

# Newsletter

**VOL 4 NO 1 JANUARY 1981**

ALPHA MICRO USERS SOCIETY  
934 B Pearl Street  
Boulder, CO 80302  
(303) 449-6917

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AMUS office hours are from 8:00 a.m. to 5:00 p.m., mountain time. Our overworked secretary is Sharon Greene who is happy to assist you with any question you might have about AMUS, or the Alpha Micro Computer. If she doesn't know the answer to your question, she will try to direct you to someone who does.

The AMUS Newsletter is published monthly by AMUS, 934-B Pearl Street, Boulder, Colorado 80302. Subscription rates are \$10.00 per year. Each member representative receives a one year subscription, the cost of which is included in the annual dues.

Additional copies and back issues of the newsletter may be ordered from Sharon Greene. Bug fixes, articles, letters, reviews of software and information about Alpha Micro applications are happily accepted. Material must be received by the 20th of the month for inclusion in the following month's edition.

Each member is allotted one free page of advertising in the newsletter each year; further advertising is at the rate of \$50.00 per page with a minimum of 1/4 page. Ads must be camera-ready, black and white copy and be accompanied by the appropriate fee. Send all advertising to the editor at 1401 E. Bridge Street, Brighton, CO 80601.

The Alpha Micro Users Society Network is a computer system meant to give members access to information and other Alpha Micro users with similar interests. It consists of an Alpha Micro computer with a Hawk disk drive, a 300 baud modem, a 1200 baud modem, and 160K of memory. AMUS members are given an individual account and password on the Network so that they may receive personal electronic mail. Contact Sharon Greene for your account and password. Many thanks to Alpha Micro Systems of Irvine, California; North America Title Co. of Houston, Texas; and the Byte Shop of Reno, Nevada who have donated equipment and software to the Network.

AMUS has a library of programs which have been donated by members for distribution to other members. Programs are available either through the AMUS Network, or, if you prefer, we can make floppy or Hawk cartridge copies and mail them to you. Orders may be placed through Sharon Greene.

Application to mail at second-class postage rates is pending at Boulder, Colorado 80302.

From the Editor.....

Depending upon the post office, there may still be time enough to attend the Alpha Micro Convention in Miami scheduled for January 18 through 23, 1981. Alpha Micro has been most generous in supporting the show and will be providing product announcements and a special guest speaker. Please try to be there !

You people have been great in volunteering to help us answer questions. We plan to compile a listing of everyone's 'expertise' to be available through the network or from Sharon. Meanwhile, if you have questions, please feel free to call Sharon at 449-6917 or me at 659-1335. If we can't answer your question, we'll put a little blurb in the newsletter and find someone who can.

Also - a sincere thank you to Alpha Micro for being so nice to us. I've called with user questions and they've been very helpful and congenial. Thanks, gang.

Happy New Year from Sharon, Steve, Adam and Pat to everyone.....

#### Frustration Made Easy, or How To Get on The Network

Thanks to John of the Byte Shop of Reno, the network is controlled by a user accounting system which allows only authorized users to log in and keeps track of their elapsed total and c.p.u. time on the system. As all users do not have either the facilities or the desire to use the network, we have not gone to the expense of sending everyone your log-in name and password - but if you're a member, you have one. Simply call Sharon or drop her a note and she'll give it to you.

For 300 baud modems, dial area code 303, 449-5564; for 1200 baud Vadic modem only, dial 449-5565. Set your terminal to the appropriate baud rate and dial the number. After a few rings (we hope), you'll hear a high-pitched tone. Place the receiver properly in your acoustic coupler and hit return on the crt a few times. You should get the following message:

Please sign on:

Enter the account name which you have been assigned; the system will respond:

Password:

Enter your password; a correct entry gets you into the network; anything else displays:

Invalid User  
Please sign on:

After successfully signing on, you will get a message that you are logged into the Amus Network running under the User Accounting System. For information on how to use the network, type HELP AMUS. This will assist you in 'walking around the system'.

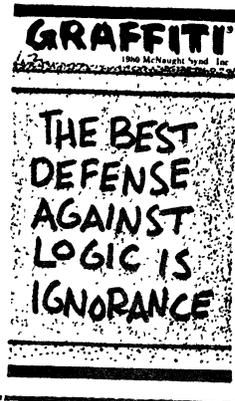
Vue is almost obnoxious at 300 baud, but better than nothing. If you access Vue and get garbage, the terminal driver is wrong for your terminal. Your job is PHONE1 or PHONE2 depending upon the baud rate. If the terminal driver you require is listed in TRMDEF, use AFFIX to change terminal drivers; type HELP AFFIX for instructions. If your terminal driver is not in TRMDEF, leave mail for Adam to include it in the next SYSTEM.INI.

Because data has been destroyed on the system by users, you will be allowed to access only certain system commands - they are listed in the help file. Also listed are the ppn's and their functions on the system.

To copy files directly from the network to your system, log to 115,1 which contains the Khalsa Communications Software (thank you, Khalsa). Type a file called GET.LST located in 10,3 for more information on how to do the data transfer.

The electronic mail system allows you to leave messages for other users which they will receive the next time they log in. Type HELP MAIL for information. This is especially helpful if you wish to leave anything for the newsletter. Leave the source in your ppn and a note to Pat that it is there and the name. She can then print it for the newsletter with very little hassel.

Good luck on the network. Remember, Sharon can provide you copies of any and all programs for the price of your disk media.





# UPDATE SERVICE ORDER FORM

Please include me in your Software Update Service. I understand that releases will be made on a semi-annual basis. I further understand that releases will be sent COD according to the attached price schedule. Institutions unable to accept COD shipments should provide an open purchase order to be billed. Such open purchase orders are subject to approval by Alpha Micro. I may cancel my Update Service at any time by notifying Alpha Micro.

Please complete fully and return this page:

AM-100 Serial Number \_\_\_\_\_ Software Version currently being used \_\_\_\_\_

### SYSTEM DEVICE

AM-200 Floppy Controller (Persci)	_____	(Serial Number _____)
AM-200 Floppy Controller (Wangco)	_____	(Serial Number _____)
AM-210 Floppy Controller (CDC)	_____	(Serial Number _____)
AM-400 Trident Disk Controller	_____	(Serial Number _____)
AM-410 Phoenix Controller (15 Mb)	_____	(Serial Number _____)
AM-500 Hawk Controller (5 Mb)	_____	(Serial Number _____)

Floppy Disk Format	STD (128 byte sectors)	_____	
	AMS (512 byte sectors)	_____	(AM-200 only)
	Double Density	_____	
	Double Sided AMS	_____	(AM-210 only)

### TERMINAL

AM-300 Serial Interface	_____	(Serial Number _____)
AM-310 Communications Controller	_____	(Serial Number _____)
AM-100/T Serial Port	_____	

Additional release documentation. Qty \_\_\_\_\_ Check for documentation only \_\_\_\_\_

Please indicate the type of application your Alpha Micro is being used for. Please feel free to use the other side if necessary. \_\_\_\_\_

\_\_\_\_\_

NAME (Please print or type) \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_

\_\_\_\_\_

PHONE \_\_\_\_\_

DEALER WHERE YOU PURCHASED YOUR ALPHA MICRO \_\_\_\_\_

\_\_\_\_\_

SIGNATURE \_\_\_\_\_

P.O. Box 18347 - Irvine, CA 92713 - (714) 957-1404

## Software Update Service Price List

### Floppy Disks

STD Format Diskette (2 diskettes)	\$50.00
AMS Format Diskette	\$25.00
Double Density/Double Sided Diskette	\$25.00

### Hard Disks

5 Mb Hawk Disk Pack	\$125.00
15 Mb Phoenix Disk Pack	\$350.00

Each release consists of one system disk and one set of documentation. Additional sets of documentation may be ordered by checking the appropriate box on the order form. Pricing on additional sets of release documentation will vary from release to release, depending on the amount of documentation being distributed.

Release disks are configured to boot using port 1 of an AM-300 board at 9600 baud. If you have a different configuration, you will need to modify the release disk, using your present software, before booting with the new release.

Trident users will receive their updates on a floppy disk. Please check the format most convenient for you.

ICOM system disks are no longer available pre-configured. ICOM users will need to order a STD format floppy disk and configure the system prior to use of the new release.

Please make sure the configuration you are ordering is valid. The chart below shows an "X" in each of the valid configurations (i.e. AM-200 DD/DS is NOT valid).

	STD	AMS	DD/DS	5Mb	15Mb
AM-200	X	X			
AM-210	X		X		
AM-410					X
AM-500				X	

Prices effective January 1, 1980.  
Prices subject to change without notice.

????????? WHAT THE HECK IS SABTEG ???????????

Ever "lose" a program or subroutine because you couldn't remember the name?

Ever do a DIR \*.BAS/w and then wish you could remember what they all do ???

