-8286. This same number will get on his BBS from 11PM to 7AM daily and until 12 Noon on weekends.

- There is a really great program on the CLUB forum on Comuserve called inchworm. Download it and enjoy.

- The following is taken from a recent issue of Software News:

"Seven software publishers have joined in a copyright infringement suit against a Canadian club whose members "review" rented packages. In a joint action with the Software Publishers Association, the plaintiffs claim Softsave Preview Club of Vancouver, British Columbia, illegally

encourages coping by allowing members to "review" software for three weeks, then requiring them to destroy rented disks, for which they have paid \$10 and received little or no documentation."

I understand that there are some groups doing this with ADAM software - better watch out !!

ADAM MAINTENANCE

GENERAL PROBLEMS

Locking up of the entire system or getting strange patterns on the screen may occasionally occur.

This is usually due to overheating, electrical power problems on your line or bad connections of the cables. It is a good idea (with the power off) to disconnect and reconnect all your cables occasionally to insure the contacts are making a good connection.

The ADAM Diagnostic Public Domain program (see product list) is good for determining any general problems with your memory unit, keyboard, tape drive or printer.

TAPE DRIVES

The read/write heads (metal block at the bottom center of the drive) should be cleaned every few months, depending on use, with a drive head cleaning solution of alcohol to prevent I/O errors. When a drive goes bad it is either the motor (which you can usually hear) or the read/write mechanism which is evidenced by problems loading or writing to tapes. When this occurs (if the drive heads are clean) you will not be able to read any tapes. If your tape is bad, obviously other tapes will work fine.

PRINTER PROBLEMS, ETC.

I thought we could give you some basic information on self-correcting some common problems with the ADAM printer, which is great little letter quality printer, but like any mechanical device problems can occur. If you perform the following general maintenance, you will be less likely to have to make a trip to Honeywell for repairs.

GENERAL MAINTENANCE

Dust is a real problem for printers and you should always keep your printer covered when not in use. There are 2 chrome plated bars that the ribbon cartridge rides on as it goes back and forth. These bars should be lubricated with a small amount of a dry silicone lubricant (such as Dupont Teflon Dry Lubricant or Fuller Transmission Silicone Lubricant, available at automotive or hardware departments) on a soft rag every 2 months. If you don't do this the carriage will tend to hang up at times resulting in uneven spacing between letters or uneven margins.

INITIAL TROUBLESHOOTING

When turning the ADAM on the following sequence should occur:

1. Print mechanism should move all the way to the left edge.
2. The daisy wheel should spin briefly.
3. The platen should advance one line.
4. The print mechanism moves to the right about 1 inch.

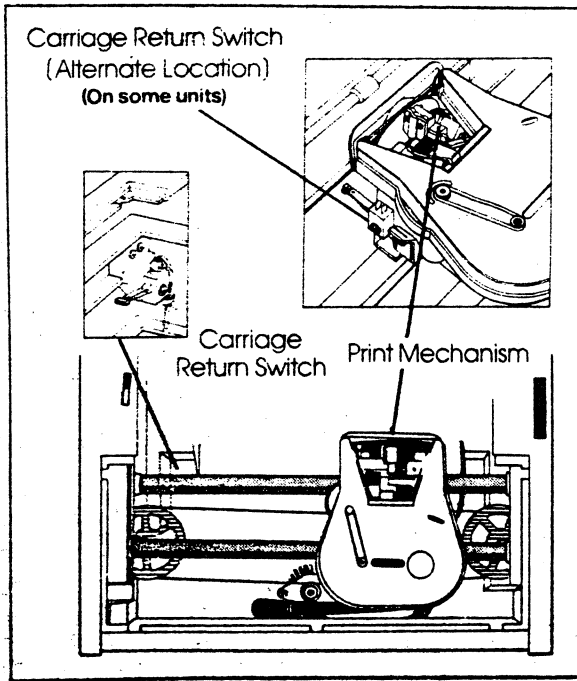
If the above does not occur, then do the following

1. Roll the paper advance knob (top right of the printer) back and forth to make sure the mechanism is not jammed.
2. Turn the ADAM off, remove the cover on the printer by pulling up on both front edges and examine the carriage return switch (see below) on the left side. If the connectors are open even slightly, carefully bend them so that the upper bar is parallel to the base of the printer and the two electrical contacts are making good contact. You may also need to clean the contacts with a small amount of alcohol.
3. Check for any obstructions, preventing full travel of the print mechanism.
4. Check that the cable is tightly wound.
5. Make sure the chrome bars are lubricated as described above.

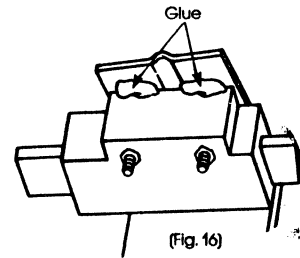
LIGHT PRINTING

Light printing may be caused by the ribbon not being advanced properly. While printing, remove the printer cover and watch the ribbon and see if it advances every character. If not remove the ribbon (refer to your ADAM manual as to how to do this) and advance it by hand using the knob on top of the ribbon cartridge, in the direction indicated. If the ribbon is hard to advance and there is still ribbon material remaining on the right side, the cartridge is binding up and the ADAM printer can't advance the ribbon as needed to maintain a dark print image. You can fix this by opening up the ribbon cartridge, using a small screwdriver to pry the top off the bottom half at the seams. If the left spool is more than half full this may be causing the ribbon to not advance properly. You can cut the ribbon, remove the used ribbon on the left spool, reattach the ribbon to the spool by winding it around a few times and replacing the top.

If the ribbon does advance freely by turning the knob, then the problem may be in the ADAM printer ribbon advance. Remove the ribbon, print something and watch the ribbon drive mechanism, if it does not turn with every keystroke, it will need repair by Honeywell.

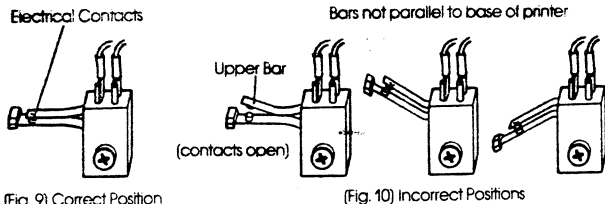
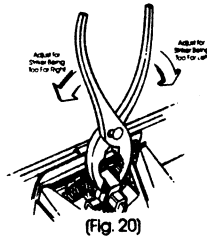
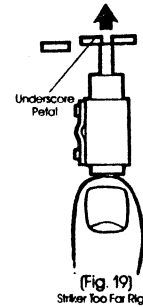
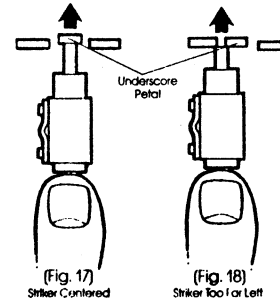


After adjustment is complete apply 2 drops of cyanoacrylate glue (Super glue, Eastman 910, or equivalent) as shown in Fig. 16.



If print displays part of adjoining character or double characters, adjust print hammer in the following manner:
EXAMPLE: 333 33 33 33 33 33 33 33 33 33 33 33 33 33 33 33 33 33

- Remove printer cover
- Turn system on and insert paper.
- Using space bar move print head assembly to center of page and then strike underscore key. This is done by holding down the shift key and then striking the number 6 key.
- Push the metal hammer striker forward with your thumb and observe if striker is centered on underscore petal. (Figs. 17, 18 and 19.)
- If hammer striker is not centered on the daisy wheel petal, adjust slightly as shown in figure 20 until hammer striker is centered. (See Fig. 17.)



Carriage Return Switch

MIS-PRINTING OF CHARACTERS

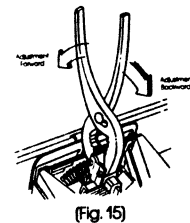
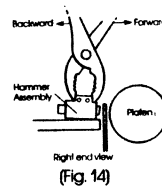
If characters are not evenly printing i.e. either the top or bottom half is cut off or faint, the problem may be that the ribbon is not properly inserted in the printer (see your ADAM manual for how to insert the ribbon) or that the print head needs adjustment (see below). NOTE: The newer printer models do not have the type of print head illustrated below, they can be adjusted via two screws on the left and right that hold the cylindrical print head in place).

If your Adam printer prints either light on the top or bottom of characters, refer to figures below for adjustment procedures.

EXAMPLE: ooooooo
If characters are light on top, adjust hammer assembly slightly forward. (Fig. 15)

EXAMPLE: ooooooooo
If characters are light on bottom, adjust hammer assembly slightly backwards. (Fig. 14)

When adjusting, grasp hammer assembly with pliers as shown below in Fig. 14.



MISCELLANEOUS

Occasionally, the printer will lose track of the left margin and start printing in the middle of a page. I have found that this usually occurs when the printer is hot after a few hours of operation. By turning the system off for a half hour it usually clears up.

DISK DRIVES

The most common problems with disk drives are ones due to wear and tear on the drive mechanism itself, resulting in the need to have the drive cleaned and re-aligned. If you begin to experience occasional read/write or I/O errors, this is usually the cause.

One problem results from using cheap diskettes, that are now readily available. These cheap diskettes can "gum up" the drives read/write head resulting in numerous problems. I recommend a

wet/dry drive head cleaning kit for cleaning your read/write print head every few months, depending on use (NIAD now carries the PerfectData head cleaning kit containing two cleaning diskettes and cleaning fluid).

Other common problems are being able to read a diskette, but not being able to write to it. This is usually caused by a bad photo sensor that is supposed to determine whether the diskette has a write protect tab on it (the little notch on the left of the diskette). There is also a sensor that determines when a diskette has been placed in the drive - if this goes bad, the software doesn't know that a diskette is present.