Are you the only one who knows what those six-digit names mean ??????????

\*\*\*\*\*

Would you like a directory organizer which exhibit explanatory labels ????????

\*\*\*\*\*

"SABTEG" IS \*\*GETBAS\*\* SPELLED BACKWARD

By typing \*\*GETBAS\*\* you:

1. Massage your directory bringing any new programs into alphabetical order.
2. Merge your newly alphabetized file with an existing annotated file.
3. Print out alphabetized annotated directory.  
(New programs will stand out as un-labeled.) Unless (see 4)  
New programs/s ubroutines appear in alphabetical order ready to be labeled. Old labels remain or can be modified/eliminated using VUE.
4. If you use a standard line#/first line in all your basic programs which includes your program name and description, it will read your program and print that first line with name & description, thus re-describing modified files as they change over time
5. If a file no longer exists, it is dropped from the index

Naturally all you clever readers will want to be able to get .DAT and .CMD

files too. Sc type \*\*GETBAS\*\* or \*\*GETCMD\*\* and those files will be massaged

and similar files \*\*ALPDAT\*\* and \*\*ALPCMD\*\* will be produced ready to label.

Send \$25.00 for Floppy Source & Object Code to:

Hank Boschen  
Alpha Hostel  
1107 12th Street  
Boulder, Colorado 80302

# Letters

Mohler Armature & Electric, Inc.  
RR #3, Eby Road  
Boonville, IN 47601

Since my last letter published in the July edition, I have learned a lot about my Alpha. The more that I learn, the more I find that I need to learn. I still feel that Alpha's documentation leaves something to be desired in some aspects, however, when I compared it to some other brands of micro computers. I found it to be above average in comparison.

In October, we installed a D. C. Hayes board in our computer and added a private line for that purpose. I receive the impression from some other computer people (locally) that I'm dumb for asking them how to use it. They seem to assume that EVERYBODY knows how to use a phone modem. I guess they learned it by osmosis. Anyway, I would like some plain English instructions on how to operate via modem after I dial the number and the computer makes the connection with, say, your network. How do I, for example, go about calling into the network and getting or donating a game? I have read the D. C. Hayes / Khalsa instructions and am still not 100% sure of the procedures.

On another subject, I have been 'playing around' with the use of CHR(X) in my Basic programs. I have found many uses for PRINT CHR(7) which makes the terminal BEEP or DING or however you want to say it. I am enclosing some of the numbers that I have tried to determine their effects on my terminal. (My terminal is an ACT-V by Micro-Term. Inc. and is set up in the TRMDEF as MIME.) The results given are the observed results and may not be 100% complete or correct. I had 'fun' just doing these first 30. Is there any documentation on this subject, and has anyone else already done this? I don't see any reason for re-inventing the wheel. Feel free to share and compare my results with anyone that you wish.

On a more serious side, our company is still looking for a business accounting package to fit our custom requirements. Our business is mainly rebuilding electrical motors, coils, building control cabinets on a custom basis, plus electrical construction work for coal mines, power plants, and industrial plants. We do business all over the U. S., and have gone out of the country to do jobs for a few customers' requirements. We also act as industrial distributors for several nationally known firms. We have five cost control centers out in the shop, plus labor and materials must be applied to each job with most of that work being done on a custom basis. Our inventory is used 90% for work in the shop and 10% sold over the counter at various rates. The inventory system must use our 12-digit numbering system. Payroll must permit splitting the labor hours to apply to each job plus keeping track of each cost center and keeping the usual records. Accounts payable and Accounts Receivable are normal. General ledger is probably normal also.

We do not have COBOL capability at this time. It must be in BASIC and/or Assembler languages. Interested persons should contact us at (812) 897-2900 between 8am and 4pm (CST). (Boonville is near Evansville in Southern Indiana.)

Lee W. Besing

## RESULTS OF USING 'PRINT CHR(X)' IN A BASIC PROGRAM

(List number is X)

1. Prints a blank line, deleted the output of a line which normally would have been printed
2. Inserted a blank line or skips down one line (is it control-B?)
3. Observed no visible results
4. Deletes a character (is it control-d?)
5. Locks keyboard (control-S ? or TAB code 7 ?)
6. Erases normal intensity characters only from entire screen and cursor goes to position (1,1) on screen
7. Rings terminal's bell one time
8. Horizontal movement (left arrow ?) (backspace ?)
9. Horizontal tab (tab key, moves to the right)
10. Moves cursor down one line (line feed key ?)
11. Vertical movement (down arrow ?)
12. Erases entire screen and goes to position (1,1) (is it Tab code 0 ?)
13. Carriage return key
14. Reduces intensity of screen, makes new characters to be dim. (Protect field - TAB code 11 ?)
15. Concatenate lines (control-O?)
16. Delayed beep, suppresses output to screen during the delay until the beep
17. Control-Q
18. Control-R
19. Changes intensity of screen back to normal intensity (Unprotect field - TAB code 12 ?)

20. Centers the cursor in the center of the screen
21. Prints a cursor in that position (and it stays there when the real cursor is moved)
22. Rings the terminal's bell
23. Control-W
24. Control-N
25. Same as 14
26. Control-Z
27. Control-[
28. Control-\
29. Control-] , moves cursor to position (1,1)
30. No results observed
31. No results observed

Some of these may need to be tried in a particular order to find out the results of those listed as no results observed. I used a basic program that asked for a particular CHR(X) to be inputted and then tried all combinations of the keyboard until the correct response was found. I also used a basic program in a loop to print out the CHR(X) so that I could try to observe the results.

\* \* \* \* \*

Jeff Kreider  
 Software Support, Alpha Microsystems  
 P. O. Box 18347  
 Irvine, CA 92713  
 (714) 957-1404

This is a somewhat belated response to the buglist published in the September issue of the SC/AMUS newsletter. Rather than attempt to respond point-by-point, I am just going to hit a few high points. We have excerpted all 'new' bugs from the list and added them to our SPR system, so rest assured that they will get the attention they deserve.

A patch for the problem with BASORT not sorting sequential files onto themselves was published in the October issue of Software Notes (available from your dealer).

A patch is also included in the same issue to correct a problem with the screen display of long lines in AlphaVUE.

Regarding switched bitmaps and spoolers in

bank 0, we do not recommend putting either in bank 0 for precisely the reason mentioned. All bank switched resources, whether bitmaps, spoolers, or whatever, should be placed in bank 1 or above. We do agree that the MEMORY should return an error rather than writing over the bitmaps, however.

Caution should be exercised when leaving terminal cables attached to the computer but not to the terminal. The EIA RS-232C spec specifies a maximum cable length of 50 feet. From the description of the problem, I would guess that this has been exceeded. As we all know, RS-232 will often work with cables greatly exceeding 50 feet, however, it is violating the spec and leads to problems like the one described due to the long cable acting as an antenna. When this happens, the noise fed back into the computer can cause a large number of interrupts, causing anything from 'flakiness' to system crash. The same problem can occur if a terminal is connected, but not turned on.

Solutions to the problem include shorter cables, shielded cable, lower baud rates, etc. Note that long cables can also cause noise problems even when the cable is properly connected and the terminal is turned on, if the 50 foot spec is exceeded. It is an unfortunate fact of life that a seemingly simple piece of wire can cause all sorts of unexpected problems. I would therefore suggest that if a terminal must be disconnected for maintenance, that it be disconnected from the computer end first. You may have to point this out to the person doing the maintenance, since they will rarely have any idea how long the cable actually is.

I would like to comment on a couple of items that were printed under the general heading of 'Real Time I/O'. First of all, what was implemented under 4.3 was the overlapping of seek and read time with the execution of OTHER jobs, not the execution of your own job. The job doing the disk I/O is still put to sleep during this time, since it cannot proceed until its request is satisfied. We currently have no plans to implement any method of having control return to the job requesting disk I/O as this is of very limited benefit in any case other than the single user system. As implemented, the overlap scheme used in 4.3 and later versions of AMOS can result in significant performance improvement on multi-user systems. As a simple test, try running RNDRED on one job, and time a compute bound benchmark on another job under 4.2 and under 4.3. You will see quite a difference.

It should also be noted that the 'DSK' device driver is always loaded in system memory automatically, since it is actually part of the monitor. The device driver is added to the basic operating system at MONGEN time, so there is no need to load any special 'DSK' driver into system memory. The note in the 'Last Minute Notice' was for users who have Hawks or Phoenixes that are used as peripheral (non-DSK) devices.

Under 'PPN Protection,' it should be noted that you can' only write files into PPNs within your project-number series (e.g., into all [100,\*] accounts if you are logged into [100,3]. Passwords have no effect on the ability to read or write disk files.

I hope that this information is of some use to you and your members.