REPAIR of disk drives is done by Eve Electronics (may take several weeks)

320 Union St
Millis, MA 02054

Cost is a flat \$39.95 plus parts, if needed.

For the common problems described above, you may be able to find a local disk drive service company that will do cleaning and re-alignment for the ADAM drive. Just tell them that it is a MPI drive mechanism (MPI is a common disk drive mechanism used in different computer drive units).

PUBLIC DOMAIN WORKSHOP

Documentation

Some of you have written lately stating that the Public Domain tapes did not come with documentation on how to operate the programs contained on them. Any documentation required for the PD programs is contained in one or multiple files on the PD tape/disk itself. On the Basic and Utilities PD volumes these files can be accessed and printed via SMARTWriter. Do a "Get Directory" on the tape/disk from SMARTWriter and look for any files with the word "DOC" or "README" in them. These files should be printed out and read before trying to run any of the programs. On the CP/M volumes the doc files can be printed out using the TYPE command.

Some of the programs may also contain instructions which are displayed as the program is run.

Speaking of documentation, there have been some questions as to how to use the UTILCOPY program contained on PD # UNDV1 to make backup copies if you only have one tape drive. Here is a step by step -

Using UTILCOPY to copy on a single tape drive system -

1. After you have loaded Basic, then RUN UTILCOPY, you are given the option to copy or quit.
2. Select copy (SmartKey V)
3. The next option screen allows you to change the source and/ or destination drives.

4. Do NOT make any changes if you have only one tape drive.

5. Select COPY (SmartKey V)

6. ADAM tells you to insert the source tape. Insert the original tape you want to make a copy of. Hit CONTINUE (SmartKey VI).

7. ADAM will start to read the source tape in drive 1. After it has read a portion of the tape (UTILCOPY reads 16 blocks of data at a time - there are 256 blocks on a tape) it then transfers the data to the destination drive.

8. UTILCOPY will stop and ask you to insert the destination tape in drive 1. Take out the original (source) and put in the destination tape. Hit CONTINUE and ADAM will copy the first 16 blocks of data to the destination tape.

9. ADAM now stops and asks you to re-insert the original (source) tape so it can read the next 16 blocks. Do so and hit CONTINUE.

This process will continue until you have copied the entire original tape to the destination. MAKE SURE YOU DON'T PUT IN THE ORIGINAL TAPE WHEN YOU ARE SUPPOSED TO PUT IN THE DESTINATION TAPE OR YOU MIGHT DESTROY YOUR ORIGINAL

ERRORS:

If ADAM detects an error on either the source or destination tapes it will stop the copy process with the ABORT message. This means something is wrong with the tape or the tape drive. RUN the program again and retry the copy process. If it happens again, the tape indicated is bad (if the message says READ ERROR then the source is bad; if WRITE ERROR then the destination is bad).

HINTS:

You do not have to copy the entire tape (256 blocks) if the program(s) you want to copy are shorter. As an example, if you only want to copy the SMARTBasic program off your original SMARTBasic tape, which is the first one you should do, then you only have to copy the first 30 blocks from the source to the destination. Hence, after the second copy process, blocks 16-31 are copied onto the DESTINATION tape you can stop the program by hitting the ESCape key and the destination drive will contain the SMARTBasic program.

Here is the description of all the programs on NIAD Public Domain volume # BNDV18.

There are some very good, practical programs on this volume such as mailing label printing and one for labeling your DDPs with a catalog of contents. There are also some good graphics displays and some great games, including a super Othello. There are even some nice programs for generating speech on the Eve SS-CC !

*** NIAD PUBLIC DOMAIN ***

BASIC VOLUME #18

PROGRAM DESCRIPTIONS

By Bob Tarnowski

NOTE: Files with CAPITAL letters can NOT be run directly from basic. These files are documentation files or special files as noted. Some of these files are in machine code and must be run by entering BRUN (filename) instead of RUN.

- * CATCHITasm - Catch "IT" before it reaches the other side of the screen. Instructions in program. To run, BRUN CATCHITasm.
- * OTHELLOasm - Well done hi-res version of the board game. Can be a real challenge. To run enter BRUN OTHELLOasm.
- * othelscore - Scoreboard file for OTHELLOasm.
- * lottery - Program has nice routines, color, sound. Chooses lottery numbers for you.
- * fractions - A great learning tool for someone learning to work with fractions.
- * bargrphins - Instructions for making bar graphs with btrbargrph below.
- * btrbargrph - Interesting program enables you to create bar graphs in hi-res.
- * galaxyhgr2 - Interesting hi-res program that enables you to create galaxies! See DOCFILE.
- * 24hrclock - Nice routine shows you how to add a timer to your programs.
- * label.bas - Good program for saving labels in a file. Justifies center, left or right. See the examples below and DOCFILE.
- * NIAD.LBL - Sample label for label.bas.
- * MED.LBL - Sample use for label.bas.
- * babycass - Prints cassette and DDP box labels. Very useful program - see DOCFILE for instructions.
- * menu1 - Creates a menu and allows for selection of your files on your media with the arrow keys. See REM statements for instructions.
- * menu2 - Shorter version of above and also used as a second menu for media with many files.
- * online.ss - Well done program that uses the Eve SS-CC speech synthesizer to tell you an interesting story.
- * wrdfile.ss - Another program that uses the Eve SS-CC to give you pronunciations of syllables which can be used to construct words..
- * alphabt.ss - Says your ABC's via the SS-CC.
- * MLR.SS - Machine code file used with the programs above.
- * CONVERT - Converts area, length, volume, weight, etc. from one form to another - BRUN CONVERT.
- * HOMECALC - Does a good job making investment and loan calculations - menu driven. See DOCFILE for instructions; to run enter BRUN HOMECALC.
- * focalength - Nice program calculates lens sizes, screen sizes and distance from projector to screen for optimum viewing for photography buffs.

- * raygun - Interesting sound demonstration.
- * tammyart - Interesting hi-res design prog
- * MINEFIELD - Well done HGR game. Walk through the minefield without stepping on a mine or you'll RIP. Progressively gets more challenging-BRUN MINEFIELD.
- * question - A question is answered in GR graphics.
- * binomial - The general binomial theorem is expressed with a table of coefficients & example.
- * lazer - HGR demonstration program.
- * hgraf - Interesting hi-res design.
- * starburst - Hi-res demonstration program.
- * flagpole - Nicely done GR program portraying the American flag.

BEGINNER'S BASIC WORKSHOP

TRACE

This is a SMARTBasic command that is not used often, but can be very useful when it is. What it does is to list each line number of the program that is executing. This helps one "trace" the program flow and find where it may be going awry. To use this option just enter "TRACE" (without the caps of course) after you have loaded your program and then "RUN" your program. You will see each line number displayed as your program runs. This facility is very useful in locating a bug in a program, or if you type in a program from a book, newsletter, etc. but it doesn't run correctly, TRACE can help you locate the line you may have typed incorrectly. As an aid to debugging a program, you should print out the program (see Dec/Jan 87 issue) to use as reference and then run it with the TRACE option on. When the program gets to the place where it is malfunctioning, jot down what line numbers are displayed just prior to the problem. Go back to your listing and check out those numbers and you will usually find your problem. I used this to help a fellow who had typed in the CATCLEAR program from the Dec/Jan 87 NIAD issue. When he ran CATCLEAR, it only went to the point when it read the directory, gave him an error message and then aborted. We traced it down to a line where he had entered a word in lowercase, that had to be in uppercase because the program was doing an exact match on this word to determine if the directory was a standard ADAM directory.

The following is a neat little program that will display a bar graph based on the categories and values you give it. There is a separate program that contains the instructions:

```

0 & NIAD PUBLIC DOMAIN          Volume # BN
DV 18
5 INPUT "Instructions Y/N ? "; nm$
6 IF nm$ = "Y" OR nm$ = "y" THEN PRINT CHR$(4);
"run bargrphins"
10 INPUT "ENTER NUMBER OF CATAGORIES "; nc
15 x = 1
20 DIM n$(nc), am(nc), a(nc)
30 FOR a = 1 TO nc
40 PRINT "ENTER CATAGORY#"; a; " NAME"; : INPUT "
"; n$(a)
50 PRINT "ENTER "; n$(a); " AMOUNT "; : INPUT "";
am(a)
60 IF am(a) > bn THEN bn = am(a)
70 NEXT a
72 POKE 25431, 14: POKE 25568, 64: POKE 25471, 25
5
75 HGR
80 c1 = 4
90 FOR a = 1 TO nc
100 b = b+1
110 IF b > 15 THEN b = 0
115 IF b = 3 OR b = 10 OR b = 7 THEN b = b+1
120 HCOLOR = b
140 c2 = c2+(INT(256/nc))
150 nr = INT((am(a)/bn)*157)
160 FOR p = 157 TO 157-nr STEP -1
170 HPLLOT c1+2, p TO c2-2, p
180 NEXT p
190 c1 = c2
195 x = (31/nc)-1
197 IF x < 1 THEN x = 1
200 PRINT TAB(t); LEFT$(n$(a), x);
210 t = (c1/8.06)+1
220 NEXT a
225 PRINT
230 PRINT "DO YOU WANT TO CONTINUE Y/N? "; GET yn$
: IF yn$ = "Y" OR yn$ = "y"
THEN RUN
240 POKE 25431, 1: POKE 25568, 240: POKE 25471, 17
: HGR: TEXT: END

```

```

0 & NIAD PUBLIC DOMAIN          Volume # BN
DV 18
4 TEXT
5 PRINT "Instructions for"
10 PRINT "BttrBrgph is a better"
20 PRINT "bargraph for making"
30 PRINT "comparisons between"
40 PRINT "a specified number of"
50 PRINT "entries. Your largest"
60 PRINT "entry will be 100% of"
70 PRINT "the scale height. The"
80 PRINT "program prompts for you"
90 PRINT "to input number of "
100 PRINT "entrys, name of each"
110 PRINT "entry, and value of"
120 PRINT "entry. If you specify"
125 INPUT "HIT <CR> WHEN DONE          READING "; cr

```

```

130 PRINT "very many entries the"
140 PRINT "names will be cut to"
150 PRINT "the width of the col-"
160 PRINT "umn using only the "
170 PRINT "first few letters."
180 PRINT "There is some color"
190 PRINT "bleading between bars"
200 PRINT "but you can still use"
210 PRINT "the graph. This is a"
220 PRINT "short program and "
230 PRINT "could use output from"
340 PRINT "another program to do"
350 PRINT "comparisons."
355 INPUT "CONTINUE / QUIT C/Q ?"; cq$
356 IF cq$ = "Q" OR cq$ = "q" THEN END
360 PRINT CHR$(4); "run btrbargrph"

```

LABELMAKER By M. Keith

I designed this program to print announcements on gummed labels. I have found it useful in sending out meeting reminders and other short announcements on post cards. It does help to save 8 cents for each piece mailed. If you need more space than one label will allow, use two labels.

The program will type up to five lines on each label. Each line can be up to 35 characters long. The program will center each line as it prints. First boot Basic 1.0 or 2.0 (these are the ones that I have tested it on) then type "run labelmaker". You will then be asked what you want on the first line. Type your input in and hit return. You will then be asked about the second line. This will go on for all five lines. If you want any line left blank---just type blank and that line will be left blank when printing. You must go through all five lines. Your response will be left on the screen. If you find that you have made a mistake, hit Control C and then type "run" again. You will start from the beginning. You CANNOT USE A COMMA ',' in your input or the program will ignore everything after the comma.

After giving your information for all five lines the computer will ask you if the printer is ready. Put your gummed labels in the printer at the left side, just as you would for a full size sheet of paper. When the printer is ready hit 'y'. You will then be asked how many labels you would like. Type in the number of labels you wish to make and hit return. The labels will start printing. Check to see that the labels are being printed with all of the lines on the label. When loading the labels you should place the first line (top of the label) at the print head. I have noticed that after about 20-25 labels, the printing has crept toward the top of the label. The only "fix" I have found

for this is to press Control S, be sure that the printing stopped between lines or labels, roll the label up 1/2 line, and then press any key to resume printing. As each label is printed it will scroll up on the screen with a number in the left margin. This is the number of the label that is being printed. The number DOES NOT print on the label.

When the computer has printed out the last label, it will ask if you want to make any more labels. Simply answer y or n. I hope that you find this to be as useful as I have in sending out announcements etc.

```

10 REM THIS IS TO PRINT UP TO FIVE LINES ON LAB
ELS.
20 REM THIS IS TO GET THE INFORMATION.
30 TEXT: VTAB 13
40 PRINT: INPUT " What do you want on the
first line?"; a$
50 IF a$ = "BLANK" OR a$ = "Blank" OR a$ = "blank"
GOTO 70
60 a = INT((18-LEN(a$))/2)
70 PRINT: INPUT " What do you want on the
second line?"; b$
80 IF b$ = "BLANK" OR b$ = "Blank" OR b$ = "blank"
GOTO 100
90 b = INT((18-LEN(b$))/2)
100 PRINT: INPUT " What do you want on the
third line?"; c$
110 IF c$ = "BLANK" OR c$ = "Blank" OR c$ = "blank"
GOTO 130
120 c = INT((18-LEN(c$))/2)
130 PRINT: INPUT " What do you want on the
fourth line?"; d$
140 IF d$ = "BLANK" OR d$ = "Blank" OR d$ = "blank"
GOTO 160
150 d = INT((18-LEN(d$))/2)
160 PRINT: INPUT " What do you want on the
fifth line?"; e$
170 IF e$ = "BLANK" OR e$ = "Blank" OR e$ = "blank"
GOTO 190
180 e = INT((18-LEN(e$))/2)
190 REM THIS IS WHERE THE PRINTING STARTS.
200 TEXT: VTAB 13
210 PRINT " Is the printer ready?"; h$
220 GET h$
230 IF h$ = "Y" GOTO 260
240 IF h$ = "y" GOTO 260
250 GOTO 190
260 TEXT: VTAB 13: INPUT " How many labels do you
want?"; z
270 FOR i = 1 TO z
280 PRINT i
290 PR #1
300 IF a$ = "BLANK" OR a$ = "Blank" OR a$ = "blank"
GOTO 320

```

```

310 PRINT TAB(a); a$: GOTO 330
320 PRINT
330 IF b$ = "BLANK" OR b$ = "Blank" OR b$ = "blank"
GOTO 350
340 PRINT TAB(b); b$: GOTO 360
350 PRINT
360 IF c$ = "BLANK" OR c$ = "Blank" OR c$ = "blank"
GOTO 380
370 PRINT TAB(c); c$: GOTO 390
380 PRINT
390 IF d$ = "BLANK" OR d$ = "Blank" OR d$ = "blank"
GOTO 410
400 PRINT TAB(d); d$: GOTO 420
410 PRINT
420 IF e$ = "BLANK" OR e$ = "Blank" OR e$ = "blank"
GOTO 440
430 PRINT TAB(e); e$: GOTO 450
440 PRINT
450 PRINT
460 PR #0
470 NEXT i
480 TEXT: VTAB 13
490 PRINT " Do you want to make more labe
ls?"; t$
500 GET t$
510 IF t$ = "Y" GOTO 10
520 IF t$ = "y" GOTO 10
530 TEXT: END

```

SMARTBASIC WORKSHOP

UTILDUMP

Our Utilities PD volume # UNDV1 contains a program called UTILDUMP, written by Wayne Motel. This program is used to examine the contents of a block of data and for examining the specifics of the directory block. This program is very useful for printing out the contents of a block of memory for the purpose of decoding what the program is doing. Please see the April, May and June 85 issues for specifics on this program (the early version was called FDUMP) and how to read a directory block. Someone was nice enough to put together the following step by step documentation on how to run UTILDUMP.

Dumping a Tape

Load the Basic tape in Dr 1, press the RESET key, remove the basic tape and insert Utility tape. Type in the solid capital words RUN UTILDUMP and press RETURN KEY. Screen A will be displayed With the following SMARTkeys:
[DMP MEMORY NUM CONV READ BLK DIR LIST QUIT]

The Smart Key for Directory List will tell in which blocks records are stored, as a guide to select blocks to read into memory for later dumping.
[READ BLOCK] (it is one block at a time) will get Screen F,

[DUMP MEMORY] will occur much later, and you will come back to it from time to time.

To start, select DIR LIST, and screen B will be displayed to assign a tape (or disk) drive.

Screen B Select Source lists the devices in which you now have a tape or disk. Press the Smart Key which tells Adam which drive to search, and that brings screen C.

Screen C Asks if that tape is ready. Choose to Start Read. Adam says to wait, and then displays screen D, relating to the directory you asked for. (You could have chosen to Cancel if you needed to revise your plans.)

Screen D Directory List. Lined displayed are:

Read Device	(# you chose)
Volume	()
Directory	Protect
Size	Block
Vol Size	Now have 1 - 1 255 blocks
Create	0 0 0
Dir Entries	(# found)

Smart Key labels shown are:

[VOL INFO PRINT DIR VIEW DIR EXIT

View Directory displays what is in the directory, one line at a time. You get screen E. The Print Directory Smart Key sets up the printer, with a Smart Key to start it. Press that and the screen tells you ESCAPE will stop printing, - which it does at the end of the line with in which you press it. It restarts with a Smart Key at the point where it stops.

Screen E Typical screen says:

File name	Boot
Entry #	1 of 14
Blocks	0 thru 0
Allocated	1
Used	1
Last Bytes	1024
Attrib	Y Y
	PRW US D X N
	PPP FF L P F
Create	0 0 0

Smart Keys displayed:

[SET START PREV ENTRY NEXT ENTRY
DONE]

Of these, Next Entry will display the next line of the directory, and you can page throughout its full length. Set Start can skip entries to the one you want next.

Important Note: Entries previously stored but later deleted will be displayed if they have not been overlaid with a later one, and the text they lead to is also still there and can be found with this program.

When you decide which blocks you may want after seeing the directory, press DONE and you go back to screen D. Press the key for Exit and you get Screen A. Press Read Blocks, and get screen F.

Screen F Block No 1 (that's the block it will read into memory unless you change it)

Smart Keys are:

[NEW DEVICE NEW BLOCK READ EXIT]

To change to another block select New Block, and press Reset on the resulting screen, and type in the number you want on the resulting screen. (It reads in only one block at a time.) Hit RETURN to continue. Press Done on the next screen, which gets screen F again. Then press Read, and it tells you "OK Dump 54500 - 55523". Now the block you selected has been read into Adam's memory in the memory locations with those numbers and is ready to be dumped. Press Exit and you get back to screen A. There select Dump Memory and you'll get screen H.

Screen H Memory Dump

Dump 54500 thru 55523 (but you change these below)
Print address start 54500
Line space Sgl (can change to dbl)
Lines /page 66 (can reduce)
Printer on (can change to screen)

Smart keys are:

[VIEW CHANGE Line LINE EXIT START
ADDRESS SPACE COUNT PRINT

Key I will change back and finish addresses in memory (remember it relates to Adam's memory, not the block number), with a new screen instruction. Key III lets you choose single or double spaced printing.

Key IV Lets you reduce the length of the printed page, a line at a time.

Key V takes you back to screen A.

Key VI gets new screen to be sure you have paper in the printer. Again, ESCAPE stops the printer, and the screen lets you restart. The Cancel Smartkey returns you to Screen H, so you can choose a new block to print. The Exit key from H returns you to Screen A again. You can then either Quit or start all over again.