Jeff Kreider

\* \* \* \* \*

Paul Gayeski  
Bay News Co.  
3155 NW Yeon  
Portland, Oregon 97210

The company I am working for is a magazine wholesaler. A very important part of the Alpha Micro's job at this time is to record magazine return data via scanning bar codes and some key entry. The system we have developed for this deals with five terminals (with scanners coming in from the auxiliary port) using an assembler data capture job for each terminal (about 3K each). Each job communicates (via system memory) to a Pseudo Terminal job that is, in effect, the file handler for all jobs. This file handler was originally written in Basic and must deal with 3 Isam files (input only) and 2 Random files (output only). We are fast approaching the time when I will have to convert this Basic program to assembler in order to get the speed needed for using Accounting and General Data Capture by 3 or 4 other jobs.

My main concern is that I am new to the Alpha and am not familiar enough with the process of dealing with Random let alone Isam files in assembler!! Wondering if you people can help with info on using files in Assembler and possibly even provide some sample listings of how to pull it off. I have read all of 'them there books' several times.

Also, we recently switched to 4.4b and seem to have a few Vue problems.

1. Vue does not do well if your partition size is less than 32k. It will sort of suspend itself when starting up. From Job1 I can run to some extent in 24050 bytes o.k. But from Job2 with 24450 bytes it will not work consistently and will mess up the job control blocks for both Job1 and Job2.
2. Vue seems to occasionally write out its updated file to blocks that are already in use!!! I am not sure, but it seems that if the ISAM.PRG or perhaps any program is inadvertently left in the users memory Vue has this problem. Running with a bit over 32K the ISAM.PRG of course brings Vue memory down below 32k

Under 4.3a I did get the impression once that some system programs possibly Dirseq or Sysact will tend to start executing old code left by previous programs or perhaps permanent modules. As I did have a totally scrambled directory once and got the impression (from whatever source) that the problem was along this line. If not execute perhaps utilize the wrong memory as data.

One last request. For the scanner job mentioned above we are looking for a sequential tape device in the \$1,000 range that can act as a continuous backup. Something like a cartridge tape that could hopefully be treated as a circular file. We have the Alpha Micro Mag Tape but it is far too demanding on the system to be used for this purpose and far too costly to be dedicated. Are you aware of or can you refer me to someone using a sequential tape cartridge or do you know if Alpha Micro will be supporting a 'Winchester Cartridge System' soon?

Very, very much appreciate your newsletter and the useful services it provides.

Paul Gayeski

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W. J. Blight, M.D.  
690 Elizabeth Road  
Winnipeg, Man R2J 1A4

Enclosed is payment for further years dues to AMUS. I would however like to bring one thing to your attention. The Amus newsletter is originally designed to bring problems, thoughts, etc., to all owners of Alpha Micro Computers. The last letter, however, is mainly advertising. If this should continue, I would feel that there may be many members who will not continue, especially with ads that have run every month for a long time.

I can realize that part of the problem is that any material for that letter would have originated likely during the summer, and who wants to do anything during that time. Also it reflects a lack of participation by all the users of Alpha Micro, which may reflect the lack of problems?

Anyway as part of my contribution, I am writing this note on the new AlphaPascal as just released. I have not had any opportunity before to use Pascal, found the original release to be very confusing, and with lack of time, never made any use of it. As a programmer I would class myself as an advanced amateur. I have found this release to be very good. My only complaint to date on the documentation is twofold; first, there should have been a few more examples, especially later in the document, for example in creating new libraries, and secondly,

there were apparently several things left out of the original. The dealers have been supplied with this in a newsletter, and have passed it on, but it tends to get passed on as 'here's a piece of paper and write down these'. Surely Alpha Micro for any changes could come out with separate sheets for distribution.

I am enclosing two programs which are written in the new pascal which the members may wish to make use of. In the old version of Pascal, there was a calculator program. This is unavailable in the new, and cannot be transferred. In the November issue of Interface Age was the same program. I have modified it to run on the Alpha Pascal, and the second is an enhanced version, which utilizes the number calculated for further calculations.

Re Pascal, why isn't Alpha Micro supporting Isam with it. I have written all my old programs using Isam files, and would very much like to change over totally to Pascal. I am even willing to spend the time to rewrite the entire system, that I have developed, as I feel Pascal is a nicer language, however they all depend on Isam files.

Few minor points - compiler returns total time to compile program. It would be much nicer if it could return CPU time. If running in multitasking environment like I am, time shown is totally irrelevant as it depends on the others on the system also.

Standard Pascal apparently does not use a ; before the last statement preceding the END. AlphaPascal seems to demand this, and it is one more difference between it and standard. Can't link one program to another.

Re Amus network, have not tried it recently. We have updated our Khalsa software, is this compatible with your system now. You also keep talking in the newsletter about each having an account on the machine. There has been no other information sent to us about the use of this, or little in the newsletter concerning any new approach to getting on the network. No update given at all on passwords to us also. I think a little more explanation in the letter for any of us who are not as experienced programmers would be of interest. It is better to bore one or two than leave many in the dark as to what is happening.

W. J. Blight, M.D.

Note: See 'Tidbits' for more information about the network.

\* \* \* \* \*

John V. Kjellman  
Victorex, Inc.  
1529 Cypress, Suite 103  
Walnut Creek, CA 94596

I see my comments about the poor quality of bug reports were not very popular with some of the membership. I still feel improvement could and should be made in this regard. I noted in the July issue a BASIC 'bug' reported for something my AlphaBasic manual clearly states cannot be done.

I strongly feel bug reports are extremely useful. My whole point is that the submitter and AMUS together should make a greater effort to qualify them, so some of us nervous nellys don't get to worrying about problems which really do not exist. And we should all put increasing pressure on Alpha Microsystems to release information about verified problems quickly instead of sitting on them several months until time for the next release, and even then not breathing a word to anyone about the specific problems which have been fixed. The move to provide AMUS edited copies of Software Notes appears to be a move in the right direction, assuming they are going to be published regularly, but I think even more could be done.

I do not know what the membership is, but perhaps it is time for a full or part-time well-qualified individual to act as editor of a bug report section of the newsletter. If this means higher dues, it might be worth it. Perhaps that person could also be the resident consultant, where old and new members could get their questions answered. Perhaps, too, there might even be ten or twenty dollar charge for such calls, assuming they resulted in useful information to the caller.

In my own case, there are undoubtedly times when I could be of assistance to a user, but it is very difficult to convey to you just what kind of questions I could easily field. I assume it is the same for other users, as I note the continued plea for people to volunteer to help other users. Also, I'm reluctant to get drawn into a situation where a significant portion of my day is taken up answering (or trying to) user questions. I'm just not in a position to afford the time, much as I would truly like to. But, I would never refuse a request for help if I could be of assistance.

On another subject, I would again like to put in a plug for something different than what seems to be the direction AMUS is taking. I refer to the 'network'. I really don't find it all that useful to be able to dial into the AMUS computer to get information. And, long-distance telephone charges are expensive. I would much prefer that a printed list of the software that users are

marketing be kept current and distributed a couple of times a year, for example. As for the programs in the library, I would much prefer to buy them from you on a diskette. Is the library for sale on diskette(s)?

My letter might be taken as critical of AMUS. I do not mean it that way at all. The real point is that AMUS is filling a very important function. I am simply trying to shape the direction of things to come so that it meets my needs even better. I think that what I want would be useful to the membership at large, but of course you and the board of directors must make that decision. On the plus side, the new format is a big improvement.

I sent a note to Paul Barhan, whose name you published in the July issue, about our FREBLK.SBR subroutine. It appears to be just what he is looking for. We have assumed there might be a good interest in our memory dumping program, also, which can dump memory from any bank in the system, and does not have to be loaded into system memory to do so. I sent a letter to you on this last month. I am enclosing a Software Report Form on it with this letter.

Back to bugs. I sent in a report in July about a long-standing (but infrequent and very nebulous) problem in RUN. When occurring, the problem is caused by DIM statements (or implicit DIM statements in the case of the first reference to an undimensioned and unmapped array.) I have since pinned the problem down very precisely in terms of what is occurring, and have passed the information on to Alpha Microsystems. What I do not know are the exact conditions required for the problem to occur, as most incidences of DIM cause no problems. I initially thought it was related to CHAIN, but that is not strictly the case. Also, it isn't necessarily the variable index area which gets corrupted when the problem occurs, it can be any part of user memory.

John V. Kjellman

Note: You may order any or all of the Network library on cartridge or 5mb diskette. Please contact Sharon Greene for your order.

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#### A P L Enhanced

Softworks Limited  
607 W. Wellington  
Chicago, IL 60657  
(312) 327-7666

APL has been enhanced to make AlphaAPL functionally compatible with mainframe implementations. System variables, system functions, I-beam, component I/O and other features have become available in release 2.0 along with other important features. Please contact Softworks Limited for additional information about AlphaAPL.