In search of the best Basic..

There have been a number of programs developed that have improved on SMARTBasic V1.0, correcting some of the bugs and adding some real nice features. However, none of them has combined the best features to produce a comprehensive, enhanced version of SMARTBasic 1.0. We now have SMARTBasic V 2.0, which is much improved over V1.0, but is not compatible with any V1.0 programs that contain peeks/ pokes (it will run any V1.0 programs that don't have peeks and pokes and a few that only have certain peeks/ pokes).

We have initiated a review of all these Basic V1.0 enhancement programs, both commercial and Public Domain to determine the best features of each to provide you with a comparison. Our initial thoughts are that there should perhaps be two "enhanced" versions of 1.0 - one for the novice and one for the "hacker" because these two types of people have very different needs. More next month.

BASIC RAM DISK

There has been some confusion on this program, reviewed in the Dec/ Jan 87 issue. The RAM DISK program modifies the operating system to recognize the 64K memory expander as if it was an internal tape/ disk drive. You can read and write a program to it from SMARTBasic just as you would your tape/ disk drive. Perhaps the advantages of this program are not evident -

1. Convenience - After loading Basic you can load the utility programs you most often use into the RAM disk and have almost instant access to them. You don't have to remove/ insert tapes/ disks to load in frequently used programs. If you're doing program modifications and need to save a program multiple times, the RAM disk makes this very convenient.
2. Speed - Programs load SUPER fast from the RAM disk because it is hardware memory, not mechanical like the disk/ tape drives.
3. Wear and tear - By using the RAM disk you save wear and tear on your tape/ disk drives to the degree you load and save files to the RAM disk.

As mentioned last month, the RAM disk conflicts with some of the FAST load programs based on the CRUNCHER program. The problem is actually in the fast load programs, not the RAM disk. Documentation comes with the RAM disk as to how to correct this problem.

MULTIDIR By F. Rovello

MULTIDIR, this program will enable you to initialize tapes or disks with 1 or more directory

blocks. The program runs under the control of BASIC. After booting BASIC load MULTIDIR and run it. The program will first ask for a device id, then for the number of directory blocks you want, then for a volume id. After this information is provided and before the actual initialization takes place the program will ask for a confirmation to initialize.

Device types supported are the 2 tape drives and 2 disk drives. You can initialize a minimum of 1 directory block to a maximum of 255 blocks on tape and a maximum of 159 blocks on disk. The volume id can be a minimum of 1 character to a maximum of 11 characters.

This program works with no problems with release 1.0 of SmartBASIC, there is a slight problem if running under release 2.0. The problem is that the new EOS supplied with 2.0 performs an AND with a \$7F on the number of blocks requested. This in effect reduces the number of blocks requested by 128 (\$80 = dec 128). If the number of blocks is less than 128 there is no problem, if the number of blocks is greater than 128 the actual directory blocks will be 128 fewer than requested. If you request exactly 128 blocks you wind up with no directory and any directory that may have been there will have been destroyed.

I hope this program will be of interest to you. Anyone who has many small programs should find this program useful as they will now be able to put more than 35 programs on a disk or tape.

```
50 REM MULTIPLE DIRECTORY
100 REM INITIALIZE WITH ONE OR MORE DIRECTORY BLOC
KS
150 REM F. Rovello Jan. 1987
200 LOMEM :31000
250 DATA 62,8,1,1,0,17,0,0,33,64,117,205,189,252,2
01
300 DATA 0
350 DATA 0,0,0,0,0,0,0,0,0,0,0,0,03,999
400 x = 30000
450 READ d
500 IF d = 999 GOTO 700
550 POKE x, d
600 x = x+1
650 GOTO 450
700 HOME
750 PRINT " MULTIPLE DIRECTORY INIT": PRINT
800 PRINT "DISK  1 - 2 ";
850 PRINT "enter d1 - d2"
900 PRINT "TAPE  1 - 2 ";
950 PRINT "enter t1 - t2": PRINT
1000 INPUT "ENTER DEVICE ID "; dv$
1050 IF dv$ = "d1" THEN POKE 30001, 4: POKE 30006,
160: d$ = "d5": GOTO 1300
1100 IF dv$ = "d2" THEN POKE 30001, 5: POKE 30006,
160: d$ = "d6": GOTO 1300
```

```

1150 IF dv$ = "t2" THEN POKE 30001, 24: POKE 30007
  1: d$ = "d2": GOTO 1300
1200 IF dv$ = "t1" THEN POKE 30001, 8: POKE 30007,
  1: d$ = "d1": GOTO 1300
1250 GOTO 700
1300 VTAB 9: PRINT
1350 VTAB 8
1400 PRINT "HOW MANY DIR BLOCKS"
1450 INPUT "ENTER # "; db
1500 IF db < 1 OR db > 255 GOTO 1300
1550 IF PEEK(30001) < 8 AND db > 159 GOTO 1300
1600 POKE 30003, db
1650 VTAB 14: PRINT
1700 VTAB 11
1750 PRINT "VOLUME ID - MAX 11 CHRS"
1800 PRINT "          _____": PRINT
1850 INPUT "ENTER VOLID "; v$
1900 IF LEN(v$) < 1 OR LEN(v$) > 11 THEN GOTO 1650
1950 FOR x = 0 TO x+LEN(v$)-1
2000 POKE 30016+x, ASC(MID$(v$, x+1, 1))
2050 NEXT x
2100 VTAB 16
2150 INPUT "READY TO INITIALIZE - y or n "; y$
2200 IF y$ = "n" THEN GOTO 2350
2250 IF y$ = "y" THEN GOTO 2500
2300 GOTO 2100
2350 VTAB 20
2400 PRINT "INITIALIZE CANCELLED"
2450 END
2500 CALL 30000
2550 VTAB 18
2600 PRINT CHR$(4); "catalog, "; d$
2650 END

```

GRAPHICS WORKSHOP
Hi/Lo Res Screen Text Part 2
By W. Motel

First, we have reprinted the program as the data statements at line 10 and 11 got messed up in the printing last month. We'll continue with the explanation of the machine language routines. The address shown is relative to your actual load point. Don't forget the machine language coding convention of Lo/Hi value (Lo value + Hi value * 256)

ASCII to Screen

```

0 42 xx xx LD HL,(addr)
3 17 00 32 LD DE,imm
6 203 37 SLA L
8 203,37 SLA L
10 203,37 SLA L
12 25 ADD HL,DE
13 235 EX DE,HL
14 33 xx 00 LD HL,imm
17 1 1 00 LD BC,imm
20 205 23 253 CALL FD17 (ascii to VDP)
23 201 RETURN

```

```

0 Load HL with contents of (addr) which is
our Col,Row area. (Line 18/19 builds the
actual address of xx xx)
3 Load DE with 32 00 (VRAM address - start
of PATtern area)
6/8/10 Shift L register (contains Column value)
3 times. (same as multiply by 8)
12 Add DE contents to HL. HL now contains
original VRAM PATtern address offset
(adjusted) by the Row,Col we want.
13 EXchange contents of HL and DE. DE now
contains the VRAM addrees as required by the
EOS routine we will be calling.
14 Load HL immediate with the ascii value
of the text character we want. (This value
was POKEd into here by the POKE to M1 + 15).
This will put the ascii value into to L reg.
and the H register half gets 0.
17 Load BC with 0 1 (C gets 1 and B gets 0).
This results in a count of 1 character.
20 CALL the EOS routine
23 RETURN back to our BASIC program call.

```

Transfer (A) to VRAM

```

0 42 xx xx LD HL,(addr)
3 17 00 00 LD DE,imm
6 203 37 SLA L
8 203,37 SLA L
10 203,37 SLA L
12 25 ADD HL,DE
13 17 8 0 LD BC,imm
16 62 xx LD A,imm
18 205 38 253 CALL FD26 ( (A) to VRAM)
21 201 RETURN

```

Similar to our first routine, except

```

After 12 No EXchange needed, since this EOS
routine looks for the VRAM address in HL
13 Load BC with 0 8, which is the count or
number of bytes to transfer. 8 bytes.
16 Load A with xx. The color value you've
POKEd into M2 + 17.
0 Note we load in the VRAM address, but here
the value is 00 00, which is the COLOR area
start in VRAM.

```

One thing to note on the last routine. We are using it here to transfer into the COLOR area of VRAM, but it can also be used to also transfer into the PATtern area. Remember last month we talked about the corresponding Pattern and Color areas in VRAM. Color for Hi/Lo res starts at VRAM address 00 00 and the Pattern is at 32 00. More about this next month.

As to the program itself, try the following things

1. After you CNTL-C to stop the TWINKLEing and while still in HiRES, type the following in immediate mode: This will underline the TWINKLE with a magenta line and show the correlation of text position and hi-res locations.

```
HCOLOR=15
```

```
HPLLOT 13*8,11*8+x to 20*8,11*8+x
```

Do the above HPLLOT varying x from 0 to at least 7.

2. Change line 130 x+16+6 to

a. For letters and background color change

```
(x+1)*16+x
```

b. For background color change only

```
(240)+x
```

3. To do TWINKLE down col 10 from rows 13 to 19

```
120 POKE of M0+1 should be M0
```

```
125 and 135 POKE of M0 should be M0 + 1
```

Next month we'll do a program to transfer your own patterns to Hi-res screens.

```
1 REM Text to Hi/Lo-res screen example
2 REM W. Motel Niad 3/87
5 LOMEM :27500
10 DATA 42,16,107,17,0,32,203,37,203,37,203,37,25,235,33,0,0,1,1,0,205,23,253,201
11 DATA 42,16,107,17,0,00,203,37,203,37,203,37,25,17,8,0,62,245,205,38,253,2
01
15 m0 = 27408: REM Col,Row (next byte) store are
a
16 m1 = 27410: REM Text to screen M.L.
17 m2 = 27440: REM Color fill screen M.L.
18 h = INT(m0/256): l = m0-(h*256): REM Calc hi/lo of col,row address
19 POKE m1+1, l: POKE m2+1, l: POKE m1+2, h: POKE m2+2, h: REM Store into M.
L.
20 FOR x = m1 TO m1+23: READ v: POKE x, v: NEXT x
: REM Load Text M.L.
22 FOR x = m2 TO m2+21: READ v: POKE x, v: NEXT x
: REM Load Color M.L.
25 POKE m2+17, 245: REM Set color value 15 (White text) * 16 + 5 (blue background)
30 HGR: REM This could be HGR2 or GR also
49 REM Col range 0 - 31 Row range 0 to 19 (0 - 23 for HGR2)
50 INPUT "col, row, char"; c, r, a#
51 IF c = 99 AND r = 99 THEN 100
55 POKE m0, c: POKE m0+1, r: REM poke col,row values in storage
60 CALL m2: REM Call color set for col,row
70 POKE m1+15, ASC(a#): CALL m1: REM poke ascii of char in and call M.L.
80 GOTO 50
```

```
100 REM The following is an example run
101 REM It runs after the input prompts
102 REM CNTL-C to stop
105 DATA T,W,I,N,K,L,E
110 HGR: POKE m2+17, 241: REM White text on Black
120 POKE m0+1, 10: REM Row 10
125 FOR c = 13 TO 19: READ a#: POKE m0, c: POKE m1+15, ASC(a#): CALL m1: CALL m2: NEXT c
128 FOR t = 0 TO 999: NEXT t: REM Delay
130 FOR x = 1 TO 13: POKE m2+17, x*16+6: REM Color text (x) + Background 6(red)
)
135 FOR c = 13 TO 19: POKE m0, c: CALL m2: FOR t = 0 TO 1: NEXT t: NEXT c: NEX
T x
140 GOTO 130
```

CP/M 2.2 WORKSHOP

Here is a tidbit fore your CP/M corner. I created a file that I call ASMBL.SUB which reads as follows:

```
ASM $1.AAX
LOAD $1
ERA $1.HEX
$1
```

When I have modified my assembler code file "FILENAME.ASM", I type in <SUBMIT ASMBL FILENAME>. I take a break and watch the assembly listing scroll up the screen, then, with no extraneous files left, the file is assembled, loaded and running. I hope this helps someone else..B. J. Woodside

NIAD CP/M PUBLIC DOMAIN DISK #22

By S. McFarlane

CHOP.COM - And yet another 30 Column Screen utility to add to your collection. Sooner or later the 'perfect' chop utility will be developed that toggles between 30/80 columns & pauses every 22-24 lines preventing the data from madly scrolling off the screen. Personally, I gave up & recently purchased the EVE VD-MB 80 Column Video Expansion Unit. An expensive way to solve the problem - but it works & for avid CP/M fans it's the only real solution.

PAGE.COM - A utility that formats text into pages & displays the file 1 screen at a time.

QWKEY12.COM/QWKEY12.DOC - A keyboard definition program that allows any key(s) on the keyboard to be replaced with any specified character string. Key definitions remain through warm boots but of course are lost on a cold boot. Keys may be defined at any time - even while running programs such as DDT, MBasic or WordStar as well as many

others. This utility was designed to define commands as required, rather than predefining a set of keys for a particular program. The DOC file details the correct usage of QWKey.

SPELLM20.LBR - SPELL was designed to detect misspellings in a document file. The advantages of a spelling checker program are obvious. And for anyone who uses WordStar or a similar word processor, this library should be considered a 'must have' addition to their system. As good as, (or perhaps even better than) a commercial spell checker, the program includes a large dictionary. User dictionaries may also be defined & loaded by SPELL to augment the main dictionary. SPELL will automatically search for user-defined dictionaries on the default drive and then on drive A: if no files are located. Several dictionaries may be loaded at the same time by simply specifying them in the command line. A list of user dictionaries must be preceded by the \$ sign - ie. <SPELL

Filename.DOC b: \$Dict1 c:Dict2 Dict3.Fun> A dictionary is specified by a filename & an optional drive name. If no drive is specified, the default drive is searched & then drive A: is checked. The above example would correct Filename.DOC & direct output to drive B:. User dictionary Dict1.DIC would be loaded from the default drive or drive A:, dictionary Dict2.DIC would be loaded from drive C:, & Dict3.DIC would be loaded from the default drive or drive A:. Note that the extension .Fun was ignored. Files checked by SPELL can be corrected using WordStar. SPELL uses a number of temporary files during execution, therefore be sure you have enough room on your disk for File.BAK, File.DOC & File.*** at the same time. When the edit is complete, File.BAK is deleted. A 2 drive system is recommended for use with this program. SPELL corrects files with two passes of the input file. On the first pass the words in the file are sorted alphabetically & duplicate words are eliminated. An attempt is then made to search for the words in the dictionary. On the 2nd pass of the input file, SPELL determines whether each word was found by locating them in memory. This method makes the operation of SPELL more efficient, as common words need only be looked up once & as the dictionary can be searched sequentially, disk head wear & tear is minimal.

If the entire file does not fit into existing memory, the input file is partitioned into sections small enough to fit into memory & is then corrected in a series of 2 pass operations until the entire file is checked. The SPELL dictionary stores about 40,000 words in 56K of memory. NOT recommended for use with Digital Data Drives. DOC file included.

WS/KEYS.DOC - An informative file outlining the configuration of ALL the special Function keys on ADAM, including the SmartKeys, for use with

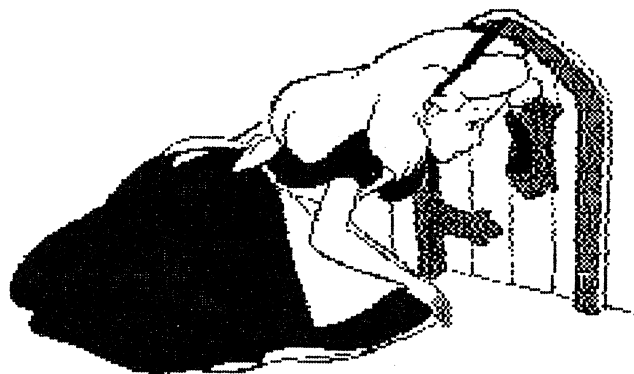
WordStar. Using the CONFIG program, similar values could be installed in your WordStar program or perhaps give you some ideas as to how other CP/M programs could be customized to your program requirements. If a program/utility is used on a regular basis, customizing keyboard input not only enhances the program but makes it much easier to use!

SEGA UPDATES

GREAT HOCKEY is the first in a series of Mega cartridges that require the new Sega Sports Pad controller (see below). If you want to play two player, both must have the Sports Pad. Options are junior or senior level, the length of the periods and in the one player mode, which of 8 different countries you want to play (each country is a different difficulty level). Graphics are well done, although a little bit difficult to follow as the scenes shift from mid-rink to the goals. Players can pass, shoot and control the goalie. The use of the Sports Pad makes the control and movement of the player very easy and smooth. A good game with plenty of action.

The SPORTS PAD is a combination roller bar controller and substitute for the regular Sega hand controller. It must be used with any of the "GREAT" sports games. It can be used with the other games and, in fact, is a big improvement for games like ACTION FIGHTER, ASTROWARRIOR and FANTASY ZONE. It will improve your score in these games. It does not work well with games such as HANG ON and GRAN PRIX that use both the left/right and up/down movement.

We just received BASEBALL, which is just in time for the season. It is a great game, with superb graphics and many options. You can play against the computer or another opponent. You can pick your own team from either the AL or NL. Options for relief pitchers, pinch hitters, stealing, etc are provided. Even an animated scoreboard! This will be a must for any arcade game and baseball lover.



REVIEWS

MICROWORKS By L. Marschand

This is a continuation of the review begun in last months issue.

MICROWRITE

As mentioned last month, this is NOT a word processor but a line oriented text editor. You do all your input on the line at the bottom of the screen, similar to SMARTWriter and its platen. You can set the left and right margin for the whole document (can't be changed within the document, which is the same as SMARTWriter). As you input the line, the screen will scroll to the right. When you are near the right margin a bell will sound and when you are at the right margin you can't input any more characters and must hit the enter key to advance to the next line. Only about 1/3 of each line is displayed at a time, but a nice feature is provided whereby you can jump to the second and then third portion of the line via a SMARTkey.

Functions provided are:

- . Automatic jump to the beginning/ end of the document.
- . Backspace/ delete character
- . Delete entire line
- . Insert and type over mode
- . Underline
- . Tab stops
- . Centering of a line
- . Page break symbol
- . Search and replace
- . Left/ right margin set
- . Screen color selection

There is a facility to display the amount of free memory available, which is 9683 when you first load MW. It appears that a byte is used for each character, which would mean that 130 complete lines of text could be accomodated in one document or more lines if there were alot of blank lines/ spaces.

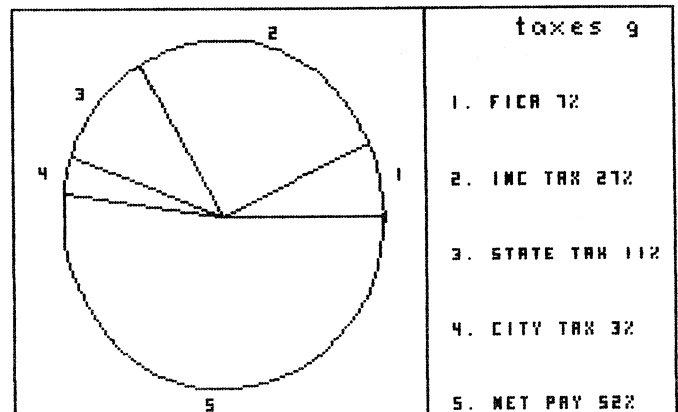
A sophisticated feature called "mail merge" is provided that will insert variable fields from a MICROFILE data base into a form letter prepared in MW so you can generate personalized form letters. MW will also print a bar graph generated from the MICROGRAPH module and you can even insert it in another document. This is also true of picture files created by the MICROEDIT module or by the SIGNSHOP program. These are real nice features, which should allow the creating of some nice looking letters. (NOTE: The extra dark print option available in SIGNSHOP is not available in MW).