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#### M E M O R Y B O A R D S

Piiceon, Inc.  
2350 Bering Drive  
San Jose, CA 95131

SUPERAM-2	(64k for AM-100)	\$ 995
SUPERMEM	(32W for AM-100T)	1700
SUPERSTORE	(64W for AM-100T)	2000.

Piiceon now sells directly to the Alpha Micro user community. Orders may be placed c.o.d. or enclose check or money order (California residents please add 6% tax). Include a reasonable amount for shipping charges and specify how you want the board shipped. All boards have a one year warranty. They also have an emergency repair service which guarantees repair or replacement within 24 hours. For more information, contact Chris Bailey at (408) 946-8030.

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#### A M - 1 0 0 T M E M O R Y

John Hewlett  
Modern Information Methods  
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John offers a 64k Measurement Systems & Controls bank switched board for \$835 with a one year warranty. An excellent technical manual is included, plus (1) header wiring for the Alpha Micro; (2) DIP switch setting for banks (all you do is plug the board in); (3) testing on John's Alpha Micro. Price is f.o.b. Fullerton; include \$25.00 for shipping; the unused portion will be returned to you.

# Classified

## F O R S A L E

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# forethought™

## A FINANCIAL PLANNING AND FORECASTING SYSTEM FOR THE ALPHA MICROSYSTEM

Successful management requires planning for the future. Without a plan, your business may have no future. When management understands where the business is going, and why, it is more likely to succeed.

Management needs forethought to guide the business over the correct path. All plans and forecasts must be as realistic and accurate as possible. You need to control events, rather than be controlled by them.

### FORECASTING

A forecast attempts to predict the business' future from a set of initial conditions and a particular plan of action. A "model" of your business is created when you combine a set of initial conditions with a plan of action. The model is then used to generate a forecast. Any change in this model will result in a new forecast.

The creation of the forecast is usually a very time consuming process. Many hours can be spent with pencil and calculator, trying to compute the outcome of a particular model. A few variations in the plan, or the initial conditions, and you have to prepare a new forecast. The forecast is prepared by a member of Management — someone whose time is valuable and could be better utilized studying the forecast rather than creating it. A computer can do the work in a fraction of the time, saving a considerable amount of money — without arithmetic mistakes. Creating a custom computer program for each model to be tested is prohibitively expensive. Since financial modeling is so important, several large software systems have been developed which allow you to easily create and modify financial models and forecasts. One such financial modeling tool is FORETHOUGHT.

Conventional "manual" forecasting is a multi-step process:

- 1) Think about the problem to be modeled or forecast.
- 2) Design the report — column headings and line descriptions.
- 3) Determine what the initial or starting conditions are.
- 4) Determine the calculations required to compute the forecast.
- 5) Perform all of the calculations.
- 6) Prepare a report.

Similarly, when using FORETHOUGHT, the following steps are required:

- 1) Same as above.
- 2) Enter a Report Description.
- 3) Enter Preliminary Values.
- 4) Enter a Calculation Sequence, using any of the 86 rules.
- 5) Tell Forethought to execute the model.
- 6) Tell Forethought to print the report.

**CompuWest**

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In either case, the forecast will invariably need to be modified. If the forecast was prepared manually, everything must now be re-calculated and re-written. But with Forethought, since the entries you made in steps 2, 3, and 4 have been stored in files on your computer, you may, at any time, revise any of the information in steps 2, 3 or 4; then simply tell Forethought to print a new report.

## HOW TO USE FORETHOUGHT

To illustrate how Forethought works, let's look at a very simple quarterly sales forecast.

	1st QTR	2nd QTR	3rd QTR	4th QTR	YEARLY TOTAL
% GROWTH		5	10	15	
PRODUCT A	100,000	105,000	115,500	132,825	453,325
PRODUCT B	200,000	210,000	231,000	265,650	906,650
PRODUCT C	300,000	315,000	346,500	398,475	1,359,975
SALES TOTAL	600,000	630,000	693,000	796,950	2,719,950

To create this forecast with Forethought, you first tell Forethought that you want to enter a Report Description. It asks for the descriptions to be used at the top of each column, and at the beginning of each line. You enter them.

Next, tell Forethought that you want to enter some Preliminary Values. It asks which columns and lines you want to enter these values in. You enter the growth rate in line 1, and the sales for products A, B, and C in column one. Next, you tell Forethought that you want to enter a Calculation Sequence. It asks for the first step in the sequence: which of its "rules" you want to use first. You first want to use rule number 8, grow a line by a line. It then asks you which line you want to grow, and which line to get the growth rate from. You enter 3 and 1.

Similarly, you continue to designate which steps (or "rules") are to be used in the Calculation Sequence, and for each rule you enter the information requested by Forethought.

In other words, Forethought helps you to describe the step by step procedures you need to perform in order to produce a finished report. Forethought requires no programming experience, only good business sense.

For more complex, frequently used procedures, there are special time-saving "rules" available, such as: compute percentage, return on investment, and various types of depreciation. For the more sophisticated planner, we have provided very "advanced rules", which allow branching, conditionals, and indirect calculations.

## FORETHOUGHT: CALCULATION RULES

### LINE RULES

1	ADD TWO LINES	2	ADD A GROUP OF LINES
3	SUBTRACT TWO LINES	4	MULTIPLY TWO LINES
5	MULTIPLY LINE BY REGISTER	6	DIVIDE TWO LINES
7	DIVIDE LINE BY REGISTER	8	GROW A LINE BY A LINE
9	GROW A LINE BY A REGISTER	10	FILL LINE WITH CONSTANT
11	EXTEND A GROUP OF LINES	12	INTERPOLATE LINES
13	ACCUMULATE A LINE	14	COMPUTE GROWTH RATE
15	SHIFT LINE'S POSITION	16	COMPUTE PERCENTAGE OF LINE
17	COMPUTE LINE AVERAGE	18	COMPUTE MOVING AVERAGE
19	COMPUTE EXPONENTIAL AVERAGE	60	DISPLAY LINE OF VALUES
68	FIND MINIMUM LINE VALUE	69	FIND MAXIMUM LINE VALUE

### COLUMN RULES

20	ADD TWO COLUMNS	21	ADD A GROUP OF COLUMNS
22	SUBTRACT TWO COLUMNS	23	MULTIPLY TWO COLUMNS
24	DIVIDE TWO COLUMNS	25	EXTEND A GROUP OF COLUMNS
26	FILL COLUMN WITH CONSTANT	27	COMPUTE PERCENTAGE OF COLUMN
28	COMPUTE COLUMN AVERAGE	29	SHIFT COLUMN'S POSITION
61	DISPLAY COLUMN OF VALUES	79	MULTIPLY COLUMN BY REGISTER
80	DIVIDE COLUMN BY REGISTER	81	GROW A COLUMN BY A COLUMN
82	GROW A COLUMN BY A REGISTER	83	INTERPOLATE COLUMNS
84	ACCUMULATE A COLUMN	85	FIND MINIMUM COLUMN VALUE
86	FIND MAXIMUM COLUMN VALUE		

### REGISTER RULES

30	ADD TWO REGISTERS	31	SUBTRACT TWO REGISTERS
32	MULTIPLY TWO REGISTER'S	33	DIVIDE TWO REGISTERS
34	COMPUTE RECIPROCAL	35	COMPUTE SQUARE ROOT
36	COMPUTE INTEGER OF REGISTER	37	COMPUTE EXPONENTIAL
38	COMPUTE NATURAL LOG	39	COMPUTE LOG BASE 10
40	RAISE REGISTER TO POWER	41	SET REGISTER TO CONSTANT
42	SET REGISTER TO PI	43	MOVE REGISTER TO REGISTER
44	INCREMENT A REGISTER	45	DECREMENT A REGISTER
62	DISPLAY REGISTER	70	COMPUTE FACTORIAL

### FINANCIAL RULES

46	DEPRECIATION (VARIOUS TYPES)	47	RETURN ON INVESTMENT
48	SUM OF YEARS DIGIT METHOD	49	COMPUTE PRESENT VALUE
50	AMORTIZE A LOAN	51	CROSSFOOT COMPARISON

### ADVANCED RULES

52	SET ARRAY FROM REGISTER	53	SET REGISTER FROM ARRAY
54	SET REGISTER FROM KEYBOARD	55	COMPARE VALUES AND CHANGE
56	COMPARE VALUES AND BRANCH	57	COMPARE REGISTERS AND BRANCH
58	UNCONDITIONAL BRANCH	59	BRANCH ON REGISTER
60	DISPLAY LINE OF VALUES	61	DISPLAY COLUMN OF VALUES
62	DISPLAY REGISTER	63	DISPLAY MESSAGE
64	NULL RULE	65	SAVE DATA AND RESTART
66	PAUSE	67	STOP
71	CONSOLIDATE BY LINE	72	CONSOLIDATE BY COLUMN
73	PROCESS SEQUENTIAL FILE	74	LINK TO CALCULATION MODEL
75	INDIRECT CALCULATION	76	FILL ROW WITH COLUMN
77	FILL COLUMN WITH ROW	78	CONSOLIDATE BY REGISTER

## SAVE TIME AND MONEY!

CompuWest introduces Syndex, an information management system designed to help you increase your profits and to help you more effectively manage your business. Reduce your costs by eliminating costly programming and extensive training. Maximize the capabilities of your Alpha Microsystem by utilizing software optimized to help you find the information you need quickly and easily.