Due to the limited memory available, a "chain" option is provided at print time which will allow you to print a number of separate documents one

after the other, maintaining page numbers and page length. Hence, you can create a number of individual MW documents, including bar graphs and picture files and print them sequentially. MW does have some potential improvement areas. The most problematic is that it will miss characters that you enter, not only, but more often if you type quickly. There needs to be a better method used to read the keyboard input to prevent this. You are forced to type slowly and watch for missed characters, then go back and input them.

The second is not a problem per se, but you need to be aware of it. When loading or printing a MW file, a part of the file is loaded and then a long hesitation occurs while the program reads and expands the lines from the file afterwhich more of the file is loaded. I thought the program had frozen until I heard the disk drive go on again.

Below are some prints generated by GRAPHIXPAINTER of the displays from the MICROGRAPH program. These prints show what these graphs look like on the screen, but you can not print them from MG. Only the bargraph can be saved for printing by MW and it doesn't look like it does on the screen display in MG. As you can see, these are nice graphs, done in high res graphics. We were able to capture them by breaking into the program and saving the screen display with GRAPHIXPAINTER.



In summary, I think you get alot of software for your money with MICROWORKS. I spent a good 3 hours working with the programs and did not use all the features. In my opinion, MICROFILE and MICROCALC are the best programs. See last months review for more information on them. Remember that you can print directly from MF without going to MW in either a columnar or mailing label format. Additionally, you can save a MF file for use by MICROCALC, MICROGRAPH and MICROWRITE making it the cornerstone program. MF even has some calculation functions like sum and average built in. The only limitation to MF is the number of records in any single database. Review the limitations we have described and decide whether MICROWORKS is for you.

HOME FILE MANAGER By W. Motel

This is a mini-filer system, that primarily is set up for creating a name/address file. Included is a mailing lable option that produces labels from this name/address file. The format of the file is:

NAME	max 21 characters
ADDRESS	" " "
CITY	" " "
STATE	" 15 "
ZIP	" 5 "

You can also create up to 6 misc. files (per tape/disk). Each can contain up to 4 user-defined fields, each field being a max. of 21 characters of data. These misc. files can be for any special use you want, I.E. Record collection, Christmas list, etc. The data you enter in ANY of the fields can contain any character EXCEPT the comma.

The program itself is in BASIC. You are prompted as to whether you want the mailing list or one of you special files. Once selected, you can read an existing file or generate a new one. Within the file, your options are:

1. Print or Display items (records)
2. Change an existing item
3. Add an item or items.
4. Record a file on tape.
(Goes to tape or disk)
5. End session
6. Work on a different file.
7. Print Mailing Labels (mail file only)

When entering data for an item (record), you are prompted thru each field for that file for data entry.

The display/print option shows the item by its item number, field name, and value. The special mail label print option prints on 3 across labels. They suggest

AVERY 5354, 5351, 5332 or
DENNISON 37-123, 37-121, 37-134.

After each 3 across label group is printed, you are prompted to check the label alignment. This means you cannot print the labels by leaving it run unattended, but I guess it does insure and safeguard against the labels not printing correctly due to slippage on the ADAM printer.

Unlike Smart-FILER, each record is simply refered to by it's ITEM NUMBER. There are no search fields or sorting. The FIRST record in is ITEM 1, teh second is 2, and so on. You cannot delete items (records).

In doing a small test with the mail file, it seems that multiple files are created. Each mini file contains 10 records. The first has records 1-10, the second has 11 - 20, and so on. The first file was called MGL, the second MGL1, and MGL2 for

the third. Each file is 1 block long. I assume this is due to the maximum length of the 5 fields per mail record is 83 times the nice round count of 10 = total of 830 bytes, which fits into a 1 block area (1024 max). Using this premise and a single block directory tape/disk (31 catalog entries), I guess you could have 31 files times 10 = 310 total records. Going into a multi block directory, you could theoretically have more, unless the actual program has a storage limitation, as it did store all of my 23 records in at one time.

Overall, this is not a fancy Data Base system, but it doesn't advertise itself to be. Given the label print capabilities and the low price, I think this is worth the money, if you are looking for a label print program.

RATING - B

PERSONAL CHECKBOOK MANAGER By W. Motel

This is a checkbook balancing system. It allows you to keep track of all check deposits, withdrawals, and misc. transactions. It electronically lets you do your monthly (or whatever cycle) bank statement balancing. Entries can be modified, added, and of course deleted. A summary can be saved to tape/disk until your next statement comes in. Printouts include the summary, current balance, and list of outstanding transactions.

The BASIC program begins with a prompt as to whether you want the instructions displayed. These adequately explain the major functions. The main menu gives you the following options:

1. Balance
2. Enter Data
3. Display Data
4. Help (redisplay instructions)
5. End session

Any screen can be displayed AND printed with the CNTL-P function (using the normal ADAM printer or WAM0drive for your dot-matrix printer).

Enter DATA allows you to

1. Look at summary
2. Work on Checks
3. Work on Deposits
4. Work on Withdrawls
5. Return to main menu

This basically lets you selectively work on any of the 3 transaction catagories. When working on any of the 3 transaction catagories, you can
+ Add new item
+ Display next item

- Display prior item
- c Change displayed item
- d Delete displayed item
- r Return to menu

When working with checks, you use the check number and amount. The deposits and withdrawals go by date and amount. When Returning to menu, the current transaction category total is displayed.

The first option, Balance, basically guides you through the entering of the 3 transaction categories, and is probably best done the first time you create your file.

The display, lets you look at the summary or any of the 3 transaction categories. The end session allows you to SAVE your data onto a file for use next month.

All in all, this is a nice, easy to use program for check balancing. At the low price, it makes it a very good buy.

Rating: A-

Listed below is a sample print of the SUMMARY. Note, I entered a wrong BOOK balance of \$50.00. This will display an OUT of BALANCE error on the screen.

SUMMARY 03-19-87WDM

BANK BALANCE	50.00
as of 03-15-87	
including:	
service charge	0.00
& interest of	0.00
DEPOSITS	100.00
after 03-15-87	
WITHDRAWALS	2.50
after 03-15-87	
CHECKS OUT	3.00
as of 03-19-87	
BALANCE	
Computed	144.50
Your Book	50.00

Home Budget
By W. Motel

This is a BASIC program that helps you plan your Home Budget. Due to it's design, you could also use it to keep track of your actual weekly or monthly expenses. It seems to have been designed and categorized similiarly to the home budget worksheet books available.

The income and 5 expense groupings have built in categories. You enter in your amounts (up to 99999.99) and a payment code (Weekly, Monthly, Quarterly, or Yearly). Totals are calculated and shown for the month.

Corrections are made easy enough, as the program will prompt you through the items within your selected category. The file can be saved. Printouts are available, as are screen displays showing the individual items, amounts, and payment codes.

The INCOME group includes 5 items for : Salary 1 and 2, Interest, Dividends, and Misc.

There are 5 EXPENSE groupings, each with 10 items, as follows:

HOUSING/UTILITIES: Rent/Mort., Taxes, Electric, Gas, Oil, Water, Sewage, Phone, Repairs, and Insurance.

FOOD/CLOTHING/TRANSPORTATION: Groceries, Clothing, Auto Ins., Gasoline, Auto Maint., Auto Repair, Auto Loan, and Other 1-2-3.

MEDICAL/DENTAL CARE: Drugs, Doctor 1-2-3, Dentist 1-2, Insurance, Eyeglasses, Other 1-2

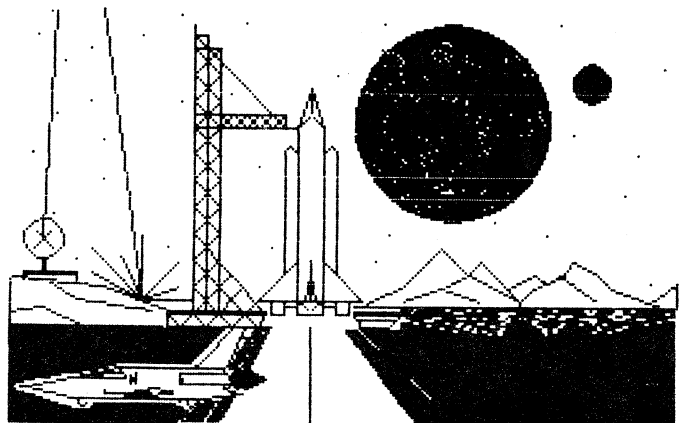
SAVINGS/INSURANCE: Ira 1-2, Savings, Vac. Club, Xmas Club, Credit Union, Life Ins 1-2, Other 1-2-3.

MISCELLANEOUS: Entertainment, Gifts, Allowances, Pocket Money, Recreation, Education, Contribution, Subscription, Other 1-2-3.

If you are looking for a budget planner, this one just might fit the bill, without straining your budget.

RATING - B

Here is a screen print from a fantastic graphics show done by our own Dale Metcalf. This sophisticated program called CROLONS must have taken hours of work. The color displays and sound routines are a treat to watch. The program will be on our PD volume # BNDV20.



PRODUCT LIST
PRICES EFFECTIVE: 4/15/87

MEMBERS ONLY
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OTHER SOFTWARE
Specify V., DDP, or Disk

VIDEOTUNES (DDP)	\$ 26.95	SPECIAL
FANTASY GAMER (DDP)	\$ 22.95	SPECIAL
BASIC BONANZA (DDP)	\$ 22.95	SPECIAL
SOFTPACK I	\$ 18.95	SPECIAL
LWAC ARCHIVE I	\$ 9.95	SPECIAL
REEDY SOFTWARE I	\$ 15.95	SPECIAL
QUICKFAX QUEST (DDP)	\$ 9.95	SPECIAL
PERSONAL ACCOUNTANT (DDP)	\$ 18.95	SPECIAL
PERSONAL PLANNER I (DDP)	\$ 18.95	SPECIAL
BUSINESS PACK (DDP)	\$ 18.95	SPECIAL
PAINTMASTER (DDP)	\$ 22.95	SPECIAL
TURBOLOAD (DDP)	\$ 28.95	SPECIAL
POMERPRINT (DDP)	\$ 15.95	SPECIAL
SIGNSHOP (DDP)	\$ 22.95	SPECIAL
QUICKCOPY (DDP)	\$ 15.95	SPECIAL
MULTIMRITE (DDP)	\$ 38.95	SPECIAL
MEDIA AID (DDP)	\$ 19.95	SPECIAL
ELECTRIC GAME PACK (Disk)	\$ 17.95	II NEW
Specify I or II (DDP)	\$ 19.95	SPECIAL
NUMBER BUMPER (Disk)	\$ 15.95	SPECIAL
REEDY (DDP)	\$ 17.95	SPECIAL
ENTERTAINMENT PACK (DDP)	\$ 18.95	SPECIAL
JEPHARDY QUESTION PACK (DDP)	\$ 18.95	SPECIAL
FAMILY FEUD QUESTION PACK (Disk)	\$ 12.95	SPECIAL
TRIVIA PACK I (Disk)	\$ 12.95	SPECIAL
KIDS TRIVIA (Disk)	\$ 14.95	NEW
PRO FOOTBALL (DDP)	\$ 18.95	SPECIAL
BACKUP 3.0 (COPY ONLY) (DDP)	\$ 16.95	SPECIAL
BACKUP X3.0 (COPY/UTILITY) (DDP)	\$ 29.95	SPECIAL
SMARTGAMES PACK (Disk)	\$ 9.95	SPECIAL
ROYAL AMBS. EDUC PKG (Disk)	\$ 9.95	SPECIAL
CPM NEVADA BASIC (DDP)	\$ 39.95	SPECIAL
SP-1 CUSTOM SOFTWARE for Smartwriter/Filer (Specify printer) (DDP)	\$ 7.00	NEW
GRAPHXPAINTEER (Specify printer) (DDP)	\$ 19.95	NEW
For Dot Matrix Printers (DDP)	\$ 14.95	NEW
ADDRESS BOOK/CALENDAR (DDP)	\$ 9.95	NEW
SPIRIT MASTER (DDP)	\$ 18.95	NEW
JEPHARDY QUESTION MAKER (DDP)	\$ 24.95	NEW
FAMILY FEUD QUEST MAKER (DDP)	\$ 28.95	NEW
Each of Quest Makers (Disk)	\$ 28.95	NEW
BASIC RAM DISK (Disk)	\$ 24.95	NEW
Use 64K in Basic (DDP)	\$ 28.95	NEW
PAINTINGS (Disk)	\$ 7.95	NEW
Specify Vol 1, 2, 3 (DDP)	\$ 9.95	NEW
SIGNS (Disk)	\$ 7.95	NEW
Specify Vol 1 or 2 (DDP)	\$ 9.95	NEW
JAMES'S RECIPES 25 rec/vol (Specify Disk on DDP and VOLUME) (DDP)	\$ 7.00	NEW
V1 Desserts, V2 Salad, V3 Outdoors, V4 Holiday (DDP)	\$ 28.95	NEW
MICROWORKS (DDP)	\$ 18.95	NEW
EASY COME, EASY GO (DDP)	\$ 18.95	NEW
WIZARD'S PINBALL ARCADE (DDP)	\$ 18.95	NEW
ADAM'S POKER (DDP)	\$ 18.95	NEW
ADAM'S POKER for EVE Speech Synthesizer (DDP)	\$ 9.95	NEW
SOLAR SYSTEM QUIZ (DDP)	\$ 9.95	NEW
AMERICA AT WAR QUIZ (DDP)	\$ 9.95	NEW
WORLD GEO. QUIZ (DDP)	\$ 9.95	NEW
HOME FILE MANAGER (DDP)	\$ 9.95	NEW
PERSONAL CHECKBOOK (DDP)	\$ 9.95	NEW

COLECO SOFTWARE
(DDP, unless noted)

SMART LOGO	7600	\$ 29.95	SPECIAL
EXPERTYPE	7602	\$ 19.95	SPECIAL
SMART FILER	7813	\$ 15.95	SPECIAL
RECIPE FILER	7814	\$ 10.95	SPECIAL
SMART LTRS/FORMS	7805	\$ 15.95	SPECIAL
FLASHCARD MAKER	7662	\$ 18.95	SPECIAL
HISTORY 2901, VOCAB 2902		\$ 11.95	EACH
ADAMCALC	7832	\$ 29.95	SPECIAL
ADAMCALC	7832	\$ 29.95	SPECIAL
R. SCARRY WORDBOOK	7658	\$ 20.95	SPECIAL
WACKY WORD GAME	7834	\$ 15.95	SPECIAL
DONKEY KONG JR.		\$ 18.95	SPECIAL
SUPER ZAXXON	2632	\$ 12.95	SPECIAL
2010: TEXT ADVENTURE	7849	\$ 20.95	SPECIAL
FAMILY FEUD	7710	\$ 20.95	SPECIAL
BEST OF BRODERBUND		\$ 20.95	SPECIAL

CARTRIDGE SOFTWARE
Colecovision/Adam

SMURF PAINT/PLAY	2697	\$ 18.95
SUESS FIXUP PUZZLE	2699	\$ 18.95
MONKEY ACADEMY	2694	\$ 18.95
T. TURTLE LOGO/GRPHICS	2698	\$ 28.95
SPYHUNTER		\$ 28.95
DAMBUSTER		\$ 28.95
VW II Bomber/Dogfight		\$ 28.95
TAPPER		\$ 22.95
PARZAN		\$ 22.95
HERMIDER		\$ 22.95
WARGAMES		\$ 22.95

CP/M 2.2 COMM. SOFTWARE

INFOCOM PRODUCTS	
Requires ADAM CP/M software	
Disk only	
PLANETFALL	\$ 34.95
ZORK I	\$ 29.95
ZORK II	\$ 39.95
ZORK III	\$ 39.95
STARCROSS	\$ 39.95
DEADLINE	\$ 39.95
HITCHHIKERS GUIDE	\$ 29.95

PRODUCT LIST
PRICES EFFECTIVE: 4/15/87

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NIAD USER GROUP PRODUCTS
PUBLIC DOMAIN
PLEASE Specify VOLUME # and DISK/DDP

NOTE: \$ 5.00 Disk - \$ 7.00 DDP	
SMARTBASIC # 1 - 18 (18 Different)	
# BNOV1 - 18 (Vol numbers)	
SMARTLOGO # 1 - 2 (2 Volumes)	
ADAMCALC # 1 - 2 (2 Volumes)	
BASIC UTILITIES # 1 - 2 (2 Volumes)	
(Vol 1 includes backup utility)	
CPM2.2 # 1 - 28 (28 Volumes)	
# BNOV1 - 28	
JEPHARDY	
PINBALL/HARDHAT MACK	
New BUG FREE vers with 2 DEMO games	
Add \$ 2.00 for 40 page manual	
PINBALL GAMES VOL 1	
Requires Pinball/Hardhat Mack	
SUPER SUBRUC	
TROLLS TALE	
ADAM DIAGNOSTIC	
Requires Superbug	
ADAMLINE TELECOMMUNICATIONS	
SMARTBASIC REPLACEMENT DDP	
SMARTBASIC V2.0 with Doc. file	
NIAD BACK ISSUE INDEX - Smartfiller file	
EDS DISK MANAGER - (Replacement on Disk or DDP)	

NIAD SPECIALS

GRAPHXPPIX I and EITHER PAINTINGS	\$ 19.95
VoIs 1, 2, or 3	
SIGNSHOP and EITHER SIGNS	\$ 27.95
VoIs 1 or 2	
10 of 10 TDK DDP DS/DD Diskettes	\$ 9.95
NIAD Edition of Non-LORAN 309	\$ 48.95
SUPERACTION CONTROLLER 209	\$ 48.95
EXPANSION MODULE 1 (Atari 240S)	\$ 48.95
EXPANSION MODULE 2 (Driver 2413)	\$ 48.95
ORPHANWARE P1A2 PARALLEL INTERFACE & PANASONIC 1080I PRINTER W/CABLE	\$ 309.95
Everything you need to hook it up	
ORPHANWARE P1A2 PARALLEL INTERFACE & OKI 20 PRINTER-ADAM PLUG/PRINT	\$ 249.95
Everything you need to hook it up	
OKI 20 PRINTER-ADAM PLUG/PRINT	\$ 199.95
No interfaces on cables	
NEW ADAM (can) HAND CNTL'S	\$ 9.95
ADAMKEY CABLE CARDS	\$ 9.95
ADAMKEY CABLE CARDS KEYBOARD/DISK	\$ 9.95
3 1/2 x 16/18 PIN FEED ADDR LABELS	\$ 8.95/1000
3 1/2 x 11 20 LB PIN FEED PAPER	\$ 9.95/500
3 1/2 x 11 20 LB PIN FEED PAPER	\$ 18.95/1000
4.00 EACH	
NOTE: You must send label card from game as proof of purch: Family Feud, Best of Broderbund can be copied directly by most copy programs	
SMARTFILLER COPY WITH LATEST VERS. Includes Label Print Fix	\$ 4.00
Send in your Filler Disk/DDP	
BACK ISSUES of NIAD from 1/85	\$ 3.00 EACH
10 or more	\$ 2.50 EACH
RIGHT DIR TAPES for SUPERGAME COPY	\$ 2.50 EACH
UPDATES or FIXES to PD tapes	\$ 3.00 EACH