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— Dick Metcalfe, Property Appraiser

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— Leon Brachman, Alpha Microsystem dealer

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— Gerald Burg, Management Consultant

After three years of development and field testing, Syndex is now being used in over 60 different installations.

Prices for complete software systems depend upon the specific installation requirements. A demonstration version is available on a floppy disk for \$100.00, including a complete manual. Manual only, \$35.00.

Increase your company's profits and save time and money by using this proven, quality software. Ask your Alpha Microsystem dealer for more information, or write:

**CompuWest**

# Wishing Well

Rick Schultz  
Mountain West  
P. O. Box 10780  
Phoenix, AZ 85064  
(602) 263-8831

\* \* \* \* \*

Rick is looking for a used Hawk drive.

Arthur S. Rathkey, M.D.  
744 W. 17th  
McMinnville, OR 97128

\* \* \* \* \*

Dr. Rathkey is looking for (1) CP/M to Alpha Micro; (2) Dec to Alpha Micro; (3) a disk programmed course for Alpha Micro Basic/Pascal/Forth; (4) General Ledger; (5) any other suggestions for home tutorials; and (6); a list of programs on the network.

Elmer G. Mitchell  
Business Computing Service  
1520 18th Street  
Huntsville, TX 77390  
(713) 291-3447

\*\*\*Note: A listing of the Network directory was published in the July, 1980 newsletter and will be repeated in the February, 1981 newsletter.

Elmer is looking for a terminal driver for the ADM-31 or Televideo 920 which will allow the use of the special text editing keys in Vue. The source code must be provided at a reasonable price.

## LONESOME?

\* \* \* \* \*

John Lindsay  
18645 W. Hatteras #220  
Tarzana, CA 91356

John has free information about a fix which may help you avoid disk problems on a Phoenix; i.e., head crashes, etc. Please write John for further information.



\* \* \* \* \*

Joseph Gaffney  
321 Lyndhurst  
Lyndhurst, NJ 07071

Joseph is looking for an S-100 plug-in continuous functioning calendar-clock. It should run continuously on its own battery or small auxiliary power supply, even when the main frame is off for about two weeks. It should also set the Alpha Micro time and date correctly during System.Ini.

LIKE TO MEET NEW  
PEOPLE?  
LIKE A CHANGE?  
LIKE EXCITEMENT?  
LIKE A NEW JOB?  
JUST SCREW UP ONE  
MORE TIME!

BUGLIST #16 (Version 4.4B) 12/19/80

Three more sub-releases since buglist #15 :

- 4.4B --- The new PASCAL release (09/22/80)
- 4.4B(1) --- Some patches to 4.4B given in Software Notes #4 (10/14/80).  
Programs affected were COMPIL,ACTIV.TDV,FLOCK.SBR
- 4.4B(2) --- More patches to 4.4B given in Software Notes #5 (11/29/80)  
Programs affected were SYSTEM.MON,VUE,BASORT.SBR

Incidentally, when I give dates, they are always "earliest known receipt". Sometimes, customers will get releases before their dealers do.

For AMUS members & AM users in the SF area, there is a local AMUS chapter forming, which is evidently going to be called "FAMUS". An organizational meeting was held on Wednesday 11/05/80 in Mill Valley. If you are interested in joining, or just want to check it out first, contact

George "Butch" Hoover  
c/o Grange Debris Box & Wrecking Company  
2021 Francisco Blvd  
San Rafael, CA 94901  
415-456-2712

There are plans to seek out a more central meeting place (perhaps SF). If the Marin County location seems too far away for you, respond and say so. Meetings are currently the first Thursday of each month. If that is a holiday (eg, 01/01/81) FAMUS meets the second Thursday (eg, 01/08/81).

Finally, I am going to be at the first annual AMUS convention, sponsored by Bill Miller in Miami (01/18/80 through 01/23/80), and will give 2 talks, One on "Bugs & AMOS History", and one on "Assembler & FIX". If you are still unaware of the convention, give Bill a call at 305-233-1216.

Bob Fowler  
Alpha Information Systems  
800 San Antonio Ave  
Palo Alto, CA 94043

- (1) BASIC --- "SAVE <random file>" crashes all users

If <filnam.ext> is a random file, and you attempt to save something from BASIC on top of it, the system will crash exotically, with much garbage displayed on the screen the next time anything is typed.

- (2) BASIC --- minor hassle with MAP overlays

The following sequence of events will lead to a BASIC error message :

```
BASIC
10 MAP1 A
20 MAP2 B,B,1
   SAVE FRED
   BYE
   BASIC
   LOAD FRED
30 MAP1 C, @A
```

The error message is "Illegal or undefined variable in overlay". If the 4 indented lines above are omitted, there are no problems.

- (3) BASIC --- wrong file gets written to !

This bug is from Bill Miller; all I did was "strip it down" to 8 lines.

Execute the following in BASIC :

```
100 ALLOCATE "TEST1.DAT",1
110 ALLOCATE "TEST2.DAT",1
120 OPEN #1, "TEST1.DAT", RANDOM, 4, RECNO1
130 OPEN #2, "TEST2.DAT", RANDOM, 4, RECNO2
140 WRITE #2, "AAAA"
150 OPEN #3, "TEST.LST", OUTPUT
160 PRINT #3, "BBBB"
170 CLOSE #1
```

! No problem if this line deleted

Then type "DUMP TEST2.DAT" at AMOS level. Although this file was #2 in the program, it will now contain the output from PRINT #3 (including the 2-byte sequential file pointer) !!  
[thanks, Bill]

- (4) BASIC --- problems when device driver is not loaded into memory (part 1)

From within BASIC, any access to a device (including the login device) whose driver is not in system or user memory will in general fail. This applies to LOAD,SAVE,LOOKUP,ALLOCATE,OPEN,CLOSE (others ?). A typical example would be a head disk system with floppy peripherals, or even an AMS format system accessing "STD:" without STD.DVR loaded. In general, this is forgivable, as it raises implementation problems, but for now, BASIC in general simply tells you it "cannot find the file", and in the case of ALLOCATE will cause a buss error !  
[thanks, Bill Miller for the help]

- (5) New BASIC Manual --- much better

This just came out (October 1980). Over twice as thick as old one. I have sent a list of minor typos to Alpha Micro; not worth including them here. I have an additional suggestion for section 13.4, though. The description of TAB(x,y) now says that the screen starts at TAB(1,1) (used to say TAB(0,0) which was wrong), but it still does not say that TAB(x) starts at TAB(0), although this is a "standard" in most BASIC implementations.

(6) VUE --- extension of .ZZZ not allowed because of FSPEC quirk

Buglist #15 bug #6 reported that an extension of .ZZZ is not allowed on VUE files. This is evidently due to the fact that the monitor call FSPEC requires a default extension (which cannot be blank). Assembly language buffs can infer the problems that result. This is not a bug. [thanks, Jim Rae]

(7) VUE --- problems when device driver is not loaded into memory (part 2)

If you are in VUE and try to YANK a file from a device whose driver (eg, AMS.DVR) is not in system or user memory, VUE will report that it cannot find the file. This is the same problem as with BASIC above. However, if you log into AMS0 and do some VUEing over there, VUE has no problem reading & writing the files over there. This is because AMS.DVR is per-loaded by VUE before editing begins (you will find that you now have about 894 fewer bytes of room in VUE than when you VUE a file on device DSKn).

(8) VUE --- control-V doesn't work if tabs precede current word

If you position the cursor over a tab, which is immediately followed by a "word", it won't do anything. Control-V will function as desired if it is positioned on a blank which immediately precedes a "word". [thanks, Lai]

(9) VUE --- GLOBAL (still) has problems

There are at least 3 bugs in the GLOBAL command. To demonstrate all 3 of them, create a 1-line file, with all "1" characters in it. Then do a GLOBAL replace of "1" with "2" on it. The 3 bugs are as follows :

- (a) After each replace, GLOBAL skips an extra character before continuing its search. Hence, the above GLOBAL example will end up with the string "2121212121...."
- (b) GLOBAL always reports "<n> strings replaced" after it is done, but if there are 73 or more 1's in the example above, you will find that this report is displayed & then immediately erased (9600 baud ?).
- (c) If GLOBAL makes any replacements beyond column 72, then it moves the MARGIN. Specifically, if c is the highest column location where a replace was made by GLOBAL, then when GLOBAL is finished, the MARGIN will be set to c-72. This will not appear on the crt screen, however, until you hit escape twice to repaint the command mode screen. [Reportedly, 4.3 VUE had the additional problem that, as GLOBAL moved the MARGIN setting progressively to the right, it failed to find any match strings that were off the left end of the crt screen.] [thanks, Kathy Delude]

(10) VUE --- PUSH/POP malfunctions slightly at beginning of file

This problem acts similiar to the YANK problem at beginning of file.

VUE <anyfile>	[to demonstrate, VUE anyfile]
control-^	[go to first page and line of file]
esc	[go to command mode]
PUSH	[save environment]
esc	[go back to screen]
<...>	[move cursor to anywhere on screen]
esc	[go to command mode]
POP	[restore environment]
esc	[return to screen]

The screen will now consist of lines #2 thru #25 (versus #1 thru #24).

(11) VUE \* --- gives less-than-perfect error message

VUE responds to the above command with the following :  
"?Cannot OPEN - buffer not INITed"  
[thanks, Gerry]

(12) VUE --- REPLACE has problems when search string ends with blank

Let's say you have the following file :

```
10 PRINT:
20 PRINT
30 PRINT
60 PRINT
70 REM
```

! comes here on 3rd match (bug)  
and you want to change all "PRINT" to "?", but don't want to include similiar strings like "PRINT:", so you use a REPLACE command on "PRINT " (note the trailing blank). Well, actually the PRINTs above are not followed by blanks, but by carriage returns. Happily, however, VUE says "that's ok", and finds all 3 of the PRINT statements above. The bug : VUE sometimes puts the cursor in the wrong place. If >2 matches are found on the same crt "page", the cursor will be positioned (n-2) rows below the actual position of the nth match. As soon as a new page is displayed, the problem again goes away until the 3rd match on that page. At any time, 2 escapes will correct the screen display, but will terminate the REPLACE command. Furthermore, if 15 PRINT "HI" is added to the program (a true occurrence of "PRINT "), the cursor will now be positioned (1,1,2,3,4...) rows below the (1,2,3,4,5...)th match. [thanks, Lai]

(13) VUE --- control-C affects WHOLE in a less-than-perfect fashion

If a WHOLE search command is executed on a VUE file in which the first occurrence of the search string occurs somewhere beyond the current memory buffer, then 1 of at least 3 things can happen. If control-C is hit before WHOLE gets to the end of the current buffer, the command will gracefully abort. If it is hit while the next buffer is being read in, then VUE will exit to AMOS ! This happens to me. A customer of ours reports that once when HE tried this, he got silence for an "extended" time interval, then a monitor ".", after which inputs were echoed properly, but system didn't respond at all. [thanks, Jim]

(14) VUE --- MARGIN n sometimes causes 24th line to get bad display

Enter the following commands (hope the following is clear) :

VUE A.B	[a new file]
Y	[yes, create it]
AB control-H control-H escape	[no blanks : 5 keystrokes]
MARGIN 2	[command mode]
escape	[return to display]

Line 24 will now contain (instead of asterisks) the characters "AB" followed by spaces. Line 1 will be all blank (which is correct). Furthermore, if you then type the following :

escape
MARGIN 1
escape

Line 1 and 24 will now both be ok, but another line will be bad. On the SOROC, line 8 will contain an "A" followed by asterisks. On an AMPEX (TDV written here) we get "AB" followed by spaces on either line 8,12 or 15 at different times.

(15) PRINT --- problems when device driver is not loaded into memory (part 3)

You can't spool files from devices whose drivers are not loaded into system or user memory. PRINT is able to find such files and log the spool request, and even display an acknowledgement on the user's crt, but the spooling job fails to print the file. This is because there is no room for the spooling job to load the driver (eg, AMS.DVR). The good old PSEUDO driver just MUMBLES away the error message ... Theoretically, adding an extra 1K to the spooler job would cure this.

(16) SPOOL.SBR --- a bug and a DDT fix

This was reported in Buglist #15 bug #24. A buglist from the Sep 1980 SC/AMUS newsletter by John Ryan has pinpointed the exact problem. It is demonstrated by the following program :

```
10 MAP1 FNAME,S,10,"TEST.LST"
20 MAP1 TEST,S,5,"12345"
30 XCALL SPOOL,FNAME
40 PRINT TEST      ! first byte is destroyed
```

The first byte following the file name is always destroyed by SPOOL. We have disassembled SPOOL.SBR here and have thus have a DDT fix. For the sake of brevity, I will assume that you know how to run DDT. The "before DDT" version is on the left; the "after DDT" is on the right.

```
46/ MOV (R1)+,R2      46/ LEA R0,50(R4)
50/ MOV R2,-(SP)      52/ MOV R0,2(R4)
52/ ADD (R1)+,@SP
54/ MOVB @0(SP),R0    56/ MOV (R1)+,R2
60/ CLRB @0(SP)      60/ MOV R2,-(SP)
64/ MOV #41400,0(R4) 62/ ADD (R1)+,@SP
64/ MOVB @0(SP),R0    64/ MOVB @0(SP),R0
72/ LEA R0,50(R4)    70/ CLRB @0(SP)
76/ MOV R0,2(R4)     74/ MOV #41400,0(R4)
```

Note that the net effect is to move bytes 72-101 to 46-55.

(17) SRCCOM --- still fails for large enough files

A SRCCOM between two 400-block files crashes the system. The files were identical except for a line here-&-there that had slight differences (in other words, the lines always "matched up").

(18) DSKPAK --- a DDT fix

DSKPAK first appeared in 4.0 (1/1/79) and 4.1. It crashed AMOS. Then in 4.2,4.3,4.4,etc it did some, but not all packing. The problem since 4.2 has been that DSKPAK failed to properly sort the files in order of "first block" on disk. DSKPAK does a "cheap" sort; it swap pairs of files if they are out of (first block #) order. If any swaps were made in the last pass, it makes another swap pass. The bug is that only 1 pass was being made in all cases (incorrect BNE). Thus, DSKPAK has to be run n consecutive times in order to guarantee that the last n random files are properly packed. To fix this :

```
LOG SYS:
DDT DSKPAK
1140/ BNE 1072 BNE 1052 [one bit ....]
control-C
SAVE DSKPAK
```

We tried the fixed DSKPAK. It takes longer. It works the first time. This bug was fixed only after a complete disassembly of DSKPAK.

(19) DSKPAK --- doesn't update the bitmap

After running DSKPAK, you must MOUNT the disk just packed. If you don't, and someone writes on the disk, it's time for DSKFIX. (This same state of affairs used to exist with 4.3 DSKANA, but it was remedied in 4.4 DSKANA). Nothing about this is mentioned in the documentation for DSKPAK. [thanks, Gerry]

(20) FIX --- pretty neat, eh Assembler fans ? (some minor bugs)

I used FIX for the first time on 10/6 and found it a real gem. If you use assembler and haven't tried it, you are wasting valuable time. The de-bugging time I saved using it the first time more than compensated for the time spent reading the manual and learning to use it. Some bugs :

- (a) Lines longer than 67 characters in MAC files (such as long TYPE lines) go past column 80 in dis-assembly mode, and cause display problems. Also, a CRLF on the 24th crt line command scrolls the screen up.
- (b) Move byte instructions (eg, MOVB (R2)+,(R4)+ ) are executed okay, but when single-stepped, the data field always displays the even byte of the destination word. Thus, in a byte-transferring loop, each even byte will be displayed twice, rather than even-then-odd byte.
- (c) The RAD50 command doesn't appear to work, but I may be wrong.
- (d) When a USREND monitor call is single-stepped (using return), FIX acts as if a control-X was entered (proceed to breakpoint). A temporary fix is to set a breakpoint on the following line.
- (e) The bitmap monitor calls DSKALC,DSKDEA,DSKBMR have problems. When single-stepping, all 3 display junk ("") in the label area. DSKALC will sometimes dis-assemble correctly, & sometimes as "Invalid special disk call #48". DSKDEA will sometimes dis-assemble as "DSKALC", & sometimes as "Invalid special disk call #48". DSKBMW will dis-assemble as "DSKALC".

(21) DEVTBL line --- must exist in INI, even if no devices listed in it

If the following SYSTEM.INI is used to boot a Phoenix-based system :

```
JOBS JOB1
TRMDEF CRT1,AM300=1:14,SOROC,100,100,100
; DEVTBL
BITMAP DSK,1818,0
SYSTEM
CLKFRQ 60
MEMORY 0
and some harmless (read-only) programs are run (eg, SYSTAT) all is ok.
Now type one of the following sets of commands :
LOAD SYSTAT      LOAD SYSTAT
BASIC            or      VUE <anyfile>
BYE              SYSTAT
SYSTAT
```

DSKO is now gone from the device table and you will have to reboot. If you now remove the ";" from the DEVTBL line, you will get an error during boot time ("cannot find .DVR"), but the device table will be ok. This is because AMOS sets up a temporary device table in high RAM during sysgen time which remains there until DEVTBL is executed before "SYSTEM".