SUPPLIES

RIBBONS	
ADAM REPLACEMENT	\$ 4.95 EACH
PANASONIC 1080I/1080I	\$ 9.95 EACH
OKIMATE 20 RIBBONS	\$ 4.95 EACH
Color	\$ 5.95 EACH
COVERS	
3 PIECE FOR COMPLETE ADAM	\$ 18.95
DISK DRIVE ONLY	\$ 8.95
3 PIECE FOR EXPANSION ADAM	\$ 23.95
PRINTER WHEELS	\$ 5.55
SPECIFY FONT STYLE for the ADAM printer.	
Gothic 12, Script 12, Elite 12, Emphas 12, Courier 12, Pica	
TAPE DRIVE HEAD CLEANING KIT	\$.50
DISK DRIVE HEAD CLEANING KIT	\$ 19.95
Contains 2 cleaning diskettes/Fluid	
DISK/DIGITAL DATA PACKS	
COLECO/LORAN DDP	10 for \$ 4.75 EACH
NIAD/LORAN DDP	10 for \$ 39.95
NIAD (Non LORAN) DDP	10 for \$ 4.25 EACH
BOX OF 10 TDK DS/DD Diskettes	10 for \$ 34.95
5 Boxes 50 Diskettes	\$ 19.00 SPECIAL
PINFEED PAPER/LABELS	
9 1/2 x 11 20 MICROPERF PAPER	\$ 8.95 /500
9 1/2 x 11 OKI 20 THERMAL PAPER	\$ 16.95 /1000
3 1/2 x 15/16 PIN FEED ADDR LABEL	\$ 8.95 /300

HARDWARE & ACCESSORIES

NOTE: SEE SPECIALS ON NEXT PAGE AS WELL

DOUBLE SIDED DISK DRIVE UPGRADE \$ 139.95

Send in your Coleco disk drive to be upgraded to 320K (270K in CP/M 2.2) capacity. Send in your complete drive with cables. If your drive requires repair you will be charged \$39.95 plus parts.

NOTE: Due to a limitation of CP/M you can not mix single and double sided drives while using CP/M.

ADAM LINK MODEM 7818 \$ 69.95

ADAM phone modem which provides capability, with included software, to interface with other ADAM computers or large bulletin board systems such as Comuserve.

NOTE: Order ADAMLink II software from Public Domain list which will allow upload/download of programs.

COMPUERVE STARTER KIT \$ 25.95

Includes account number, password and five free hours of connect time to the popular comuserve information system.

DIGITAL DATA DRIVE # 2409 \$ 29.95

NEW (but not boxed) digital data drive which can be used as a replacement or as a second drive.

EVE 64K MEMORY EXPANDER ME-64 \$ 49.95

Provides additional 64k of memory for SMARTWriter, CP/M programs. Provides print buffer spooling for ADAMCalc.

EVE RS232/PARALLEL INTERFACE SP-1 \$139.95

Allows the connection of the ADAM to any popular printer and other devices requiring either serial or parallel interface connections. Includes software for directing print to additional printers directly from SMARTWriter, SMARTer, BASIC, CP/M programs.

Includes EITHER parallel or serial cable - specify which one desired.

EVE SP-1 PARALLEL INTERFACE ONLY \$ 79.95

(Includes parallel cable)

DRPHANWARE PIA2 PARALLEL INTERFACES \$ 39.95

(Parallel cable required - see next item)

PARALLEL OR SERIAL CABLE SP-1C \$ 15.95

Second cable required to attach SP-1 or PIA2 interface to other printers.

SPEECH SYNTHESIZER/CLK CAL SS-CC \$109.95

Output voice speech and words via Basic and CP/M programs. Includes software to construct words. Real time clock calendar provides continuous date and time accessible from Basic and CP/M.

EVE 80-COLUMN VIDEOMOTHER BOARD VD-MB

With Power Supply \$329.95

W/D Power supply \$309.95

With trade in of PS-1 \$299.95

Provides 80-column video output from the ADAM to a monochrome 80-column monitor. Also includes separate power supply & expansion slots for attaching other EVE products.

Expands ADAMS capability for CP/M SOFTWARE ONLY requiring 80-column display.

** Includes Word Processing and Basic software programs **

DRPHANWARE 80 COL VIDEO UNIT

Standalone unit \$199.95

Unit to attach to Eve Serial Port \$179.95

Provides 80 column video output for CP/M software. Emulates various terminals.

EVE POWER SUPPLY FOR ADAM PS-1A \$ 79.95

EVE MULTI-UNIT ADAPTER MA-3 \$ 44.95

Special adapter cable required to attach both the SP-1 and SS-CC to the ADAM. NOTE: Not required for 80-column video board.

CARD EDGE ADAPTER CEA-1 \$ 24.95

For attaching ADAM Autodialer to M-3 cable.

ADAM PRINTER TRACTOR FEED \$ 72.95

Hooks into the ADAM printer as originally designed to provide for feeding of pin-fed continuous form paper. All provides consistent alignment and advancing of paper. All serial design - guaranteed.

PRINTER STAND/ON/OFF SWITCH \$ 15.95

Provides raised plastic legs for the ADAM printer and relocates the on/off switch to the front of the printer for easier access when loading paper.

MONITOR CABLE 7830 \$ 9.95

Required to hook complete ADAM console to a video monitor. Supports both picture and sound signals.

EXPANSION MOD MONITOR KIT \$ 29.95

Kit to modify Colecovision unit to allow it to be connected to a monitor via 7830 cable above. Requires soldering skill - see review in 2/85 issue.

PRINTERS

PANASONIC 10801 \$279.95

TYPE: 9x9 DOT MATRIX

SPEED: DRAFT MODE - 120 CPS

NEAR LTR QUALITY - 24 CPS

COMPATIBLE W/ EPSON RX80, IBM, FULL GRAPHICS

PRINT CHR: ADJ TRACTOR FEED

MEDIA HNDL: CENTRONICS PARALLEL

INTERFACE: 2 YEAR LIMITED WARRANTY

FEATURES:

PANASONIC 10901 \$399.95

TYPE: 9x9 DOT MATRIX

SPEED: DRAFT MODE - 160 CPS

NEAR LTR QUALITY - 32 CPS

COMPATIBLE W/ EPSON RX80, IBM, FULL GRAPHICS

PRINT CHR: ADJ TRACTOR FEED

MEDIA HNDL: CENTRONICS PARALLEL

INTERFACE: 2 YEAR LIMITED WARRANTY

FEATURES:

OKIMATE 20 COLOR PRINTER \$199.95

TYPE: 24 PIN THERMAL

SPEED: DRAFT MODE - 80 CPS

NEAR LTR QUALITY - 40CPS

LIMITED ADJ TRACTOR FEED

MEDIA HNDL: NONE STD - PARALLEL PLUG N

INTERFACE: PRINT MODULE SUPPLIED THAT ATTACHES TO EVE OR ORPHANWARE PARALLEL INTERFACE

FEATURES: BLACK & WHITE OR COLOR PRINTING BK BUFFER; SPECIAL PAPER REQ'D

PANASONIC RIBBONS - \$9.95

OKIMATE 20 RIBBONS- \$4.95 BLACK

- \$5.95 COLOR

TRAINING MANUALS/ BOOKS

LEARNING EXPRESS AUDIO TRAINER \$ 32.95

CP/M USER'S GUIDE BY T. HOGAN \$ 15.95

WORD PROCESSING WITH YOUR ADAM \$ 8.95

THE COLECO ADAM USER'S HANDBOOK \$ 8.95

FIRST BOOK OF ADAM, THE COMPUTER TAB BOOKS \$ 8.95

BASIC BASIC PROGRAMS FOR THE ADAM BY KNIGHT, TIMOTHY DRR \$ 8.25

DISCOVERING SCIENCE ON YOUR ADAM, WITH 25 PROGRAMS BY TAL MOUNTAIN SCIENCE CENTER \$ 9.95

SEGA GAME SYSTEM

NOT COMPATIBLE WITH ADAM

BASE GAME SYSTEM \$99.95

2 HAND CONTROLLERS

COMBO MEGA CARTRIDGE

HANG ON GAME

ASTRO HARRIORS

MASTER GAME SYSTEM \$129.95

2 HAND CONTROLLERS

LIGHT PHASER GUN

COMBO MEGA CARTRIDGE

HANG ON GAME

SAFARI HUNT GAME

SEGA SPORTS PAD CONTROLLER \$49.95

SEGA CARD SOFTWARE (256K) \$24.95

F-16 FIGHTING FALCON

MY HERO

TEDDY BOY

TRANSBOT

SUPER TENNIS (sports pad not req'd)

SEGA MEGA CARTRIDGES (1048K) \$29.95

CHOPFLYER

ACTION FIGHTER

BLACK BELT

FANTASY ZONE

WORLD GP

PRO WRESTLING

MARKSMAN/ TRAP SHOOTING

GREAT HOCKEY (SPORTS PAD REQ'D)

RAMBO

BASEBALL (SPORTS PAD NOT REQ'D)

NOTE: SEND IN FOR FREE FLYERS ON THE SEGA SYSTEM

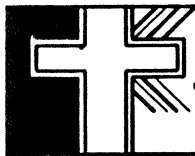
THE COLECO ADAM ENTERTAINER BY BRIAN SAWYER \$ 12.95

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