15

(22) SYSTAT --- LD and DS status states never actually appear

The SYSTAT reference sheet gives a list of status codes that can appear in a SYSTAT display. Two of these, LD (Program Load State) and DS (Disk Access State) cannot appear. This was determined after disassembling SYSTAT. These same two codes also appeared in the old (1977 vintage) green AMOS manual, so this is probably a holdover oversight. When actually doing heavy disk accessing (eg, REDALL) or heavy loading (eg, LOAD large module) SYSTAT shows an IO state most of the time, and RN state some of the time.

(23) BITMAP --- display isn't correct

BITMAP is supposed to display the first & last BITMAP memory addresses. The first address is correct, but the last one is 10 bytes too low. The programmer evidently confused words with bytes in the following:  
Last address = first address + 10 words (DDB) + Bitmap Size - 2

(24) PRINT.SBR --- can't change title after first page

19 If LINCNT<99, then page 1 of a report puts the CONAME string at the top of the page, and the title is put below it (it can be > 50 characters). After page 1, the title is put on the top line, and is truncated to 50 characters. Supposedly, one could thus send a long (>50) title to PRINT for the first page & send out a shorter title (<51) to succeeding pages. Wrong. Evidently, PRINT saves the title from page 1 and uses it on all the remaining pages. If you send off a different title after page 1, it will be ignored. This is not even hinted at by the documentation.

(25) DIAG4 --- does NOT perform leak down test

The DIAG4 documentation looks a lot like that for DIAG3. In fact, it even says that DIAG4 does a leak-down test (like DIAG3). It doesn't.

(26) New ALPHAPASCAL --- manual erratum

Page 12-3, last line --- "returns INTEGER" should be "returns REAL"

(27) Assembler Manual - errata

Pages 3-6,3-8, no mention is made of the fact that, if a GETMEM fails, this may be tested immediately after the GETMEM with "BNE <fail>".  
Page 6-12, 6.2.8.2 should point out that if the buffer size (DDB+4) is larger than the device record size, then one READ call will read multiple (contiguous) records from the input device to fill it up. Also, if it is smaller, than only part of a record is read in.  
This is useful when reading in the bitmap (up to 8 blocks long).  
Page 6-18, line 14, "WORD 0" should read "BLKW 0".  
Page 6-19, line 17 "through 27" should read "through 37" (two typos).  
Page 6-20, line 32 and 33, "third" & "second" should both be "second"

(28) WAIT.SBR --- should display "occurring" not "occurring"  
[thanks, Terri]

(29) ACTIV.DAT --- errata in hash code of fix

Software Notes #4 (1980 Sep) gives a fix to ACTIV.MAC and ACTIV.TDV. The hash code for ACTIV.DAT is given as 425-435-064-136 (should read 425-453-064-136).

AMOS SUGGESTIONS (Version 4.4B)

(1) BASIC --- add an UPDATE #n command to force pending disk writes out

Whenever a WRITE #n or PRINT #n is executed in BASIC, AMOS only updates the pending output buffer; the block itself is not actually WRITEn to the disk until a separate block is READ/WRITEn, or the file is CLOSEd. When designing "crash resistant" systems, this sometimes poses problems. Some less than perfect ways to force updates are as follows:

- (1) CLOSE and re-OPEN file (easy to code, takes several disk accesses)
- (2) Use FLOCK action 3, then write record, then FLOCK action 5. This forces an actual disk write (FLOCK documentation never actually comes right out and say this, but it happens).
- (3) READ first & last records of file (if file is > 1 block) This appears to be the fastest way at present time. FLOCK is evidently cumbersome in time usage ...
- (4) add an extra block to the end of every (random) file, which is never used for data; to force a disk update, read that block.
- (5) If you have 512 byte records, read the next block immediately. This trick occurs in some places in Alpha Accounting.
- (6) Use good programming.
  - (a) Don't merge "in place". Create new file, merge, RENAME.
  - (b) When "posting" to an indexed file, rename index, add all records to end of main file, then update record counter at very end and CLOSE. Then re-create new index. An AMOS crash at any time will then be easily recoverable.
- (7) Have Alpha Micro implement an UPDATE #n command, to disk writes. My personal favorite is (6), but I wouldn't mind seeing (7) for those "impossible cases".

(2) VUE --- add control-X to those commands that interrupt screen update

Control T,R,E,A all interrupt any current screen updating. In buglist #15 I suggested adding control-S. Make that "control-S and control-X".

(3) VUE --- add AUTOSAVE command (a great idea !!!)

Are you one of those users who always get caught with their pants down when the system crashes? In other words, 30 minutes in VUE without a single save? The answer: use SAVE every so often. Well, some people never seem to learn (including me!). So how about AUTOSAVE <n>? VUE would automatically SAVE your file every n minutes. To cut down on the amount of needless checking, VUE should only have to check the AUTOSAVE "timer" after every command, control key, or return. Thus, spending 30 minutes on the same line would produce no AUTOSAVE updates. [thanks, everybody]

(4) PRINT --- add /CLUSTER option

In a system with 1 printer & > 1 users, it is possible to create a print queue with alternating forms ("NORMAL", "CHECKS", "NORMAL", "CHECKS", etc). Allow a /CLUSTER option in PRINT.PRg and SPOOL.SBR which would insert the current spool request immediately following the first cluster of files of the same "forms" type. Thus, if the spool queue currently contains files with forms types N,N,C,C,N and a file with type C is spooled with /CLUSTER option, it will be inserted between the 4th and 5th positions. [thanks, Vicki]

(5) DSKCPY --- "devn" inputs can lead to real trouble

DSKCPY accepts inputs of either device names "devn:" or just numbers "n". This is to maintain compatability with earlier releases that used "n". Unfortunately, device names without ":" (eg, "DSK1") go in as "0" !!! Leaving off the ":" is a very common mistake, especially among new users. This can lead to catastrophic results ! Please add a check for this !! [thanks, Tom]

(6) CRT410 --- make re-usable

If CRT410 is loaded into memory, executed, then used again, the track count is apparently not reset to zero. This should be trivial to remedy.

(7) "MOVE" --- new utility program

This would be nice. Just like COPY, except that it doesn't actually rewrite the disk blocks in the file, but only moves the file name from one PPN UFD to another PPN UFD. Thus, you could shift huge blocks of programs from one PPN to another with almost no work room left on the disk; also, it's much faster this way. [thanks, Gerry]

(8) MACRO --- put in an option to print out execution times of instructions

This would be trivial to add to phase 3 of MACRO, or perhaps FIX. Simply add a 4-digit column to each line of source code that gives the number of machine cycles taken to execute that instruction. Slight problems with Monitor Calls, Macros, Floating +/-, Block Moves. For these, some can be resolved (eg, some monitor calls), others could be "lower-bounded", and others would simply have to be "\*\*\*\*"ed .

Note : All you people out there who have created AM-100 disassemblers, this would be a welcome addition (and trivial for you to add !).

(9) MACRO --- add date & time to the Pass 3 listing

This currently has as headers : Program (left) - Title - Page #'s (right)

(10) CRT410 --- "Track 0 did not verify" message may be mis-leading

If you write protect a Phoenix disk drive and attempt a CRT410, or if you don't MOUNT the device and attempt a CRT410, you will get this somewhat uninformative error message. The possibility that this error message occurred because track 0 is actually bad is quite low, since both AM and CDC check this out on all disks that pass through their hands.

(11) SAVE --- allow control-C

As of now, SAVE \* cannot be control-C'ed until every file has been SAVED.

(12) SAVE --- LOADING & SAVEing a 1-block-510-byte file adds 1 block it

If you create a file with 510 bytes in it, then it will occupy 1 block. The directory will show 512 bytes in use in the last block (2 for the next-block pointer). COPY doesn't change this. LOAD/SAVE changes it. SAVE will add 1 more block to the file, and show 2 bytes in use. A minor point, since both are technically correct (510=510+0), but SAVE should probably be changed to conform to AMOS convention.

The reason why BADBLK.SYS has 2 blocks after a DSKCPY is because DSKCPY first LOADs any BADBLK.SYS, does the DSKCPY, then SAVEs BADBLK. [Buglist #15 suggestion #5 had an erroneous analysis of this situation]

(13) DEVTBL --- add display of bad tracks

Please put the bad tracks to the right of the other information for each device. It is not likely that this data will take >80 columns.

AMOS NOTES (Version 4.4B)

(1) BASIC variable names --- anything goes !

In FORTRAN or PASCAL, the following would be absolutely forbidden.  
 10 A=1 : a=2 : A%=3 : a%=4 : A\$="A" : a\$="B"  
 20 A(1)=5 : a(1)=6 : A%(1)=7 : a%(1)=8 : A\$(1)="C" : a\$(1)="D"  
 30 PRINT A; a; A%; a%; A\$; a\$  
 40 PRINT A(1); a(1); A%(1); a%(1); A\$(1); a\$(1)

The 12 values printed out will all be distinct (no variable conflicts).  
 Furthermore, another 12 variables can be created by adding a ' after each of the above upper or lower case A's.

(2) BASIC --- IF/ELSE can be used (correctly !) without THEN

The following line may be entered, compiled, and run ok in BASIC :  
 IF <cond> ELSE <statement>  
 It executes, correctly, meaning that it executes the same as :  
 IF NOT <cond> THEN <statement>  
 [thanks, Lai]

(3) BASIC --- hints on branching out of FOR loops

It is a well-known fact that every time you GO TO out of a FOR loop, you lose 18 bytes of memory; do this enough times & AMOS crashes.

To avoid this, code something like this :

```
FOR I = <a> TO <b>
  IF <condition> THEN I = <b> : GO TO END'LOOP
END'LOOP:
NEXT I
```

If you need to go somewhere beyond the end of the loop, use this line :  
 IF <condition> THEN I = <b> : NEXT I : GO TO <somewhere else>

(4) COMPIL --- Does everyone know about /T option ?

This escaped my attention until just recently. It allows you to see each line of code as it is COMPILed. This can save a lot of time when tracking down any bugs that cause COMPIL to crash.  
 [thanks, Gerry]

(5) VUE option --- /NOYANK or /UNYANK

The sole option currently available with VUE is the /NOYANK option. As it turns out, VUE will also accept /UNYANK as well (does same thing). Undocumented. [thanks, Ron]

(6) VUE --- how to get 1000+ more bytes of room

If you have advanced to the point where you no longer need the VUE menu, then put "HELP=FALSE" into your INI.VUE file. This will do 2 things : first, it will keep the menu from appearing (which can waste much time), and second, it will save (as of 4.4) 1174 bytes of memory, which then becomes available to the file being VUEd. Note, however, that leaving HELP=TRUE in INI.VUE, and then typing HELP? F in VUE will not save any of this 1174 bytes, since VUE must decide whether to allocate this room when it first comes up.  
 [thanks, Jim Rael]

(7) AMOS 5.0 (?) - add hash code to the directory

This has been recommended by at least 2 veteran AM dealers. This would facilitate the implementation of quick backups. To make a quick backup, simply check the (old) backup directory against the (new) current directory and COPY only those files with different hash codes. There is a tradeoff --- faster backup means slower file maintenance, because every VUE,BASIC,EDIT change to a file requires a hash code calculation for the directory update. Perhaps a SET HASH and SET NOHASH choice ? Another good candidate for the directory is a "date/time of last update".

(8) SORT --- losses everything during a crash

SORT works correctly, but it no longer creates 3 temp files on big sorts. A customer reports that, during an 1100-block file SORT, if another crt is used to peek in on the PPN involved, it appears that SORT has temporarily removed the original file name from the directory, but it reappears (of course) at the end of the sort. He also reports that, when a crash occurred during the middle of SORT, that indeed his original file was gone from the directory. The crash was not due to SORT, but SORT has absolutely no backup protection.  
 [thanks, Jim]

(9) FORTH --- two implementations compared

Robert Berkey has compared his Micro-A Forth against the AM Forth.

Name :	Micro-A Forth	AM Forth
From :	Prof. Management Services 724 Arastradero Rd, Suite 109 Palo Alto, CA 94306	Sierra Computer Company 617 Mark NE Albuquerque, NM 87123
Specialty :	faster (at this time) relocatable upon loading has WD-16 assembler	file access implemented (now) relocatable upon runtime (?)
Timing #1 :	22 seconds	34 seconds
Timing #2 :	50 seconds	105 seconds

Timing #1 was for a simple 10-fold repetition of an empty loop, which executes 30000 times. Timing #2 was for the Interface Age Forth Benchmark (finds primes up to 500). The benchmark was altered slightly to sound a bell rather than TIME (which doesn't exist in Micro-A Forth).  
 [thanks, Robert Berkey]

(10) BASORT --- work files are now protected from multi-users in same PPN

Sometime prior to 4.4, I remember watching BASORT as it sorted a long file, and saw that the work files were named SRTMP1,SRTMP2,SRTMP3. I forget the extensions, but they were all the same ("TMP" ?). As of AMOS 4.4, the work file(s) now use the user's job name as part of the file name (a user having problems with BASORT got an error message which referred to file "JOB8.SRT").

(11) WAIT.SBR --- a second parameter ?

The documentation for the Accounting subroutine WAIT.SBR mentions one parameter that may be passed to WAIT. However, many places in the Accounting source code contain a second parameter, "V". This appears to have no effect. Is there some undocumented feature available ? The V variable is used by XCALL INPUT to flag whether the row coordinate is to be doubled when positioning the cursor. /

# ACT IV

(12) PASCAL --- transcendental functions appear to be ok

The functions in a new compiler often have bugs, and no easy "fixes". Indeed, AlphaBASIC's ARCTAN function had bugs until 3.2 AMOS. I have checked out the PASCAL functions and can report that they appear to be bugless. The check used is simple, and remarkably thorough. The following were calculated for Arg=.0001 to .0100 by .0001 steps, and for Arg=.01 to 1.60 (just past PI/2) by .01 steps.

```

A1 := SQRT(Arg*Arg);           ! checks SQRT
A2 := LN(EXP(Arg));           ! checks LN,EXP, hence LOG,POWER
A3 := ARCTAN(TAN(Arg));       ! checks ARCTAN,TAN, hence all trig

```

For each value of Arg, A1,A2,A3 were equal to Arg within rounding error.

Note : FACTORIAL(x) in PASCAL is valid for all real x because PASCAL computes FACTORIAL(x)=GAMMA(x+1). GAMMA is a standard math function.

(13) AlphaPASCAL --- Execution speed is same as BASIC or slightly slower

The Benchmarks in KILOBAUD Magazine #6 and #10 were converted to PASCAL (as faithfully as possible) and run and timed. The results are below, given in seconds taken to run benchmark programs #1 thru #7. All timings were taken with TIME,RUN,PRUN pre-loaded into memory.

Language	#1	#2	#3	#4	#5	#6	#7
BASIC	1.0	3.2	6.9	6.2	7.4	13.7	26.5
PASCAL	2	4	7	6	8	14	27

(14) DUMP 200DVR.DVR --- can't be done

This is because DUMP see digits and looks for a dump memory command. Temporary solution : "COPY A.B=200DVR" and "DUMP A.B".

Ned Joldensma, Holland Transmission Service, 479 Columna, Holland, Michigan 49423 offers the following patches for the ACTIV driver to properly control intensity. Anyone wishing the complete driver please contact the editor or Ned directly.

```

;command processing per director tables
CRTU:  CMP    R1,#CRCB-CRCA      ; check for valid code
      BHI    CRTX                ; and bypass if bad
      DEC    R1
      LEA    R2,CRCA            ; get address of data table
      ADD    R1,R2              ; make absolute data address
      MOVB   @R2,R1             ; get the command

```

\*\*\*\*\* following are additions to this routine \*\*\*\*\*

```

CMPB   R1,#14.                 ; is command low intensity?
BNE    HIGH                    ; no, go test for high intensity
TSTB   FLAG                    ; is terminal already set to low?
BEQ    CRTX                    ; yes, so return doing nothing
CLRB   FLAG                    ; a reset flag = low intensity is

```

```

TTY    RTN                      ; send the control character

```

```

HIGH:  CMP    R1,#15.           ; is command high intensity
      BNE    CTTY              ; no, send character
      TSTB   FLAG              ; is terminal set high?
      BNE    CRTX              ; yes, do nothing
      MOV    #14.,R1           ; intensity character to terminal
      TTY    SETB              ; set flat = high intensity
      RTN

```

```

CTTY:  TTY                      ; send to the terminal

```

\*\*\*\*\* back to original program \*\*\*\*\*

```

CMPB   R1,#31.                 ; special case for eos
BEQ    CRTZ
CRTX:  RTN

```

\*\*\*\*\* more additions \*\*\*\*\*

```

FLAG:  BYTE    1                ; intensity flag

```

\*\*\* Data table follows as per original with the following addition

```

C12:   BYTE    15.              ; change intensity

```

Thanx, Ned

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(legal, medical, etc.)  
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\_\_\_\_\_  
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\_\_\_\_\_  
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